ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

GRADUATE PROGRAM

Challenge and prospects of Mobile and Agent Banking Adoption In Ethiopia Banking Industry

BY: Yikeber Zigale - GSE/1580/08

Advisor: Abebaw K. (PhD)

A Thesis Submitted To the School Of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Master of Business Administration (In Finance)

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Statement of declaration

I, the undersigned, declare that this thesis entitled **"Challenge and prospects of mobile and agent banking adoption in Ethiopia banking industry"** is my original work prepared under the guidance of my advisor Abebaw Kassie (PhD). It hasn't been presented for degree in any other university and that all sources of materials used for the thesis have been duly acknowledged.

Name: Yikeber Zigale Alemu

Signature: _____

Date: _____

Certification

Here with I, state that, Yikeber Zigale Alemu has been carried out this research work entitled **"Challenge and prospects of mobile and agent banking adoption in Ethiopia banking industry"** under my supervision. This thesis paper has been submitted to Addis Ababa University, School of Graduate studies for the examination with my approval as a University Advisor.

Abebaw Kassie (PhD) _____

Advisor Signature

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Approved by the Board of Examiners:

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External Examiner (Name)	**Signature**	**Date**

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Abstract

This research project was aimed to describe the challenge and prospects of mobile and agent banking adoption in Ethiopian banking industry. In order to achieve the objective of this study and answer the research questions the researcher adopted mixed research approach. This descriptive study was conducted based on the data gathered from purposively selected e-banking staffs of the six banks commencing mobile and agent banking; Commercial bank of Ethiopia Dashen Bank, United Bank, Lion International Bank, Wegagen bank and Cooperative Bank of Oromia. The data collected was analyzed using descriptive statistics. The study revealed that environmental (lack of adequate ICT infrastructure, poor quality of internet and mobile network, inconsistent power & network supply in rural areas of the country), organizational (lack of support & commitment of top level management, lack of availability of well trained manpower to build agent network, lack of skill of IT personnel, lack of technical and managerial skill of staffs), and technological (lack of confidence with the security aspect, customer's fear of risk of new technology innovation, and lack of availability of physical security) are challenges of adopting mobile and agent banking. The study also revealed that, the major prospects of adopting mobile and agent banking classified under perceived ease and perceived usefulness are simplicity to perform banking tasks, easiness to understand and use, friendliness with the existing service offering, improving customer service being a solution for banks closing their doors early, motivates fast small cash movers to put their extra money into the banking system, creating wider market coverage for the bank, increases the productivity of banks, enhance customer service, and accessibility of service without limit of time and place. The study recommended banks to consider technology based competition, regulatory body to issue suitable legal frameworks to ease the adoption of mobile and agent banking system while the government should support banking sector by investing on ICT infrastructure development and financial education program.

Key words: Adoption, Mobile Banking, Agent banking, banking industry, challenge and prospect.

Contents

List of acronyms

ACCION	Americans for Community Co-Operation in Other Nations
ATM	Automated Teller Machine
CBE	Commercial Bank of Ethiopia
CGAP	Certified government audit professional
ICT	Information and Communication Technology
KYC	Know Your Customer
MFIs	Micro finance institutions
MNO	Mobile Network Operator
MTN	Mobile Telecommunication Number
NBE	National Bank of Ethiopia
PEOU	Perceived Ease of Use
PIN	Personal Identification Number
POS	Point Of Sale
PU	Perceived usefulness
S.C	Share Company
SIM	subscriber identity module
SMS	Short Message Service
SPSS	Statistical Package for Social Scientists
STK	Sim Toolkit
TAM	Technology Acceptance Model
TOE	Technology-Organization-Environment
USSD	Unstructured Supplementary Service Data
WAP	Wireless Access Protocol

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CHAPTER ONE: INTRODUCTION

1.1. Background of the study

The world banking and financial system is in the throes of a transformation caused by increasing globalization and deregulation. Technological innovations such as those available in ATMs, agent banking, Internet banking, and smartcard applications are taking place at an overwhelmingly fast pace in the global banking industry. Technological innovation is, currently, recognized as one of the key factors on the firms' competitive advantage as well as a critical element in improving the economic and financial results of firms. Indeed, increased economic and financial performance have been observed among firms capable of using innovation to improve their processes or differentiate their products and services in relation to their competitors (Kariuki, 2005)

The rapidly growing information and communication technology (ICT) is knocking the front-door of every organization in the world, where Ethiopian banks would never be exceptional. Technological innovations play a crucial role in banking industry by creating value for banks and customers, that it enables customers to perform banking transactions without visiting a brick and mortar banking system. On the other hand it has enabled banking institutions to compete more effectively in the global environment by extending their products and services beyond the restriction of time and space (Turban, 2008).

According to Suoranta and Mattila (as cited in Gichana, 2013), as technology continues to be an important element in financial service delivery, understanding the factors that influence the behavior of consumers towards using electronic banking technologies will continue to be an important area of research.

According to the Enhancing Financial Innovation Access (2010), Micro finance institutions, commercial banks and other financial institutions have tended to establish their traditional branches in urban centre leaving out on areas that often do not have incentive or capacity to establish formal branches, this leaves out a significant population from accessing banking services.

Competition has pushed commercial banks towards becoming more innovative. These innovations like credit cards, ATMs, internet banking, mobile banking, youth oriented accounts,

and women oriented banking, Interest free banking and mobile and agency banking which are most recently introduced in the banking sector (Bold, as cited in Ayana, 2012).

Like all other business entities financial institutions in Ethiopia are being constantly expanding with technological innovations because of stiff competition in the industry. For instance, till recently bank customers were used to stand in line to get financial services, but now because of the multi channel service outlets they can perform it from anywhere at any time. Funds are transferred electronically between financial institutions and individual accounts, and between individual accounts using e-banking system.

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. In other words, mobile banking offers the possibility to use e-banking services via a mobile phone (Bećirović, 2011).

Agent banking is a kind of branchless banking which is significantly cheaper alternative to conventional branch-based banking that allows financial institutions and other commercial players to offer financial services outside traditional bank premises (Hassan, et al, 2011). Agent banking means the conduct of banking business on behalf of a financial institution through an agent using various service delivery channels (NBE directives Number FIS /01/2012).

Mobile and Agent Banking means the conduct of banking business on behalf of a financial institution through an agent using various service delivery channels; so as to conduct various banking activities which primarily consists of opening and maintaining mobile/regular accounts and accepting deposits; performing fund transfer or cash in and cash out services using mobile devices (NBE Directive No.FIS/01/2012).

One of the emergent alternative delivery channels, agent banking, is fast gaining momentum in many countries in Latin America (Brazil, Columbia and Peru), Asia (India) and South Africa. Agent banking, which leverages heavily on ICT, is a component of branchless banking that allows financial institutions to offer financial services outside the traditional brick and mortar bank premises (Mas, 2008; Mas and Siedek, 2008). It allows customers conduct a limited range of financial transactions at third party retail outlets including post offices, supermarkets, general and grocery stores, pharmacies, and gas stations, among others, located in remote areas. These retail agents are mandated to manage transactions (deposits, payments and cash withdrawals) on

behalf of the financial institution and are remunerated on a fee-for-service basis They are linked to the institution's servers using a telephone line, cable or satellite link and use equipment as Point of Sale (POS) device and barcode readers.

Agent banking improves the bank's geographical coverage and competitiveness so that existing and potential customers can benefit from a greater level of convenience in accessing banking services. This convenience is offered through agents of the bank and when combined with new services can expand the bank's target beyond the traditional markets. The introduction of agency banking is meant to expand access to financial services, especially in rural areas where it has been expensive for banks to maintain a presence, owing to the smaller volumes.

Thus technological innovations play a crucial role in the banking industry in creating value for banks and customers to enable customers perform banking transactions without visiting a conventional brick and mortar banking system in different countries. Mobile and Agent banking service has enabled banking institutions to compete more effectively in different countries by extending their products and services beyond restriction of space and time through established third party with the application of technology. However, the adoption of mobile and agent banking system is a recent phenomenon in Ethiopia. Thus, the researcher is interested to describe factors that affect the adoption of mobile and agent banking in Ethiopian banking industry with respect to the challenges and benefits derived from adopting the system where the numbers of bank branches are ever increasing to outreach customers with significant amount of investment.

1.2. The Ethiopian banking industry

According to NBE annual report (2016/17) Ethiopian financial sector has been resilient and continued to operate under safe and sound environment. Commercial banks have continued to expand their financial intermediation and remained highly profitable. With the opening of 956 new branches in a single year their total branch network increased to 4,257 from 3,301 a year earlier which resulted in improved access to finance. They have also stepped up their deposit mobilization, loan collection and disbursement. Accordingly deposits depicted a 29.8 percent annual growth while loan collection rose 25.9 percent and new loan disbursement 23.8 percent during the review fiscal year. Their non-performing loan was within the required level.

In 2015/16 the number of banks declined to 18 from 19 due to the merger of Construction & Business Bank with Commercial Bank of Ethiopia. Of the 18 banks 16 were private and 2 public.

Banks opened 956 new branches in 2016/17 raising the total branch network to reach 4,257 from 3,301 last year. As a result, bank branch to population ratio declined from 1:27,932 people in 2015/16 to 1:22,164 people in 2016/17. About 33 percent of bank branches were located in Addis Ababa.

Total resources mobilized by the banking system in the form of deposit, borrowing and loan collection hiked by 55.2 percent and reached Birr 233.6 billion at the end of 2016/17. Aided by remarkable branch expansion, deposit liabilities of the banking system topped Birr 568.8 billion, reflecting 29.8 percent annual growth rate. Saving deposits grew by 35.2 percent followed by time deposits (26.4 percent) and demand deposits (24 percent). Of the total deposits, saving deposits accounted for 51.6 percent, demand deposits 37.3 percent and time deposits 11.1 percent. The share of private banks in deposit mobilization increased to 35.5 percent from 33.6 percent last year mainly due to the opening of 796 new branches. CBE alone mobilized 64.4 percent of the total deposits due to its extensive branch network.

1.3. Statement of the problem

The absence of formal banking to the population who live under low income category makes them vulnerable to traditional modes of parking their savings in land, buildings, bullions, etc which in turn has its own regressing effect towards capital formation in the Country. Besides, such population is exposed to the informal channels of credit like family, friends and moneylenders as a result of which entrepreneurial spirit of the masses to increase outputs and prosperity in the countryside would be compromised. Last but not least, a considerable amount of money that is meant to the poor does not actually reach to the intended parties as it passes though large system of government bureaucracy and is exposed to money leakage.

Mobile and Agent Banking comes up as a remedial solution since it allows the Government to directly make cash transfer to beneficiaries through their mobile wallet accounts which in turn is expected to reduce government's subsidy bill (as it shall save that part of the subsidy that is leaked) and provide relief only to the real beneficiaries *(Tashima et al, 2011).*

Agent banking represents a significant opportunity to reduce transaction costs such as travel for clients by bringing financial services to hard-to-reach and geographically dispersed areas. This is especially true in Africa where some areas are sparsely populated leaving long distances between the customer and the bank, overall literacy levels are fairly low and banks and other financial institutions often do not have sufficient incentive or capacity to establish formal branches in

these areas. Obviously, the set-up of agent banking is less costly and more flexible than for traditional bank branches since it reduces the need to invest in staff and physical infrastructure *(Barasa et al, 2013).*

For countries like Ethiopia, where financial accessibility is very low, agent banking is suitable in many ways. It enables financial institutions to become accessible in terms of time and place. The mobile revolution in urban and rural areas also means a golden opportunity for the growth of agent banking. This form of service provision can be used to clear the road for branch operations. With agent banking, it is possible to collect a small number of customers around each agent and introduce the name and the service of the bank to potential clients; which makes easy the operation of a new branch in the area. For the clients, agent banking reduces the time and money needed to visit a branch each day to deposit and withdraw their money. They can complete such transactions from the shop next door. This opportunity motivates fast but small cash movers, like retailers, to put their extra money into the banking system every day. For the agent, the system is a source of income as it works on commission basis. It enables the agent to earn a good reputation from the bank with which it is affiliated and perhaps, get some preferential rights, like credit.

The above profound realities justifies for an efficient and affordable banking system that can reach out to all. Therefore, there must be a push for financial inclusion using alterative banking service such as Mobile and Agent Banking Service. On one hand, there is untapped market for financial institutions taking in to account the volume of unbanked population and the exploding number of mobile subscribers.

When compared with the banking industry operated in developed country, without doubt the banking industry in Ethiopia is underdeveloped and therefore, there is an all immediate need to embark on capacity building arrangements and modernize the banking system by employing the state of the art of technology being used anywhere in the world (Gardachew, 2010).

As the second highest populous nation in Africa, Ethiopia has the lowest financial inclusion rate (banked population) as compared to Sub-Saharan African Countries and yet having alarmingly increasing mobile penetration rate which can be used as tool for financial inclusion.

In order to encourage further mobile banking adoption in developing countries, a better understanding of the barriers and drivers impacting M-banking adoption is critical. By gaining an in-depth understanding of the factors and conditions that influence developing country's ability

to fully adopt and realize its benefits, strategic implications can be generated for the researchers and practitioners regarding how to promote the growth of mobile and agent banking in developing countries (Zhao et al., 2008). However, despite the importance of these adoption studies in developing countries, limited up-to-date studies are currently available especially in Ethiopia. Therefore, more studies are still required to understand the challenge and prospects of Mobile and agent banking in Ethiopia to identify areas in which the country lags behind that inhibit the adoption.

In the Ethiopian context, mobile and agent banking is at its infant stage and banks are under implementation stage since the issuance of the NBE directive on Mobile and Agent banking service in 2012. But, till recently only six banks (Dashen bank, United Bank, Lion Bank, and cooperative bank of Oromia, commercial bank of Ethiopia, and Wegagen bank) banks are recently announced the launching of the service. Those banks announced the launching of the service are only 33% of the total which is less than half. Therefore more other banks have to launch the service by overcoming the challenge on adopting mobile and agent banking. however , there is quite literature gap and little local research works have been conducted in the field except the research works by Ayana (2012), Abdulkadir (2014) and Henok (2015), Tamirat (2017) and Hayat (2017) having its own gap in scope and only two (Tamirat & Hayat) of them are recent. Among the studies conducted on the title in the last three years, Hayat (2017) "Mobile Banking adoption in Ethiopia: A Case of Commercial Bank of Ethiopia'' focused on mobile banking only as a title and Commercial bank of Ethiopia from the industry which is very limited and Tamirat Assefa (2017) on assessment of factors affecting adoption of agent banking the case of lion international bank s.c. (agent perspective) which is also limited in scope and it is from the agents perspective.

In addition to this, since technology is rapidly growing and the numbers of participant banks in the growing technology are increasing the sector needs up-to-date studies identifying challenge and prospects of the adoption to overcome challenges and harness the opportunity of adoption of mobile and agent banking. Therefore to address the current gap in literature; the study is designed to assess the challenge and prospects of adopting mobile and agent banking which enables concerned bodies overcome the challenges and exploit the opportunities entailing to the Service and thereby expedite financial inclusion in Ethiopia.

1.4. Research questions

To have ample understanding about the current challenge and prospects of adopting mobile and agent banking in Ethiopia banking industry the following research questions needed to be addressed within the domain of the study:

I. What are the challenges for the adoption of Mobile and Agent Banking service in Ethiopia banking industry?

II. What are the prospects opportunities that necessitate to the adoption of Mobile and Agent Banking service in Ethiopian banking industry?

1.5. Objectives of the study

1.5.1. General objective

The general objective of the study is assessing the challenge and prospects of mobile and agent banking adoption in Ethiopian banking industry.

1.5.2. Specific objectives

The specific objectives of the study are:

1. To describe barriers/challenges those inhibit commercial banks in Ethiopia to adopt mobile and Agent Banking innovations.

2. To identify prospects/opportunities that can facilitate the adoption of mobile and Agent Banking services in Ethiopia banking industry

1.6. Scope and limitation of the Study

1.6.1. Scope of the study

The study intends to describe the challenge and prospects of adopting mobile and agent banking in Ethiopia banking industry. This study is limited to those banks that have already got a license from National bank of Ethiopia and commence Mobile and Agent Banking service.

1.6.2. Limitation of the study

The major limitation of the study was lack of adequate empirical evidences in Ethiopian context to the subject under study which enable to support the researchers finding.

1.7. Significance of the study

This study is important to commercial banks by bringing factors that they deem to be critical to the acquisition of customers to their attention and have a clear understanding of factors that would be important in embracing and adopting mobile and agent banking as a product. It paves

the way for banks to develop appropriate strategy on lessening the challenges and harnessing the opportunities entailed to the business.

It also benefits the government in that it indicates areas to be improved in an effort to provide financial inclusion to the unbanked low income and rural population.

The findings of the study also have practical importance through providing significant insight for decision makers at regulatory bodies and financial institution for passionate commitment towards accelerating the implementation of mobile and agent banking by way of overcoming the challenges forward.

Since mobile and agent banking enhances the subscriber retention and serves as a new revenue stream as more and more subscribers join the service provider in need of the Services Ethio-telecom is another beneficiary using the study to overcome the challenges related to the service provider itself. Finally it serve as a ground for further studies and the finding of the study initiates other researchers to perform a better, in-depth and up-to-date study on the area.

1.8. Organization of the study

The research paper is organized into five chapters. The first chapter deals with introductory part consisting of background of the study, statement of the problem, basic research questions, objective of the study, significance of the study, scope of the study and organization of the paper.

The second chapter contains literatures related to the study. In this chapter various theoretical concepts that are related with Mobile and Agent Banking or Branch Less Banking, financial inclusion and empirical studies on the subject matter are incorporated.

The third chapter deals with the methodology part (the research design, sampling and sampling techniques, sources of the data, data collection tools/instruments employed, the procedures of data collection, and the methods of data analysis used).

The fourth chapter deals with the result and discussion part. And finally, the fifth chapter presents summaries of major findings, the conclusions and the possible recommendations.

CHAPTER TWO: LITREATURE REVIEW

2.1.Theoretical review

2.1.1. Mobile Banking and Agent Banking Definition

Mobile banking means performing banking activities which primarily consist of opening and maintaining mobile/regular accounts and accepting deposits; furthermore, it includes performing fund transfer or cash-in and cash-out services using mobile devices (NBE Directive, FIS-01-2012).

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. In other words, mobile banking offers the possibility to use e-banking services via a mobile phone (Tiwari and Buse, 2007).

According to National Bank of Ethiopia Directive (FIS/01/2012) issued to regulate the Mobile and Agent Banking services "**agent**" means a person engaged in a commercial or business activity and has been contracted by a financial institution to provide the services of the financial institution on its behalf in a manner specified in these directives; and "**agent banking**" means the conduct of banking business on behalf of a financial institution through an agent using various service delivery channels as permitted under these directives (NBE Directive, FIS/01/2012).

Agent banking is a service outlet contracted by financial institution or mobile network operator to process client's transactions rather than a bank teller. It is the owner or an employee of the retail outlet who conducts the transaction and lets its client deposit, withdraw and transfer funds, pay their bills, inquire about an account balance, or a direct deposit from their employer, or receive government benefits. Banking agents can be pharmacies, super markets, conveniences stores, lottery outlets, post offices and so on (Ivatury & Layman, 2006).

Agent banking is a kind of branchless banking which is significantly cheaper alternative to conventional branch-based banking that allows financial institutions and other commercial players to offer financial services outside traditional bank premises *(Hassen, et al, 2011).*

Agent banking means the conduct of banking business on behalf of a financial institution through an agent using various service delivery channels (NBE directives Number FIS /01/2012).

Agency banking is branchless banking based on ICT that allows financial institutions to offer financial service outside the traditional bank premises (Mas, 2008; Mas and Siedek, 2008). It allows customers to conduct a limited type of financial transactions at third party outlets that include post offices, supermarkets, general and grocery stores, pharmacies, and gas stations etc located in remote areas (Warii, 2011).

Adoption is the acceptance and continued use of a product, service or idea. Consumers go through a process of knowledge, persuasion, decision, implementation and confirmation before they are ready to adopt a product or services (Rogers and Shoemaker, 1971). Today the world is witnessing profound transformations and acceleration as a result of the tremendous development of information technology and steady growth of volume of information that has led to the emergence of new types of activities and transactions in various fields (Joseph N, 2005). The banking sector has been one of the first area that adopted different electronic applications to improve performance and gain a competitive advantage strategy. In light of the extensive use of information and communication technologies, the financial services industry and banking has provided new systems and applications that maximizes the use of modern technology and are now available (Francis, 2014). According to Rogers (1983), the rate of adoption is defined as the relative speed with which members of a social system adopt an innovation. Therefore, it has become necessary for banks to change the concept of traditional banking service to because of the rapid growth of electronic banking services and ever increasing competition among banks to raise efficiency, reduce costs and attract more customers (Francis, 2014).

2.1.2. Models of Mobile and Agent Banking

There are three widely practiced models to conduct the Mobile and Agent Banking business worldwide. These are: the Bank-Led Model, the Telco-Led (The Mobile Network Operator (MNO)-Led Model) and the Mixed Model.

Bank lead model is the one in which a licensed financial institution (typically a bank) delivers financial services through a retail agent. The financial products and services are developed by banks but distributed through retail agents (Lyman, Ivatury and Staschen, 2006). The bank led model composed of three main entities; the bank, the retail agents, and the customer. In this

model, the bank must carry out an audit of its agents to ensure that the agents operate within the generally accepted rules and regulations in order to safeguard the interests of the bank, agents and the customers (Sunguti, 2013). The Regulation of Mobile and Agent Banking Services Directive No.FIS/01/2012 issued by National Bank of Ethiopia (NBE) clearly stated that Financial institutions shall ensure their agents fully comply with the requirements of "Prevention and Suppression of Money Laundering and the Financing of Terrorism Proclamation Number 657/2009" and "Customers Due Diligence of Banks Directives No. SBB/46/2010".

The other Model is the **Telco-Led Model** which is implemented by most successful countries in Mobile and Agent Banking business. However, the issue of fund protection is one of the most challenging in the non-bank led model: Non-bank issuers are taking funds from the public, MNOs are not regulated or supervised prudentially and what if the m-banking provider goes bankrupt, to whom claim presented. Unlike the Bank-Led model, the loose established mechanisms to protect users' funds make the risk of the Telco-Led model higher than the Bank-Led Model (Laurent, 2011).

However, completely detaching the Telco-Led Model from implementation in fear of the risk will delay the pace of penetration/implementation of financial inclusion in one country. In this regard, the third Model, the **Mixed Approach**, may strike the balance between risk and penetration. For example, Nigeria is adopting the Bank-Led model while Kenya is implementing the Telco-led Model and currently Kenya has over 45,000 agents (Oxford Policy Management, 2011). Therefore, the pace of addressing to the remote area through bank led model may not be as fast as the way the Telco-Led approach. However, the Bank-Led Model approach is better in managing the business and controlling the risk that may occur following availing the service at large scale to avoid complication of managing the risk.

2.1.3. Benefits /Drivers of Mobile and Agent Banking

In many developing countries, banks have expanded their network through trusted local "agents" or "correspondents" to offer their services. For instance, whereas previously many banks focused on traditional banking, agents in a number of countries are now authorized to offer a many of the traditional products offered by banks. Banks have, therefore, moved up the ladder of product range to offer more sophisticated banking products such as bank supported insurance and asset financing products.

i. Cost of Banking

Agency banking represents a significant opportunity to reduce transaction costs such as travel for clients by bringing financial services to hard-to-reach and geographically dispersed areas. This is especially true in Africa where some areas are sparsely populated leaving long distances between the customer and the bank. Moreover, in these areas overall literacy levels are fairly low. Also, banks and other financial institutions often do not have sufficient incentive or capacity to establish formal branches in these areas. Obviously, the set-up of agent banks is less costly and more flexible than for traditional bank branches since it reduces the need to invest in staff and physical infrastructure. These views are supported by Kithaka (2001) and Kasekende (2008) among other researchers.

ii. Enhanced Accessibility to Banking Services

According to Berger (1998), agent banks offer similar services as a real bank. This ranges from cash deposits and withdrawals, disbursement and repayment of loans, payment of salaries, pension, transfer of funds, and issuance of mini-bank statements, among others. Berger further argues that, the agent also facilitates new account opening, credit and debit card application, cheque book request, hence eliminating the need for the commercial bank to have branches all over. This is being replicated across the country, especially in rural areas.

iii. Wider Market Coverage and Customer Loyalty

According to Christopher (2002) the process of loyalty building can be seen in the form of a ladder in which the customer has to be converted into a client then into a supporter, an advocate and ultimately to a partner. Finding loyal entrepreneurs requires targeting those segments to which the bank can deliver superior value. The economic benefits of customer loyalty often explain why one bank is more profitable than its competitors.

Therefore, building a highly loyal customer base cannot be done as an add-on; it must be integral to a bank's basic business strategy. The agency banking model has played this role in a great way.

According to Cohen (2002) the ongoing global expansion of a high-tech telecommunications infrastructure, coupled with the increased availability of advanced information technology services, is having an impact on almost every emerging industry. Emerging industries are newly formed or reformed industries that have been created by technological innovations, shifts in

relative cost relationships, emergence of new consumer needs or other economic and sociological changes that evaluate a new product or service to the level of a potentially viable business opportunity. The agency banking model is expected to continue playing a catalytic role in expanding the reach of banks within a rapidly changing technological environment.

Mobile and Agent Banking business increased income through commission; **bank agents** are usually awarded commissions whenever they perform transactions on behalf of the bank. Increased customer traffic brings additional benefits to the agent; the increased traffic brought about by customers performing banking activities also translates to more people getting to know your business hence more sales, the question comes at the initial stage there might not be sufficient number of customer who frequently visit the agent premises *(Chiteli, 2013).*

Customers are also one of the drivers of Mobile and Agent Banking business. Most financial institution closes their doors early, but with agents, for as long as the business premise remains open, you can do your transactions, and this gives flexible hours. This has proven to be very convenient especially for people who are busy during the day. The other benefits to customer are financial institution agents have proven to be cost-effective especially to people who live in rural areas that are far away from banks *(Veniard, 2010).*

Financial institutions have recorded an increase in their profits and Agent Banking is one of the main attributes to such huge profits. Banks are finding it cheaper to set up agents as opposed to opening a branch where they will incur extra costs of staffing, rent, electricity etc. With Agent Banking, the agent incurs almost all the costs. Agent banking has made it possible for bank products and services to penetrate areas that at first seemed impossible.

With Agent Banking banks have reached even the smallest of villages. With regards to wide customer base, Bank agents are paid commissions when they sign up new customers and this has led to an increase in the number of customers for banks. Banks are finding it effective to increase their customer numbers in this manner as opposed to using sales people *(*Lehman, 2010*).*

When financial institution do not have branches that are close to the customer, the customer is less likely to use and transact with their service. However, the emergence of new delivery models as a way to bank has played a key role to drastically change the economics of banking by the poor. By using retail points as agents, banking providers can offer banking services in a commercially viable way since they are able to reduce fixed costs and encourage entrepreneurs

to use the service more often and in the process provide access to additional revenue sources (Ivatury & Layman, 2006)..

At the end, we can conclude that mobile banking is an efficient tool, which can be used to facilitate financial transactions, payment transactions as well as crediting transactions. In order to enable a wide use of mobile banking it has to be of easy usage and applicable to all types of mobile phones. And of course, it has to be cheap for all mobile subscribers. In this way, mobile banking can have a large acceptance. However, challenges have to be considered, such as technological acceptance, trust, traditional ways of conducting financial transactions and the massive use of cash in developing countries. Nevertheless, we think that mobile banking is able to enhance economic development by facilitating financial transactions. However, it has to be noted that mobile banking will not replace classic banking, but is only able to fulfill a niche, i.e. offering banking service to groups, who traditionally do not use a bank account (Ivatury & Layman, 2006).

The agent offers front-line customer service including physical space and operation of the Payment order System device. The agent intermediates bank transactions through its balance sheet, transforming cash in the-till into money-in-the-bank, and vice versa. This is actually not so different from the normal business of a store: transforming inventory into cash (or receivables) and back (i.e., store stocks goods, which ties up its working capital until the goods are sold). In the agent mechanism described, the store also ties up working capital, but in the form of cash-in the- till and balance-in-its-account rather than in the form of physical inventory. The agent needs to go to the bank from time to time to rebalance its cash in the till versus its money in the bank account (Lyman, 2006).

The agent absorbs/provides excess liquidity from/to the community of bank customers and deposits that into/withdraws from the bank on their behalf. In effect, the community delegates the bothersome business of going to the bank to the agent. This delegation introduces economic efficiencies. By netting the community's overall net cash position (offsetting withdrawals against deposits), the total amount of cash that needs to be transported to/from the bank is reduced. And by pooling the cash requirements of all customers, the required number of trips to the bank is reduced (Laurent, 2011).

According to Berger (1998), agent banks offer similar services as a real bank. This ranges from cash deposits and withdrawals, disbursement and repayment of loans, payment of salaries, pension, transfer of funds, and issuance of mini-bank statements, among others.

Berger further argues that, the agent also facilitates new account opening, credit and debit card application, cheque book request, hence eliminating the need for the financial institutions to have branches all over. This is being replicated across the country, especially in rural areas.

The Government will be highly beneficial through the high rate of financial inclusion so that the government can benefit from effective utilization of resources. It enhances saving and growth in the economy thereby serves as a way out to combat poverty reduction. The Kenyan situation remains an important case study in this regard. In Kenya, the Central Bank has already licensed four banks to carry out agent banking business and approved 8,809 agents. Many others are expected to be licensed in due course. This is expected to deeply boost penetration of low cost banking services in the country (Barasa, et al, 2013).

The MNO (the Mobile Network Operator) or Network Service Provider will be beneficial from different angles such as enabling the Operator to provide financial services for all subscriber segments (in the case of MNO Model), serves as a means for the creation of new services around its core distribution system, enhances the subscriber retention and serves as a new revenue stream as more and more subscribers join the service provider in need of the specific Mobile and Agent Banking Services.

2.1.4. Factors influencing adoption of Mobile and Agent Banking

Electronic banking adoption has gained special attention in academic studies during the past years to investigate factors of adoption. Many researchers have been used different frame works in the study of adopting new technological innovation. Among frameworks that have been developed based on the past studies, Technology Acceptance Model introduced by Davis (1985) is one of the most cited theoretical frameworks to predict the acceptance and use of new information technology within organizations. The Technology Acceptance Model hypothesizes that system use is directly determined by behavioral intention to use, which is in turn influenced by users' attitudes toward using the system and the perceived usefulness of the system. Attitudes and perceived usefulness are also affected by perceived ease of use.

Technology-organization-Environment framework (TOE) is another framework which identifies three basic Factors for the adoption of technological innovation, i.e., technological factors, organizational and environmental factors. TOE framework was proposed by Tornatzky and Fleischer; (1990) it is designed for studying the likelihood of adoption success of technology innovations. This framework is a comprehensive and well received framework in the context of innovation adoption by organizations and has been used in many studies (Salwani, et al, & Ellis 2009; Chang et al 2007, Zhu & Kraemer 2006). According to Tornatzky and Fleischer (1990), technology adoption within an organization is influenced by factors pertaining to the technological context, the organizational context, and the external environment.

i. Organizational Factors

Organizations are different in their preference to adopt technological innovation (Iacovou, 1995 & Grover, 1993) influenced by a number of factors, like firm size, top management support and financial and human resources.

a. **Commitment and support of top management: -** Top management of an organization is commonly identified as an important factor for any technology adoption within an organization. If top management is assertive in their decision making regarding technology adoption and committed to it, the adoption is likely to take place.
b. **Financial and human resources: -** Financial resources are an important factor in facilitating innovation adoption for any organization and they are often correlated with the firm size (Kuan 2001 & Iacovou 1995).Therefore, it is expected that the availability of financial resources within the adopting firms is important for mobile and agent banking adoption. These resources enable banking institutions to obtain human related resources including the required skills and expertise to develop and support provision of technology innovation.

ii. Environmental factors

Researcher identified factors related to the environmental context that play a crucial role in technology adoption and some factors in this category are arguably more influential than others, especially when countries under study have an authoritative government leadership. The Four environmental factors relevant for mobile and agent banking adoptions included in this study are:

a. **Legal and regulatory Frameworks: -** The existence and maturity of E-commerce legal frameworks within a country influence the diffusion of online transactions including mobile and agent banking (Martinson & Trappey, 2001).
b. **The National ICT infrastructure: -** National ICT infrastructure is a major factor that supports the adoption of E-banking as the case for other E-commerce initiatives. Without an adequate development level and quality of a nation's ICT infrastructure, new technology adoption and use cannot do well (Efendioghu 2004 & Scupola 2003).
c. **Competitive pressure: -** Competitive pressure can strongly influence any bank to develop and adopt E-banking initiatives and it may affect the bank's perception towards E-banking system. As implied in previous studies (Quaddus & Hofmeyer, 2007; Gibbs, Kraemer & Dedrick, 2003).
d. **Government Support:-** Government can either directly or indirectly affect the adoption of electronic banking in terms of creating a favourable environment and impetus for banking institutions and their customers so that the services can be diffused with the community (Iacovou, 1995).

iii. Technological factors

Perceived risks: - Issues related to security have always been a concern when dealing with technologies related to online transactions such as mobile and agent banking (Chang, 2007 & Rogers, 2003). Therefore, the perception of the risks regarding mobile and agent banking adoption is expected to influence its adoption and further growth.

When building, incentivizing, and managing a network of retail agents, banks must address the operational, legal, infrastructural, social, structural and economic challenges in a way that fosters a positive and consistent customer experience that will create and maintain trust in the system.
Managing the structure, as one of the challenges by financial institutions towards the provision of Mobile and Agent Banking, refers to the approach that financial institutions establish relationship with their agents. The relationship can be direct, indirect or hybrid. A direct relationship with banking agents is one in which a financial institution uses its own staff to identify and evaluate potential agents and then contract and manage them. An indirect relationship involves contracting an external management company to manage the entire process. There is also a hybrid approach in which a financial institution assumes responsibility for parts

of the process, for example, selection and contracting, while a management company is contracted to oversee the day-to-day management of the agent networks (Mas, et al 2008).

Building agent network is also a challenge which focuses on establishing effective agent with well-trained manpower; trusted by customers; strategically and conveniently located; and properly incentivized to follow procedures, keep sufficient float on hand, and serve customers.

When agents provide a range of services (e.g., account opening, deposits, withdrawals, bill payments, etc.) they are able to generate transaction volume and balance liquidity. An agent must maintain adequate cash and e-money float balances to meet customer cash-in/cash-out requests. If too much cash is taken in, the agent may run out of e-float and not be able to accept more deposits. If there are too many withdrawals, the agent will accumulate e-float but run out of cash. In either case, customers will get discouraged if the agent cannot provide the services they need when they need them. In addition, a secure mechanism needs to be in place to transport cash needs to and from an agent (Flaming et. al, 2011).

Availability and Quality of Infrastructure is one of the challenges which impact the Agent Banking business. Interruption in services of Telecommunications due to technical or nontechnical issue and non-availability of any parallel system or alternative may cause disruption in service availability. Similarly, congestion in network may become a bottle neck in providing Quality of Service to Agent Banking user. The inconsistent availability of power supply in the country particularly in the rural area is one of the challenges for the implementation and continuous availability of Mobile and Agent Banking service. Therefore, Utility disruptions or software or hardware failures can cause a lack of service availability and information loss. Financial Institution without business continuity and disaster recovery planning may be on risk of non availability of services in case of catastrophic events, power breakdowns, fire etc and natural disasters (flooding, earthquake etc) (Flaming et. al, 2011).

2.1.5. Mobile and Agent Banking Technology Solutions

Currently, mobile and agent banking is implemented through three different technology solutions: browser-based applications, messaging based applications and client-based applications.

The browser-based application is essentially a Wireless Access Protocol (WAP)-based internet access. This requires a compatible mobile phone which is WAP enabled. The mobile phone is used to access banking portals through the internet (Brett, 2010).

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

On client based applications, special software is installed in the mobile phone. An example of a client based application is what is called the Standard SIM Toolkit (STK).

2.1.6. Legal Framework of Mobile and Agent Banking in Ethiopia

In late 2012, National Bank of Ethiopia has issued a directive cited as "Regulation of Mobile and Agent Banking Services under Directives Number FIS/01/2012" with effective date of January 1, 2013. This directive has clarified and framed the business modality of the agent and mobile banking services in Ethiopia. Only financial institutions that are licensed by the National Bank of Ethiopia are allowed to engage in the mobile banking services as we follow a bank led model in the financial services. Mobile and agency banking service shall be carried out only within Ethiopian geographic boundary and only with Ethiopian Birr. Banks can deliver mobile banking through their agents as specified in the directives. As per same directive, the following are permissible activities of an agent; an agent, on behalf of the principal financial institutions as agreed between it and the financial institution and as may be specifically perform customer due diligence and Know Your Customer (KYC) requirement of natural persons and make registration:

- ✓ Shall open regular saving account of natural persons,
- ✓ Open mobile account of natural persons**,**
- ✓ Perform cash-in and cash-out services,
- ✓ Transfer funds between different parties,
- ✓ Perform various payment services.

But, notwithstanding the provision stated above, agents shall not undertake banking transaction that involves the use of check and other check related instruments and any other operation related with provision of credit. The directive also clearly stipulates that where financial institutions carryout mobile banking services through agents;

- The financial institution/principal shall be fully responsible and liable for all actions and omissions of its agents and this responsibility shall extend to actions of the agents,
- All transactions involving deposit, payment, withdrawal or transfer of cash from or to an account shall be made in a real time basis and financial institutions shall ensure that agents are able to carry out same,
- Agents shall not under any circumstance accept funds from customers in excess of their prepaid balance with banks,
- Financial institutions shall automatically debit or credit the agents' or customers' account upon conduct of any transaction that necessitates reduction or increase of the account balance of the agent or customer and
- A bank shall have a mechanism to uniquely identify each of its agents.

The regulatory body national bank of Ethiopia also sets limits on mobile banking transaction on the same directive. It states that the maximum balance that should be available in a mobile account of a person with a financial institution at any time shall not exceed Birr 25,000 and the daily mobile banking transaction that involves debiting of an account by a person with a financial institution shall not exceed Birr 6,000.

This directive also states that the technology used for delivery of mobile and agent banking services must be secure and should at least ensure the:

1. **User Risk**: User awareness on their information security including how to secure Personal Identification Number (PIN) and other security features.
2. **Infrastructure and Software Application Risk**: information security standard, application error, message type and message handling, PIN and user authentication.
3. **Communication Media Risks**: communication protocol risks, data storage risks, and availability and quality of service.
4. **Agent and Third Party Service Provider Risks**: data Encryption and message integrity, data storage and backup, physical and logical access to system, and authenticity and non-reputability of communication.

2.2.Empirical Review

The researcher tried to review related researches works pertaining to the topic in order to demonstrate through understanding of the research topic. Based on the objectives and main findings of each research works under consideration, the review tries to make a link between the

theoretical and empirical reviews in light of the underlying themes towards the provision of mobile and agent banking services; such as the various challenges posing to the business, the prospects towards the drivers of Mobile and Agent Banking services, the models employed by various countries and the success or failure factors behind such innovative banking services towards financial inclusion in such a way that addressing the concept behind the statement of the problem.

2.2.1. Prospects and Challenges of mobile and agent banking-International Aspect

Lehman (2010) "Operational Management Challenges of Agent Banking System" has studied operational challenges of agent banking system in a global level focusing on the challenges on building agent network, managing of liquidity and managing of the channel.

The study finds out that how building consistent customer experience is important towards bringing success in agent networking indicating the success of Safaricom-Kenya (M-PESA) and the failure of MTN Uganda that followed inconsistent customer experience. With respect to liquidity management the study finds out how managing liquidity plays fundamental role in ensuring system viability. In this regard the experience of Vodacom- Tanzania was taken as a real experience which allows Agent Aggregators who perform the task of agent recruitment, managing their floats and transporting cash to the agent. The aggregator receives a flat fee for each new agent and a percentage of the agent commissions which provides an incentive to sign up high-quality agents who will actively transact. From the perspective of channel management, the study finds out that outsourcing or using third parties for agent channel management is recommended since with the expansion of agent network, it would be difficult for providers to manage the business and covers the "last mile" of the distribution chain.

Ahmed et al. (2011) "Problems and Prospects of Mobile banking in Bangladesh" have studied the problems and prospects of Mobile Banking in Bangladesh. The objectives of the study were to find out the prospect of mobile banking in Bangladesh, to detect problems of mobile banking in Bangladesh and to make suggestion on the basis of finding. For this research primary data were used and the study adopts with descriptive in nature. The study finds out that the Push-Pull m-banking service which is offered through SMS (Short Message Service) can provide several banking services by sending SMS to bank server from any remote region in Bangladesh.

Fouzia and Subran (2010) "Push Pull Services Offering SMS Based m-banking System in Context of Bangladesh". The objective of the study is to create an extraordinary opportunity for

new mode of banking facility using mobile devices. The study found out that the Push Pull SMS banking service is an effective communication channel which saves time, provides multitasking opportunity, easy and familiar for the user and less costly and riskier system both for the user and the service providers.

Simeon and Bamidele (2012) "Cashless Banking in Nigeria: Challenges, Benefits and Policy implications", have studied the challenges, benefits and policy implications towards the creations of cashless society in Nigeria and have found that the shift towards a cashless Nigeria seems to be beneficial though it comes with high level of concerns over security and management of cost savings resulting from its implementation. Its objective is to examine the implication of cashless banking with a view to exposing the possible challenges and prospects it poses to the Nigerian economy whilst employing aggregated approach. Vis-à-vis the rising doubts with regard to the effectiveness of various economic policies in achieving developmental goals of Nigeria, the study presented significant recommendations: availability of sufficient and well-functioning infrastructural facilities (notably electricity), harmonization of fiscal and monetary policy, regular assessment of the performance of cashless banking channels (individually and collectively), consideration of the present state and structure of the economy, redesign of monetary policy framework and greater efforts towards economic growth whilst managing inflation.

Gichana (2013) in Kenya has made a study on "Challenges of Agent Banking Experiences in Kenya" with the objective of determining the extent to which insecurity affects agent banking, investigating the extent to which capital availability affects agent banking, establishing the effect of liquidity/float related problems and how perceived credibility affects the agency banking. The study has found out the uptake of agent banking in Kenya has not been well appreciated by the target beneficiaries who include among others the micro and small enterprises in the rural areas in Kenya who were expected to benefit from this technologically innovative service. The paper is based on a study conducted to reveal the challenges which are hindering the rural people of Kenya benefiting from agent banking. In as much as it has been witnessed that there is an increase in penetration of agent banking services clients have not fully made use of the available agents at their localities to cut down on transaction costs occasioned by travelling to traditional branches and also time wasted on queuing for services. The researcher also identified some of the factors hindering the well functioning of agent banking despite mounting financial literacy,

lack of mobile network services and float, lack of capital, issues of insecurity and fear of robbery. The study tried also to indicate the CGAP(2010) report that states the usage of semi-formal financial services in Kenya including m-banking platforms such as M-PESA increased from8.1% in 2006 to 17.9% in 2009, while the proportion of the population with access to only informal financial services decreased from 35% to 26.8%. The share of the population excluded from any financial service decreased from 38.3% to 32.7%, these statistics suggest strong gains in financial inclusion coinciding with the introduction of M-PESA.

Mosoti et al. (2014) "An Investigation on Slow Adoption of Agent Banking Services in Kenya as Strategic Response by Commercial Banks" The objective of the study was to investigate on the factors influencing slow adoption of agent banking services by customers as a financial inclusion tool by commercial banks in Kenya. The study has found that costs charged due to use of Agent Banking services were high this is because they were much higher compared to normal bank charges such as ATM charges. Transport is also an issue for those areas where there is no wide network coverage, trustworthiness, security of transacting, infrastructure challenges such as system and power failure and liquidity concern were some of the challenges that contributed to the slow adoption of Agent Banking. The study also found out that other competing services offered by banks which are far much convenient, reliable, guarantees confidentiality and which operate for 24 hours such as ATMs, Internet Banking and Mobile Banking creates slow adoption of the Agent banking business.

Bansal (2014) "Perspective of Technology in achieving Financial Inclusion in Rural India" The objective of the study was to find out the contribution of ICT towards financial inclusion in India and analyze different applications of ICT which banks are adopting. This would directly or indirectly reflect the effectiveness of the financial institutions efforts to bring-in underprivileged people to the main stream financial inclusion system, especially in rural areas and support government growth in inclusive growth. The paper tried to magnify the role of mobile technology towards bridging the gap between the banked and unbanked in India considering the 811 million people with mobile phones but only 17% of them have a bank account. The research found out that the main reason for slow inclusion is the absence of appropriate delivery model and products which satisfy the financial need of low income families. Financial inclusion in true sense would mean not only to make people aware but encourage them to buy the financial

products and services. The institutions must foresee the challenges lying ahead and take necessary steps to support the policies of inclusive growth.

ICT may act as a tool to overcome those challenges and provides us a platform to reach customer directly.

Anita et al. (2011) "Opportunities and Obstacles to Financial Inclusion" The objective of the survey is to provoke dialogue about what financial inclusion is and how to achieve it. It identifies the various pieces needed to complete the puzzle, in the confidence that those working toward financial inclusion can together take actions that will substantially reduce financial exclusion by the year 2020. The study proved that financial education and financial literacy plays unequivocal role towards financial inclusion. As Lindsay Gleason of ACCION writes, "Financial education is one of the best ways to empower the working poor (and, frankly, all of us) to take control over their financial lives, which has a ripple effect to all areas of their lives".

2.2.2. Challenges and prospects of mobile and agent banking in Ethiopia

Most local Banks are under project stage to embark on Mobile and Agent Banking business following the issuance of the NBE Directive number FIS/01/2012 on Mobile and Agent Banking business in Ethiopia. So far only six Banks Commercial bank of Ethiopia, United Bank, Lion international Bank, Wegagen bank, Dashen bank and cooperative bank of Oromia have announced very recently that they have already launched Mobile and Agent Banking service. As the business is very immature to conduct further researches, the researcher was unable to get adequate local research works in the field except a thesis paper by Abdulkadir Wolela (2014) submitted to St.Mary's Univerity under the title "Prospects and Challenges on the Implementation of Mobile and Agent Banking in Ethiopia" and one research article posted on Birritu and written by Henok Arega (2015) under the title "Mobile Banking in Ethiopia: Challenges and Prospects" where the research article is limited to only the mobile banking aspect of the business, and Hayat Nesibu (2017) under the title Mobile Banking adoption in Ethiopia Case of Commercial Bank of Ethiopia.

Henok (2015) "Mobile Banking in Ethiopia: Challenges and Prospect" The researcher used exploratory research design since the development of m-banking in Ethiopia is a new phenomenon. The study found out major challenges such as regulatory challenge where financial institutions are facing challenges on timely approval of new product, the lack of interoperability in the banking system which is very important to support multiple payment mechanisms and the

limit set to mobile money (e-wallet account) is too small for both commercial banks and MFIs; hence it should be left to financial institutions to determine in accordance with their risk appetite. Additionally, the research found out that poor network quality, low financial literacy level and lack of customization of mobile applications in local language were found to be challenges for the provision of Mobile banking service in Ethiopia. From the prospect aspect of the business, Henok found out that m-banking service in Ethiopia is endowed with huge potential as the sector remains untapped and the continual increase in per capital income of the nation can also be considered as another potential for banks to reap the full benefit derived from m-banking.

Hayat (2017) "Mobile Banking adoption in Ethiopia: A Case of Commercial Bank of Ethiopia. The researcher used quantitative research design. The main objective of the study was to examine the determinants of mobile banking adoption in the Ethiopian banking industry with specific emphasis on Commercial Bank of Ethiopia (CBE). The research results found that perceived usefulness, perceived ease of use, perceived self-efficacy, relative advantage and perceived risk as major influencing factors for mobile banking adoption. Whereas the study found perceived credibility and perceived cost to have insignificant effect on mobile banking usage for bank customers located in Ethiopia. The study recommended banks to emphasize in designing user friendly system, to project higher security when providing mobile banking services and let its customers know how the security issue is reveled in order to yield higher customers' acceptance.

2.2.3. Literature gap

In the Ethiopian context, mobile and agent banking is at its infant stage and banks are under implementation stage since the issuance of the NBE directive on Mobile and Agent banking service in 2012. But, till recently only six banks (Dashen bank, United Bank, Lion Bank, and cooperative bank of Oromia, commercial bank of Ethiopia, and Wegagen bank) banks are recently announced the launching of the service. Those banks announced the launching of the service are only 33% of the total which is less than half. However, there is quite literature gap and little local research works have been conducted in the field except the research works by Ayana (2012), Abdulkadir (2014) and Henok (2015), Tamirat (2017) and Hayat (2017) having its own gap in scope as specified below.

In addition to this, since technology is rapidly growing and the numbers of participant banks in the growing technology are increasing the sector needs up-to-date studies identifying challenge

and prospects of the adoption to overcome challenges and harness the opportunity of adoption of mobile and agent banking. However no studies are conducted on the title in the last three years except Hayat, (2017) ‘‘Mobile Banking adoption in Ethiopia: A Case of Commercial Bank of Ethiopia’’ which is focused on mobile banking only as a title and Commercial bank of Ethiopia (government owned only) as a scope which is very limited and Tamirat Assefa (2017) on assessment of factors affecting adoption of agent banking the case of lion international bank s.c. (agent perspective) which is also limited in scope and it is from the agents perspective.

Therefore, this research work is expected to contribute its part in bridging the gap towards the literature on the Mobile and Agent Banking adoption in Ethiopia through identifying the basic challenges and prospects.

CHAPTER THREE: RESEARCH METHODOLOGY

3. Research methodology

3.1. Research design

This study was focused on describing the current situation of the problem and answer the research questions which are in the form of ‘‘what’’, and to highlight the most important factors that can negatively or positively affect the adoption and development of mobile and agent banking in Ethiopia. Descriptive research is being used to achieve the research objectives.

3.2. Research approach

To achieve the objective and address the research questions the researcher used mixed method design that encompasses a combination of both qualitative and quantitative methods. The quantitative data were used to substantiate and support the qualitative data that were collected using different data collection methods and tools. Hence, employing the mix of qualitative and quantitative research methods enabled the researcher to consolidate, triangulate and cross-check the data collected, which in turn allowed formulating a holistic interpretive framework of the study. It is as per the finding of Bryman (as cited saunders et al, 2009) stating that mixed method provides a wealth of data and help the researcher to discover findings that they had not anticipated.

The researcher collected back 40 responses from a total of 48 questionnaires distributed to purposively selected e-banking staffs of six banks; namely Commercial Bank of Ethiopia (CBE), Dashen Bank S.C, United Bank S.C., Wegagen Bank S.C, Lion international bank and Cooperative bank of Oromia; Which represents 83.3% response rate, thus enabling meaningful data analysis.

3.3. Data Collection Sources and Instruments

The study was conducted by collecting data from both primary and secondary sources. The primary data was collected from the selected banks staff of the commercial banks based on a structurally designed closed ended questionnaire. The questionnaires were structured in close-ended type and responses to the questions were measured on a five Likert rating scale where: 5 is for strongly agree, 4 for agree, 3 for neutral, 2 for disagree, and 1 for strongly disagree. In order to get sufficient and reliable data that represents the selected commercial banks the data was be

collected from electronic banking department staffs of each selected bank at the head office level. Secondary data was collected from different documents, records and reports of the industry, regulatory organ reports, from web site, books, annual reports and magazines, articles and journals to supplement ideas and views obtained from the primary source. The appropriateness of the data collection instrument for Likert type and open ended questions was attested by similar research work by Wari (2011) with same subject of study in Kenya.

3.4. Target Population, Sampling techniques and sample size

Among eighteen commercial banks operating in Ethiopia banks only six banks commenced the delivery of the mobile and Agency Banking services are the target population of the study. The researcher considered all of these six banks for this study as a population. The researcher believed that from the fact that those who have close involvement in the adoption have better knowledge than others. Accordingly, from those six banks respondents was selected from e-banking deportment of selected banks applying judgmental or purposive non probability sampling technique. The reason that the researcher used purposive non probability sampling is that, a purposive non-probability sampling technique is most effective when one needs to study a certain cultural domain with knowledgeable experts within (Tongco, 2007). The participants selected for this study were all e-banking staff members of 6 commercial banks which are about 48 in number. Hence, the researcher has distributed questionnaires' to 48 e-banking staff members of 6 commercial banks and 40 useable questionnaires were obtained (83.3% response rate).

3.5. Data analysis and interpretation

The data collected via questionnaires was be analyzed with descriptive statistics using statistical package for social scientists (SPSS). The researcher used percentages, mode, and median descriptive statistics for the interpretation of the data. This is because of Likert scale produced ordinal data and since he permissible descriptive statistics that can perform on ordinal data is median (or average response) and mode (or more frequent responses) (Johns, 2010). In addition to this Anol Bhattacherjee (2012) also states that the central tendency measure of an ordinal scale can be its median or mode, and means are uninterpretable. Finally, Wolcott (as cited in Creswell 2003), suggested that qualitative research is fundamentally interpretative i.e. the researcher makes an interpretation of the data. Thus, the data that collected from reviews of documents was interpreted qualitatively. To sum, the analysis of quantitative data and interpretation of qualitative data combines to seek convergence among the results (Creswell, 2003).

CHAPTER 4

4. Results and Discussion

This chapter presents the results and discussions of the prospects and challenges of adoption of mobile and banking in Ethiopian banking industry. Frequency tables along with Percentages, median and mode are also employed to analyze the responses of the respondents. Descriptive measures of each questions response are presented as follows.

4.1. Respondents demographic profile

It shows the demographic information of the study participants. The study participants on survey questionnaire have different personal information; besides these differences they introduce different responses towards adoption of mobile and agent banking, and the challenge and prospects of its adoption. The demographic profile of respondents, participated in this study was shown this section.

Table 4: 1 Demographic profile of respondents

		Frequency	Percent	Valid Percent
Gender	Male	26	65.0	65.0
	Female	14	35.0	35.0
Age	20-30	29	72.5	72.5
	31-40	6	15.0	15.0
	41-50	5	12.5	12.5
Education level	Diploma	2	5.0	5.0
	First Degree	31	77.5	77.5
	Second Degree	7	17.5	17.5
Income Level (Monthly in ETB)	2000-4000	2	5.0	5.0
	4001-6000	4	10.0	10.0
	6001-8000	19	47.5	47.5
	8001-10000	9	22.5	22.5
	Above 10000	6	15.0	15.0

Source: Researcher's own Survey, 2018

The SPSS result presented above indicates the demographic information of respondents. As shown in table 4.1 above 65%t of the study participants were male and 35% percent were female. This shows that most of the study participants are male. Regarding age of respondents, 72.5% of the respondents fall into the 20 to 30 age group, 15% of them in the 31 to 40 age group and, 12.5 percent in the 41-50. This indicates that most of the study participants are young controlling more than half percent of the total participants.

It is also shown that 77.5% of respondents have first degree, 17.5% second degree and only 5% of the study participants are diploma holders. This indicates that majority of the respondents are first degree holders. Lastly, it is shown in the above table that 47.5% of respondents earns monthly income of 6,001-8000, 22.5% earns 8,000-10,000, 15% of respondents earns above 10,000, 10% of respondents earns 4,001-6000, and only 5% of respondents earns 2,000-4000. This shows majority of the respondents are earning a monthly income of 6,001-8000.

4.2. Challenges of adopting mobile and agent banking

In case of Ethiopian banking industries, many private banks still using old banking systems. In this section challenging factors (Environmental, organizational, and technological) regarding mobile and agent banking adoption were analyzed. The summary of the results for all the variables under the research study and the result with respect to each statement is indicated below. Accordingly, the researcher tried to interpret the mode and the median of the data points.

4.2.1. Environmental Factors

Table 4: 2 Lack of adequate ICT infrastructures

Lack of adequate ICT infrastructures				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	3	7.5	7.5
	Neutral	4	10.0	10.0
	Agree	15	37.5	37.5
	Strongly Agree	17	42.5	42.5
	Total	40	100.0	100.0
Median				4.00
Mode				5.00

Source: Researcher's own Survey, 2018

Regarding the of lack of adequate ICT infrastructure 42.5% and 37.5% of respondents strongly agreed and agreed respectively that lack of availability of ICT infrastructure is a challenge adoption of mobile and agent banking. Only 2.5% and 7.5% of respondents are strongly disagreed and disagreed respectively on that lack of availability of ICT infrastructure has impact on adoption of mobile and agent banking. This result implies that lack of adequate ICT infrastructure is one of the challenging factors for adoption of mobile and agent banking. Possible reasons for this are that Ethiopia is a country having one of the lowest ICT penetration rate in the region even if Ethiopia's national ICT policy has set the stage for growth (Hare, 2007).

Table 4: 3 Qualities of internet connection and mobile network

The quality of internet connection and mobile network				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	3	7.5	7.5
	Neutral	5	12.5	12.5
	Agree	17	42.5	42.5
	Strongly Agree	14	35.0	35.0
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

As depicted in the table above out of the purposively selected e-banking staffs of six banks , 42.5% have agreed and 35% strongly agreed that the quality of internet connection and mobile network is challenges for adoption of mobile and agent banking whereas the rest 2.5% , 7.5%, and 12.5% have strongly Disagreed , disagreed, and neutral respectively on this statement. It implies that poor internet connection can be considered as a challenging factor for adoption of mobile and agent banking in Ethiopia banking industry. This implies that since, 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 (Taddesse & Kidan, 2005). 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. "Poor communication infrastructure is one of the reasons that hinder the e-payment system in Africa" (Taddesse & Kidan, 2005). According to Worku (2010), low level of internet penetration and poorly developed telecommunication infrastructure impede smooth development and improvements in e-commerce in Ethiopia.

Table 4: 4 Levels development of ICT infrastructure

Levels of development of ICT infrastructure				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	2	5.0	5.0
	Disagree	4	10.0	10.0
	Neutral	5	12.5	12.5
	Agree	16	40.0	40.0
	Strongly Agree	13	32.5	32.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

Table 4.3 above shows that 40% and 32.5% of respondents are agreed and strongly agreed respectively that, the levels of development of ICT infrastructure significantly affects mobile and agent banking adoption. The remaining 12.5%, 10%, and 5% of respondents are neutral, disagreed, and strongly disagreed respectively on the statement. This shows that, Infrastructure is necessary for the successful implementation of electronic payments. Proper Infrastructure for electronic payments is a challenge (Taddesse & Kidan, 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. As a promising nation trying hard for extrication from the quagmire of poverty, we feel it how the development of infrastructure is affecting our daily life. The government should take the leading role to mobilize its resources to bring about radical change in the development of ICT and road infrastructures. Otherwise, the provision of Mobile and Agent Banking would be journey to nowhere unless infrastructural development becomes the upfront agenda of the Government as the business is highly leveraged by ICT and road infrastructure.

Table 4: 5 Lack of regulatory guidelines on mobile and agent banking

Lack of regulatory guidelines on mobile and agent banking				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	2	5.0	5.0
	Disagree	6	15.0	15.0
	Neutral	11	27.5	27.5
	Agree	13	32.5	32.5
	Strongly Agree	8	20.0	20.0
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

As indicated in the table 4.5 above 32.5% and 20% of respondents are agreed and strongly agreed respectively that lack of regulatory framework on mobile and agent banking is a challenge influencing adoption of mobile and agent banking. Whereas the remaining 27.5%, 15%, and 5% of respondents are neutral, disagreed, and strongly disagreed respectively on the statement. This implies that at this introductory stage of the business, the existing regulatory guidelines should positively supports the Mobile and Agent banking business in Ethiopia and the guidelines needs to be amended in the areas of agent networking, agent due diligence and user daily transaction limit when the business starts to grow in the future. This implies that National regulatory and legal framework that aligns with regional and international agreements is crucial in creating certain and reliable environment for mobile and agent banking adoption.

Table 4: 6 lacks of legal frame works that enforce banks to adopt the system

Lack of legal frame works that enforce banks to adopt mobile and agent banking				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	2	5.0	5.0
	Disagree	5	12.5	12.5
	Neutral	11	27.5	27.5
	Agree	15	37.5	37.5
	Strongly Agree	7	17.5	17.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

As depicted in the table 4.6 above 37.5% and 17.5% of purposively selected e-banking staffs of six banks are agreed and strongly agreed respectively that lack of legal frame works that enforce banks to adopt mobile and agent banking is an environmental challenge for mobile and agent banking adoption; whereas 27.5%, 12.5% and 5% of respondents are neutral, disagreed, and strongly disagreed respectively on this statement. This implies that National, regional or international set of laws, rules and other regulations are important requirements for the successful implementation of e-payment schemes. Some of the major elements include rules on money laundering, supervision of commercial banks and e-money institutions by supervisory authorities, payment system oversight by central banks, consumer and data protection, cooperation and competition issues (Taddesse & Kidan, 2005). A legal and regulatory framework that builds trust and confidence supporting technical efforts is an important issue to be addressed in implementing e-payments. As indicated by Worku (2010), lack of suitable legal and regulatory framework for e-payment in Ethiopia, an African country is a challenge for adoption. According to Worku (2010) Ethiopian current laws do not accommodate electronic contracts and signatures. Ethiopia has not yet enacted legislation that deals e-payments and e-commerce concerns including enforceability of the validity of electronic contracts, digital signatures and intellectual copyright and restrict the use of encryption technologies.

Table 4: 7 Lack of strong push from the Government to promote mobile and agent banking

Lack of strong push from the Government to promote mobile and agent banking				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	2	5.0	5.0
	Disagree	3	7.5	7.5
	Neutral	7	17.5	17.5
	Agree	17	42.5	42.5
	Strongly Agree	11	27.5	27.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

As depicted in the table 4.7 above 42.5% and 27.55% of purposively selected e-banking staffs of six banks are agreed and strongly agreed respectively that lack of strong push from the government to promote mobile and agent banking is an environmental challenge for mobile and agent banking adoption; whereas 17.5%, 7.5%, and 5% of respondents are neutral, disagreed, and strongly disagreed respectively on the statement.

Table 4: 8 Level of development in providing infrastructural facilities to remote area

Level of development in providing infrastructural facilities to remote area.				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	2	5.0	5.0
	Disagree	2	5.0	5.0
	Neutral	6	15.0	15.0
	Agree	14	35.0	35.0
	Strongly Agree	16	40.0	40.0
	Total	40	100.0	100.0
Median				4.00
Mode				5.00

Source: Researcher's own Survey, 2018

As shown in the table 4.8 above 40% and 35% of purposively selected e-banking staffs of six banks are strongly agreed and agreed respectively that the level of development in providing infrastructural facilities to remote area of the country is an environmental challenge for mobile and agent banking adoption; whereas 15%, 5%, and 5% of respondents are neutral, disagreed, and strongly disagreed respectively on the statement.

Table 4: 9 Lack of strong competition between local banks on innovation

Lack of strong competition between local banks on innovation				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	5	12.5	12.5
	Disagree	8	20.0	20.0
	Neutral	6	15.0	15.0
	Agree	15	37.5	37.5
	Strongly Agree	6	15.0	15.0
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

As the result obtained from the open ended questions response of respondents indicated in the above table 37.5% and 15% of respondents are agreed and strongly agreed respectively that lack of strong competition between local banks on innovation is another environmental challenge influencing mobile and agent banking adoption; whereas 20%, 15%, and 12.5% of respondents are disagreed, neutral, and strongly disagreed respectively on the environmental factor of lack of strong competition between local banks on mobile and agent banking adoption. As it is stated in different E-banking literature, competitive pressure is considered as driver for the adoption of E-banking in developed country. For example, the study of Laforet & Lu (2005) and Salwani (2009) suggests that, the foreign funded banks are more competitive in securing corporate clients over the Chinese banks because they are perceived to offer better services and more stringent security measures given their longer experience in E-banking development. However, lack of competition in Ethiopia among local and foreign bank hinders Ethiopian banking industries to adopt E-banking system.

Table 4: 10 Lack of competition from foreign banks

Lack of competition from foreign banks				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	4	10.0	10.0
	Disagree	5	12.5	12.5
	Neutral	9	22.5	22.5
	Agree	12	30.0	30.0
	Strongly Agree	10	25.0	25.0
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

Table 4.10 depicted the degree to which respondents agree to the statement saying "Lack of competition from foreign banks is an environmental challenge influencing mobile and agent banking adoption". Out of the total of respondents provided answer to the above statement 30% and 25% of the respondents were agreed and strongly agreed respectively. On the other hand 22.5%, 12.5%, and 10% of respondents are neutral, disagreed, and strongly disagreed on the statement. As it is stated in different E-banking literature, competitive pressure is considered as driver for the adoption of E-banking in developed country. For example, the study of Laforet & Lu (2005) and Salwani (2009) suggests that, the foreign funded banks are more competitive in securing corporate clients over the Chinese banks because they are perceived to offer better services and more stringent security measures given their longer experience in E-banking development. However, lack of competition in Ethiopia among local and foreign bank hinders Ethiopian banking industries to adopt E-banking system.

Table 4: 11 Inconsistent power & network supply specifically in rural areas

Inconsistent power & network supply specifically in rural areas				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	3	7.5	7.5
	Neutral	6	15.0	15.0
	Agree	12	30.0	30.0
	Strongly Agree	18	45.0	45.0
	Total	40	100.0	100.0
Median				4.00
Mode				5.00

Source: Researcher's own Survey, 2018

Table 4.11 shows the frequency distribution showing respondents level of agreement to the statement saying "Inconsistent power & network supply specifically in rural areas affects mobile & agent banking adoption**".** Out of the total respondents 45% and 30% of respondents are strongly agreed and agreed respectively; whereas the remaining 15%, 7.5%, and 2.5% of the respondents are neutral, disagreed, and strongly disagreed on the statement.

Table 4: 12 Daily limit of withdrawal from and deposit to Agent bank

Daily withdrawal limit from Agent Bank and limits of deposit with Agent bank				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	4	10.0	10.0
	Neutral	6	15.0	15.0
	Agree	16	40.0	40.0
	Strongly Agree	13	32.5	32.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

As shown in the table 4.12 above respondents was asked their degree of agreement on the statement saying "Daily withdrawal limit from Agent Bank and limits of deposit with Agent bank has an effect on success of Agent Banking services"**.** Out of the total respondents 40% and 32.5% of respondents were agreed and strongly disagreed respectively on the statement. The remaining 15%, 10%, and 2.5% of respondents were neutral, disagreed, and strongly disagreed on the statement. The directive lacks to consider business related transactions since the existing daily transaction and deposit limits are ETB 6,000.00 and ETB 25,000.00 respectively which is inadequate limit for business transactions. It is more appropriate for transactions and deposits to be made for non-business transactions at individual level. There are also stringent due diligence procedures which need to be less regulated. For instance, Agents are required to submit audited financial statements of their business and needs to have registered business.

Table 4: 13 Limits in geographic boundary and transaction currency

Limits in geographic boundary and transaction currency				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	4	10.0	10.0
	Disagree	6	15.0	15.0
	Neutral	10	25.0	25.0
	Agree	14	35.0	35.0
	Strongly Agree	6	15.0	15.0
	Total	40	100.0	100.0
Median				3.50
Mode				4.00

Source: Researcher's own Survey, 2018

The result presented in the above table shows that, the respondent's response on the degree of agreement on the statement saying "Limits in geographic boundary and currency has an effect on mobile and agent banking adoption". Out of the total respondents 35% and 15% are agreed and strongly agreed respectively on the statement; whereas the remaining 25%, 15%, and 10% of them are neutral, disagreed and strongly disagreed respectively on the statement.

Table 4: 14 Summary of environmental factors

As shown in the tables 4.2 to table 4.13 respondents degree of agreement on environmental factors of mobile and agent banking adoption is varied. The following table summarizes the respondent's degree of agreement on each environmental factor as a challenge for mobile and agent banking using descriptive statistics result of mode and median.

Environmental factor	Mode	Median
Lack of adequate ICT infrastructure	5	4
The quality of internet connection and mobile network	4	4
The levels development of ICT infrastructure	4	4
Lack of regulatory guidelines on mobile and agent banking	4	4
Lack of legal frame works that enforce banks to adopt mobile and agent banking	4	4
Lack of strong push from the Government to promote mobile and agent banking	4	4
The level of development in providing infrastructural facilities to remote area of the country	5	4
Lack of competition from foreign banks	4	4
Inconsistent power & network supply specifically in rural areas	5	4
Daily withdrawal limit from Agent Bank and limits of deposit with	4	4
Limits in geographic boundary and currency	4	3.5

Source: Researcher's own Survey, 2018

The result presented in the above table shows that, the respondent's degree of agreement regarding the above listed environmental factors being a challenge for adoption of mobile and agent banking. Accordingly Lack of adequate ICT infrastructure, level of development in providing infrastructural facilities to remote area of the country, and inconsistent power & network supply specifically in rural areas are the major environmental factors of adopting mobile and agent banking in selected banks with mode of 5. The descriptive statistics result mode of 5

means the largest number of respondent were strongly agreed on the issue that Lack of adequate ICT infrastructure, level of development in providing infrastructural facilities to remote area of the country, and inconsistent power & network supply specifically in rural areas are the major environmental factors of adopting mobile and agent banking in selected banks. This result is consistent with Alemayehu & Jacqueline (2011), stating that lack of adequate financial and telecommunications infrastructure for the new technologies is a challenge for e-banking adoption. Not different from this, the study of Wondwossen and Tsegai (2005) stated that lack of sufficient telecommunication infrastructure is one of the basic challenges in the development of E-payment in Ethiopia. A possible reason for this finding is that Ethiopia is a country having one of the lowest ICT penetration rate in the region even if Ethiopia's national ICT policy has set the stage for growth (Hare, 2007).

As it is shown in the table 4.14 above daily limit of withdrawal from and deposit to agent (liquidity), lack of regulatory guidelines, Lack of legal frame works that enforce banks to adopt mobile and agent banking, lack of strong push from the government, lack of competition from foreign banks in innovation are the other environmental factors of adopting mobile and agent banking. According to Directive No FIS/01/2012 a persons' balance in his/her mobile account shall not exceed Birr 25,000 and daily mobile banking transaction shall not exceed Birr 6,000. As mobile money is a new phenomenon in the banking sector development, and hence fear of unknown, and the service heavily rely on ICT, which is vulnerable to hacking, such limit by NBE is considered to minimize the risk associated with money laundering and financing terrorism. Even though such limits apply only to agent banking or mobile money (e-wallet account), the finding of the study reveals that the limit is too little for both commercial banks. Hence, it is the researcher argument that such limit should be left to financial institutions in accordance with their risk appetite, like the case of ordinary mobile and agent banking service. This result was consistent with Fred Gichana (2013) stating that liquidity (float) related problems affect agency banking adoption**.** The result of this study were also consistent with the study of Sherah Kurnia, Fei Peng, and Yi Ruo Liu (2010), the government support is also a strong driver for e-banking adoption in China. It is also consistent with the study of Gardachew (2010) revealed that lack of legal frame work is one of the challenges for E-banking system in Ethiopia. Since the Ethiopian government doesn't allow foreign banks operation in the country lack of competition between Ethiopian banking sector and foreign bank is considered as another barrier for the adoption of mobile and agent banking system. This finding is consistent with Laforet & Lu (2005) and Salwani (2009) stating that, the foreign

funded banks are more competitive in securing corporate clients over the Chinese banks because they are perceived to offer better services and more stringent security measures given their longer experience in E-banking development and the opposite affects its adoption.

The quality of internet connection and mobile network is another environmental challenge for mobile and agent banking adoption with mode score of 4. It is to mean that most of respondents have agreed that quality of internet connection and mobile network is a challenging factor to adopt mobile and agent banking. This finding is supported by Gichana (2013) stating that unavailability and redundant failure of network is a major challenge to agency banking implementation.

4.2.2. Organizational Factors

According to Ayana (2012) Organizational factors mainly relates with availability of financial and skilled human resources in implementing a system. This two and other organizational factors are analysed below.

Table 4: 15 Cost of implementing technological innovation

Implementing technological innovation requires high investment cost.				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	4	10.0	10.0
	Neutral	5	12.5	12.5
	Agree	17	42.5	42.5
	Strongly Agree	13	32.5	32.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

The results presented in table 4.13 shows the respondents degree of agreement on the statement stating "Implementing technological innovation requires high investment cost". Accordingly, of the total study participants from six commercial banks 42.5% and 32.5% had agreed and strongly agreed respectively on the statement. On the contrary, 10%, 2.5% & 12.5% of the respondents are disagreed, strongly disagreed & neutral respectively on the statement.

Table 4: 16 Availability of well trained manpower to build agent network

Lack of availability of well trained manpower to build agent network				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	2	5.0	5.0
	Disagree	3	7.5	7.5
	Neutral	6	15.0	15.0
	Agree	13	32.5	32.5
	Strongly Agree	16	40.0	40.0
	Total	40	100.0	100.0
Median				4.00
Mode				5.00

Source: Researcher's own Survey, 2018

The results presented in table 4.14 shows the respondents degree of agreement on the statement stating "Availability of well trained manpower to build agent network affects adoption of mobile and agent banking". Accordingly, of the total study participants purposively selected from six commercial banks 40% and 32.5% had agreed and strongly agreed respectively on the statement. On the contrary, 7.5% and 5% of the respondents are disagreed and strongly disagreed respectively on the statement. Lastly, 15% of respondents remain neutral on the statement.

Table 4: 17 Size of the bank

Size of the bank				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	2	5.0	5.0
	Disagree	6	15.0	15.0
	Neutral	6	15.0	15.0
	Agree	17	42.5	42.5
	Strongly Agree	9	22.5	22.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

According to the SPSS result shown in the above table out of the total respondents 42.5% and 22.5% were agreed and strongly agreed respectively on the statement stating "the size of bank influences adoption of mobile and agent banking". In contrary to this 15% and 5% of respondents are disagreed and strongly disagreed on the statement. Finally, 15% of respondents remain neutral on this statement.

Table 4: 18 Lack of skilled IT personnel on technological innovation

Lack of skilled IT personnel on technological innovation				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	2	5.0	5.0
	Disagree	5	12.5	12.5
	Neutral	4	10.0	10.0
	Agree	16	40.0	40.0
	Strongly Agree	13	32.5	32.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

The result presented in the table above shows that 40% and 32.5% of respondents were agreed and strongly agreed respectively that lack of skilled IT personnel on technological innovation influences adoption of mobile and agent banking. Only 5% of respondents are strongly disagreed and 12.5% disagreed on the statement. The rest 10% of respondents remain neutral on the issue.

Table 4: 19 Technical and managerial skills of staffs

Lack of technical and managerial skills of staffs on Using technological innovation				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	4	10.0	10.0
	Neutral	7	17.5	17.5
	Agree	15	37.5	37.5
	Strongly Agree	13	32.5	32.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

In the table 4:19 above respondents were asked to express their degree of agreement on the statement stating "Lack of technical and managerial skills of staffs on Using technological innovation influences adoption of mobile and agent banking". Out of 40 respondents 15 or 37.5% and 13 or 32.5% are agreed and strongly agreed respectively. On the contrary 1 or 2.5% and 4 or 10% of respondents are strongly disagreed and disagreed respectively on the statement. The remaining 7 (17.5%) of respondents remain neutral on the issue.

Table 4: 20 Education level and skill of agents

Educational level & skill of Agents				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	4	10.0	10.0
	Neutral	10	25.0	25.0
	Agree	16	40.0	40.0
	Strongly Agree	9	22.5	22.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

The result presented in the above table shows that 40% and 22.5% of respondents were agreed and strongly agreed respectively on the statement saying "Educational level and skill of Agents affects adoption of mobile and agent banking". On the other hand 2.5% and 10% of respondents were strongly disagreed and disagreed respectively on the statement. The rest 25% of respondents were remained neutral on the issue.

Table 4: 21 Managing credit risk, operational risk, Liquidity risk and reputational risk

Managing credit risk, operational risk, Liquidity risk and reputational risk				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	2	5.0	5.0
	Neutral	14	35.0	35.0
	Agree	16	40.0	40.0
	Strongly Agree	7	17.5	17.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

According to table 4:21 above respondents were asked to reveal their degree of agreement on the statement saying "Managing credit risk, operational risk, Liquidity risk and reputational risk influence adoption of mobile and agent banking". Accordingly, 40% and 17.5% of respondents were agreed, and strongly agreed respectively on the statement. Only 2.5% and 5% of respondents are strongly disagreed and disagreed on the statement. The rest 35% of respondents remain neutral on the statement.

Table 4: 22 Commitments of top level management to adopt new technology

Commitments of top level management to adopt new technology				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	4	10.0	10.0
	Neutral	5	12.5	12.5
	Agree	18	45.0	45.0
	Strongly Agree	12	30.0	30.0
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

Descriptive statistics result shown in the table above presents the degree agreement of respondents on the statement stating "Commitments of top level management to adopt new technology influences adoption of mobile and agent banking". Accordingly, 45% and 30% of respondents were agreed and strongly agreed respectively on the statement. On the contrary, 2.5% and 10% of respondents were strongly disagreed and disagreed on the statement. The rest12.5% of respondents remains neutral on the statement.

Table 4: 23 Proximity and accessibility by the retail agent's to a bank branch

Proximity and accessibility to a bank branch by the retail agent's				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	3	7.5	7.5
	Neutral	7	17.5	17.5
	Agree	19	47.5	47.5
	Strongly Agree	10	25.0	25.0
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

In table 4:23 above respondents were asked their degree of agreement on the statement stating that "Proximity and accessibility by the retail agent's to a bank branch affects adoption of mobile and agent banking". Consequently 47.5% and 25% of respondents were agreed and strongly agreed respectively on the statement. In opposite to this, 2.5% and 7.5% of respondents are strongly disagreed and disagreed respectively on the above statement. The remaining 17.5% of respondents responds neutral on the statement. Therefore, retail agents' proximity and accessibility to a bank branch can be considered as one success factor for Mobile and Agent Banking business. Some respondents from financial institution and NBE shared the above idea by referring to the existing road infrastructural problem which impedes agents' accessibility to financial institution. Agent banking requires a generally good infrastructure in terms of road network, communication and information technology. Considerations should be made for areas that are hard to reach due to a poor fixed infrastructure and poor transport system.

Table 4: 24 Summary of organizational

Organizational Factors	Mode	Median
Investment cost of implementing technological innovation	4	4
Availability of well trained manpower to build agent network	5	4
The size of bank	4	4
Lack of skilled IT personnel on technological innovation	4	4
Lack of technical and managerial skills of staffs on Using technological innovation	4	4
Educational level and skill of Agents	4	4
Managing credit risk, operational risk, Liquidity risk and reputational risk	4	4
Commitments of top level management to adopt new technology	4	4
Proximity and accessibility by the retail agent's to a bank branch	4	4

Source: Researcher's own Survey, 2018

As shown in the table above lack of well trained manpower to build agent network is the major organizational factor to adopt mobile & agent banking with mode (frequent response) of 5. In addition to this lack of skilled it personnel on technological innovation, lack of technical and

managerial skills of staffs on Using technological innovation, commitments of top level management to adopt new technology are the other organizational factors of adopting mobile and agent banking with mode score of 4. It is to mean that most of respondents of the study were agreed (mode score 4) and strongly agreed (mode score 5) that the above listed human resource related variables are challenging factors of mobile and agent banking adoption. The finding result of this study indicates that human resource factors are considered as organizational barriers to adopt mobile and agent banking in selected commercial banks. It is also supported by Ayana (2012) stating that lack of social awareness/lack of familiarity with different technology and lack of sufficient skills to use and implement electronic banking system, are barriers to adopt mobile and agent banking system in Ethiopia. This findings implies that, lack of well trained man power to build agent network, lack of skilled it personnel on technological innovation, lack of technical and managerial skills of staffs on Using technological innovation and commitments of top level management to adopt new technology can be considered as the major challenges that inhibit mobile and agent banking adoption

Proximity and accessibility of the bank by retail agent is another organizational challenge to adopt mobile and agent banking with mode score of 4. It is to mean that majority of respondents are agreed that proximity of the bank branch to the agent is a challenge for adopting mobile and agent banking. This finding is supported by Gichana (2013) stating that following up liquidity factor proximity of the bank to the agent to top up their float is another challenging factor for agency banking.

Bank size and cost of implementing technology innovation are other organizational challenges of adopting mobile and agent banking supported by the finding of the study is supported by Kuan (2001 & Iacovou (1995) stating that financial resources are an important factor in facilitating innovation adoption for any organization and they are often correlated with the firm size.

4.2.3. Technological factors

Table 4: 25 Lack of confidence with the security aspects

Lack of confidence with the security aspects				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	2	5.0	5.0
	Disagree	2	5.0	5.0
	Neutral	6	15.0	15.0
	Agree	19	47.5	47.5
	Strongly Agree	11	27.5	27.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

In table 4:25 above respondents were asked to select their degree of agreement to the statement saying "Lack of confidence with the security aspects is a technological factor influencing adoption of mobile and agent banking". Out of the total of purposively selected e-banking staffs of six banks 47.5% and 25.5% have agreed and strongly agreed respectively on the statement. On the other side, 5% of respondents have strongly disagreed and 5% disagreed. The rest 25% of respondents remain neutral on the statement. This implies that an unsecured e-payment system did not get trust from its users. Trust is very critical to ensure acceptance from users. According to (Worku, 2010) , e-payment and e-banking applications represent a security challenge as they highly depend on critical ICT systems that create vulnerabilities in financial institutions, businesses and potentially harm customers. "It is imperative for banks to understand and address security concerns in order to leverage the potential of ICTs in delivering e-banking applications (Worku, 2010).

Table 4: 26 Lack of availability of physical security

Lack of availability of physical security				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	3	7.5	7.5
	Disagree	4	10.0	10.0
	Neutral	11	27.5	27.5
	Agree	16	40.0	40.0
	Strongly Agree	6	15.0	15.0
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

As indicated in table 4:26 above 40% and 15% of purposively selected e-banking staffs of six banks have agreed and strongly agreed respectively that lack of availability of physical security is a technological factor adoption of mobile and agent banking; whereas 10% and 7.5% of respondents are disagreed and strongly disagreed respectively on the statement. The rest 27.5% of respondents remains neutral on the above statement. Therefore, there was general consensus by the respondents that the physical security threat (e.g. robbery, theft and fraud) have an impact on the provision of Mobile and Agent Banking service in Ethiopia. Physical security can pose a challenge with regard to security of cash and even the people managing and working with agents with specific security challenges such as robbery, theft and fraud, even if Ethiopia remains a safe haven for investment due to the low crime rate as compared to other African countries.

Table 4: 27 Customers fear of risk of new technology innovation

Customers fear of risk of new technology innovation affects mobile and agent banking adoption				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	2	5.0	5.0
	Disagree	3	7.5	7.5
	Neutral	10	25.0	25.0
	Agree	14	35.0	35.0
	Strongly Agree	11	27.5	27.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

As depicted in the table 4:27 above 35% and 27.5% of respondents have agreed and strongly agreed respectively that customer's fear of risk of new technology innovation affects mobile and agent banking adoption. In opposite to this, 5% and 7.5% of respondents answered strongly disagree and disagree respectively. The rest 25% of respondents responded neutral on the issue.

Table 4: 28 summary of technological factors of adopting mobile and agent banking

Technological Factor	Mode	Median
Lack of confidence with the security aspect	4	4
Lack of availability of physical security	4	4
Customers fear of risk of new technology innovation	4	4

Source: Researcher's own Survey, 2018

National bank of Ethiopia under Directives number FIS /01/2012 of regulation of mobile and agent banking services states that there is a need to set the minimum standards for risk

management and customer protection on the delivery of mobile and agent banking services. It also states that the technology used for delivery of mobile and agent banking services must be secure and should at least ensure, user risk, infrastructure and software application risk, communication media risks, and gent and third party service provider risks which shall be part of the technology risk management program of a financial institution.

Response summary captured in the above table shows that lack of confidence with the security aspect lack of availability of physical security, and customer's fear of risk of new technology innovation are the major technological factors with mode and median of 4. It is to mean that majority of purposively selected e-banking staffs of six banks agree that lack of confidence with the security aspect lack of availability of physical security, and customer's fear of risk of new technology innovation are the major technological factors of adopting mobile and agent banking.

This finding is supported by the study Sohail and Shanmugham (as sited in Ayana 2012) suggesting that one of the barriers in the adoption of electronic banking is fear of security risks. It is also consistent with the findings of Ghazi and Khalid (2012); Khalfan *et al* (2006) in which all indicted that, technological factors, such as security risk as hindrance factor for the adoption of Electronic banking. Ayana (2012) also supports this finding stating that the technological barriers of adopting electronic banking were security risk and lack of trust on the technological innovation used by banking industries.

As it is shown from the above table lack of availability of physical security with the agent's location and lack of confidence with the security aspect was considered as another technological factor for agent banking adoption with mode score of 4 (agree). These results were consistent with the findings of Ayana (2012) in which lack of confidence with the security aspect is considered as challenge for the adoption E-banking.

4.3. Prospects of mobile and agent banking

Under the view of Robinson (2000), relevant costs for conducting a banking transaction via online are much lower than via a brick and mortar branch. Another advantage that is expected to be gained from the adoption of mobile and agent banking covers both direct and indirect benefits for the banking industries. Direct benefits include savings on operational cost, improved organizational functionality, productivity gain, improved efficiency, saving of time and increased profitability. Indirect benefits include the opportunity or intangible benefits such as improved

customer's satisfaction through improved services, improved banking experience and fulfillment of their changing needs and lifestyle (Lu, 2005, Kuan, 2001 & Iacouou, 1995).

Perceived benefit of adopting E-banking system considered in this study were classified based on technology acceptance model (TAM), as perceived ease of use (PEU) and perceived usefulness (PU).

4.3.1. Perceived ease of use

Perceived ease of use represents the degree to which an innovation is perceived as easy to understand, learn or operate. AC Nielsen Consult (2002) noted that the drivers of growth in electronic banking are determined by the perceived ease of use, thereby making perceived ease of use a major factor affecting the acceptance of any information system.

Table 4: 29 Easy to understand and use

Mobile and agent banking is easy to understand and use				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	3	7.5	7.5
	Disagree	8	20.0	20.0
	Neutral	7	17.5	17.5
	Agree	15	37.5	37.5
	Strongly Agree	7	17.5	17.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

In the table 4:29 above respondents were asked whether they strongly agree, agree, neutral, disagree or strongly disagree on the statement saying "Mobile and agent banking is easy to understand and use". Accordingly, 37.5% and 17.5% of purposively selected e-banking staffs of six banks have agreed and strongly agreed respectively on the statement. On the contrary, 20% and 7.5% of respondents were disagreed and strongly disagreed respectively on the statement. The rest 17.5% of respondents were remains neutral on the issue. One of the basic benefits related with the use of E-banking system is the perceived ease of use. Giglio (2002) suggests that adopting online banking services reduce the workload over the banking staff and it"s easy to

have more satisfied customers. On the other hand Robinson (2000) indicated that online banking provides convenience not only to bank and also to customers.

Table 4: 30 Compatibleness of mobile and agent banking service with the existing service

Compatibleness/friendliness of mobile and agent banking service with the existing service				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	4	10.0	10.0
	Neutral	12	30.0	30.0
	Agree	14	35.0	35.0
	Strongly Agree	9	22.5	22.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

The result captured from the above table shows that 35% and 22.5% of respondents were agreed and strongly agreed respectively that Mobile and agent banking services are compatible with the existing service offerings of the bank. On the other hand, 10% and 2.5% of respondents were disagreed and strongly disagreed on the statement. The rest 30% of respondents were remained neutral on the above statement.

Table 4: 31 simplicity of Mobile & agent banking service to perform banking tasks

Simple to perform banking tasks in simple way				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	2	5.0	5.0
	Neutral	4	10.0	10.0
	Agree	15	37.5	37.5
	Strongly Agree	18	45.0	45.0
	Total	40	100.0	100.0
Median				4.00
Mode				5.00

Source: Researcher's own Survey, 2018

As shown in the table above, out of the total purposively selected e-banking staffs of six banks 37.5% and 45% were agreed and strongly agreed respectively that Mobile & agent banking service helps to perform banking tasks in simple way. On the other hand 5% and 2.5% of respondents were disagreed and strongly disagreed on the statement. The rest 10% of respondents remain neutral on the statement.

Table 4: 32 Summary of perceived ease of use as a prospect for mobile and agent banking adoption

Variable	Mode	Mean
Easiness to understand and use	4	4
Mobile and agent banking services are compatible with the existing service offerings of the bank	4	4
Mobile & agent banking service helps to perform banking tasks in simple way	5	4

Source: Researcher's own Survey, 2018

As shown in the table above simplicity to perform banking tasks, easiness to understand and use, and friendliness of mobile and agent banking with the existing system were the major prospect of mobile and agent banking adoption with mode score of 4 &5. It is to mean that majority of respondents were agreed and strongly agreed that mobile simplicity to perform banking tasks, easiness to understand and use, and friendliness of mobile and agent banking with the existing system are the major prospects of adopting mobile and agent banking. This finding is supported by the finding of Khalid et al (2006) which shows that there is a clear agreement about the importance of making the E-banking service because of it is easy to deliver service to customers, also the finding of this study is in line with the result found by Hoppe et al. (2001) which suggest that the more complex a new technology is perceived to be, the less likely it will be adopted and the more ease of use the more likely to be adopted.

4.3.2. Perceived usefulness

It is the extent to which a user believes that a particular system would improve their performance (Hosein, 2010). Perceived usefulness has long been found to have a significant influence on

attitude and intention to use or adopt an innovation (Yuttapong et al., 2009; Sheikhshoaei and Oloumi, 2011; Zhou, 2011). Hoppe et al. (2001) indicated that perceived relative advantage has a positive influence on the adoption of Internet Banking and it is compatible with their values to be adopted by users.

Table 4: 33 collecting small customers and introducing to potential customers

Used to collect small no. of customers and to introduce the name and service of the bank to potential customers.				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	2	5.0	5.0
	Disagree	3	7.5	7.5
	Neutral	7	17.5	17.5
	Agree	16	40.0	40.0
	Strongly Agree	12	30.0	30.0
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

As shown in table above of purposively selected e-banking staffs of six banks 40% and 30% were agreed and strongly disagreed respectively that mobile and agent banking used to collect small number of customers and to introduce the name and service of the bank to potential customers. Only 5% and 7.5% of respondents were strongly disagreed and disagreed respectively on the statement. The rest 17.5% of respondents responds neutral on the statement.

Table 4: 34 Service enhancement

Enhance the banks service				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	2	5.0	5.0
	Disagree	3	7.5	7.5
	Neutral	4	10.0	10.0
	Agree	18	45.0	45.0
	Strongly Agree	13	32.5	32.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

In the table 4:34 above respondents were asked the degree of agreement on the statement saying "mobile and agent banking enhances access to the bank service by both existing and new customers". Accordingly, 45% and 32.5% of respondents were agreed and strongly agreed respectively. On the other hand, 5% and 7.5% of respondents were strongly disagreed and agreed respectively on the above statement. 10% of respondents answered neutral on the issue. This implies that the benefit of E-banking system identified are ,improving of customer satisfaction, through enhancing speed and efficiency, reduce number of customers come to banking hall, while it reduces the work load of bank staff, increase the productivity of banks, by creating foreign currency, increase reliability and accessibility of banking service ,create better relationship among banks and clients, used as better information control and unlimited time to access bank account and information.

Table 4: 35 unlimited access of time and place

Accessible without time and place limit				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	3	7.5	7.5
	Disagree	4	10.0	10.0
	Neutral	5	12.5	12.5
	Agree	15	37.5	37.5
	Strongly Agree	13	32.5	32.5
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

The result presented from the above table shows that 37.5% and 32.5% of respondents were agreed and strongly agreed that mobile and agent banking services are accessible without time and place limit. Contrary to this, 10% and 7.5% of respondents were disagreed and strongly disagreed on the statement. The rest 12.5% of respondents were remained neutral.

Table 4: 36 improve customer service being a solution for banks closing their doors early

Improve customer service being a solution for banks closing their doors early.				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	1	2.5	2.5
	Neutral	5	12.5	12.5
	Agree	14	35.0	35.0
	Strongly Agree	19	47.5	47.5
	Total	40	100.0	100.0
Median				4.00
Mode				5.00

Source: Researcher's own Survey, 2018

As it is depicted in the table above respondents was asked to express their level of agreement on the statement saying "Mobile and agent banking improve customer service being a solution for banks closing their doors early". **A**ccordingly 35% and 47.5% of respondents were agreed and strongly agreed respectively. On the other hand the remaining 2.5% strongly disagreed, 2.5% disagreed, and 12.5% responds neutral.

Table 4: 37 Motivates fast small cash movers to put their extra money into the banking system

Motivates fast small cash movers to put their extra money into the banking system				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	1	2.5	2.5
	Neutral	5	12.5	12.5
	Agree	13	32.5	32.5
	Strongly Agree	20	50.0	50.0
	Total	40	100.0	100.0
Median				4.50
Mode				5.00

Source: Researcher's own Survey, 2018

As shown in table above of purposively selected e-banking staffs of six banks 32.5% and 50% were agreed and strongly disagreed respectively that mobile and agent banking motivates fast small cash movers to put their extra money into the banking system. Only 2.5% and 2.5% of respondents were strongly disagreed and disagreed respectively on the statement. The rest 12.5% of respondents responds neutral on the statement.

Table 4: 38 Increases the productivity of banks

Increases the productivity of banks				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	3	7.5	7.5
	Neutral	5	12.5	12.5
	Agree	14	35.0	35.0
	Strongly Agree	17	42.5	42.5
	Total	40	100.0	100.0
Median				4.00
Mode				5.00

Source: Researcher's own Survey, 2018

The result captured from the above table shows that 35% and 42.5% of respondents were agreed and strongly agreed respectively that mobile and agent banking services increases the productivity of banks. On the other hand, 7.5% and 2.5% of respondents were disagreed and strongly disagreed on the statement. The rest 12.5% of respondents were remained neutral on the above statement.

Table 4: 39 Mobile and agent banking create wider market coverage for bank.

Create wider market coverage for bank.				
		Frequency	Percent	Valid Percent
Valid	Strongly Disagree	1	2.5	2.5
	Disagree	2	5.0	5.0
	Neutral	4	10.0	10.0
	Agree	17	42.5	42.5
	Strongly Agree	16	40.0	40.0
	Total	40	100.0	100.0
Median				4.00
Mode				4.00

Source: Researcher's own Survey, 2018

According to table 4:39 above respondents were asked to reveal their degree of agreement on the statement saying "Mobile and agent banking create wider market coverage for bank". Accordingly, 42.5% and 40% of respondents were agreed, and strongly agreed respectively on the statement. Only 2.5% and 5% of respondents are strongly disagreed and disagreed on the statement. The rest 10% of respondents remain neutral on the statement.

Summary of perceived usefulness as a prospect for mobile and agent banking adoption

Variable	Mode	Median
Collecting small number of customers and to introduce bank to potential customers	4	4
Service enhancement	4	4
Unlimited accessibility time and place	4	4
Improve customer service being a solution for banks closing their doors early.	5	4
Motivates fast small cash movers to put their extra money into the banking system	5	4
Increases the productivity of banks	5	4
Create wider market coverage for bank.	4	4

Source: Researcher's own Survey, 2018

As shown in the table above increasing banks productivity, Motivates fast small cash movers to put their extra money into the banking system, and improve customer service being a solution for banks closing their doors early are the major prospects of adopting mobile and agent banking classified under perceived usefulness with mode=5. It is to mean that majority of respondents were strongly agreed that ho above listed variables are the major prospects of adopting mobile and agent banking classified as under perceived usefulness. In addition to this service enhancement and creating wider market coverage of the bank are prospects mobile and agent banking classified under perceived usefulness that majority of majority of respondents were agreed (mode=4). This finding is supported by Ayana (2012) identified in his study that the prospects of adopting mobile and agent banking are improving of customer satisfaction, through enhancing speed and efficiency, reduce number of customers come to banking hall, while it

reduces the work load of bank staff, increase the productivity of banks, by creating foreign currency, increase reliability and accessibility of banking service ,create better relationship among banks and clients, used as better information control and unlimited time to access bank account and information.

CHAPTER FIVE

5. Summary of Findings, Conclusion and Recommendation

5.1. Summary of findings

Guided by the technology-organization-environment (TOE) framework, this study has identified a number of challenges to adopt mobile and agent and prospects/benefits from adoption of the technology innovation.

The researcher finds that the major environmental challenges that more than 70% of respondents are agreed and strongly agreed are lack of adequate ICT infrastructure (80%), quality of internet and mobile network (77.5%), inconsistent power & network supply in rural areas of the country even in urban center (75%), the level of development in infrastructural facilities to remote area of the country (72.5%), and lack strong push from government to promote mobile and agent banking (70%). In addition to this absence of competition between local and foreign banks, and legal and regulatory frameworks on daily withdrawal limit from Agent Bank and limits of deposit with agent are other challenges that more than 50% of respondents are agreed and strongly agreed. These findings are supported by Alemayehu & Jacqueline (2011) stating that, mobile and agent banking requires a generally good infrastructure in terms of road network, communication and information technology. It is also supported by the study of Wondwossen and Tsegai (2005) stating that lack of sufficient telecommunication infrastructure is one of the basic challenges in the development of Electronic payment system adoption in Ethiopia. The finding related to daily limit on deposit and withdrawal, it was supported by Gichana (2013) stating that liquidity (float) related problems affect agency banking adoption**.**

The organizational challenges identified in this study that more than 70% of respondents had agreed and strongly agreed were cost of implementation of technology innovation related with bank size (75%), human resource related factors (support & commitment of top level management (75%), availability of well trained manpower to build agent network (72.5%), skill of it personnel (72.5%), technical and managerial skill of staffs (70%)) and proximity & accessibility of banks by retail agent (72.5%). This finding of the study is supported by Ayana (2012) stating that lack of social awareness/lack of familiarity with different technology and lack of sufficient skills to use and implement electronic banking system are barriers to adopt e-

banking system in Ethiopia. The finding related to proximity and accessibility of banks by retail agent were consistent with Gichana (2013) stating that following up liquidity factor proximity of the bank to the agent to top up their float is another challenging factor for agency banking. The above finding related with cost of implementation is supported the study of Kuan (2001) & Iacovou (1995) stating that financial resources are an important factor in facilitating innovation adoption for any organization and they are often correlated with the firm size.

Major technological challenges of adopting mobile and agent banking identified in this study were lack of confidence with the security aspect (75%), customer's fear of risk of new technology innovation (62.5%), and lack of availability of physical security (55%). It is consistent with the finding of Ayana (2012) stating that the technological barriers of adopting electronic banking were security risk and lack of trust on the technological innovation used by banking industries.

The finding of this study also indentified perceived benefits classified under perceived ease and perceived usefulness. Major benefit classified under ease of use that 82.5% of respondents were agreed and strongly agreed were its simplicity to perform banking tasks. Easiness to understand and use (55%) and friendliness with the existing service offering (57.5%) are other benefits classified under perceived ease of use that more than 50% of respondents are agreed and strongly agreed. This findings are supported by the finding of Khalid et al (2006) which shows that there is a clear agreement about the importance of making the E-banking service because of it is easy to deliver service to customers, and Hoppe et al. (2001) which suggest that the more complex a new technology is perceived to be, the less likely it will be adopted and the more ease of use the more likely to be adopted.

The major benefits identified in this study classified as perceived usefulness that more than 70% of respondents were agreed and strongly agreed are improving customer service being a solution for banks closing their doors early (82.5%), motivates fast small cash movers to put their extra money into the banking system (82.5%), creating wider market coverage for the bank (82.5%), increases the productivity of banks (77.5%), service enhancement (77.5%), service accessibility without limit of time and place (70%). This finding is supported by Ayana (2012) identified in his study that the prospects of adopting mobile and agent banking are improving of customer satisfaction, through enhancing speed and efficiency, reduce number of customers come to

banking hall, while it reduces the work load of bank staff, increase the productivity of banks, by creating foreign currency, increase reliability and accessibility of banking service ,create better relationship among banks and clients, used as better information control and unlimited time to access bank account and information.

5.2. Conclusion

The study findings revealed that the banking sector in Ethiopia is eager to adopt the mobile and agency banking system as an alternative service delivery channel by identifying its main challenges and prospects. The agency banking system presents an opportunity for speedy expansion at lower cost by leveraging on the existing investment of retail agents through implementation of information and communication technology.

However, agency banking system is not well adopted by Ethiopian banking industry due to lack of adequate ICT infrastructure, lack of suitable legal frameworks, poor quality of internet and mobile network, the low level of development in infrastructural facilities to remote area of the country, lack of confidence with the security aspect, and customer's fear of risk of new technology innovation. In addition to this, Cost of implementation of technology innovation related with bank size, human resource related factors (lack of support & commitment of top level management, lack of availability of well trained manpower to build agent network, and lack of technical and managerial skill of staffs) and proximity & accessibility of banks by retail agent are also challenges in adopting the system to the industry.

The study also disclosed the benefits of the technological innovation to the banks to drive the adoption of the system. The Perceived Ease of Use, in general, is one of the basic benefits of agency banking system, which enables bank staff to perform banking activities in a simple way. The other driving force to adopt such system is perceived usefulness, where it is used for time saving and cost reduction among others. This and the other benefits identified in the study were considered as major driving force for banks in extending its service effectively and efficiently to cover the required market outreach.

5.3. Recommendation

Mobile and Agency banking system is new development in Ethiopian Banking industry with significant impact in extending the banking services effectively and efficiently to achieve the required objectives with concerted efforts of all stakeholders; so it need a lot of efforts to succeed.. Based on the conclusion, the researcher recommends the following points:

- ✓ The regulatory body (NBE) should issue suitable legal frameworks to ease the adoption of mobile and agent banking system. For instance, regarding the balance and daily transaction limits set on agent banking, mobile money or E-wallet, should be lifted and the limit should be set by the financial institutions themselves based on their risk appetite.
- ✓ Government should support banking sector by investing on ICT infrastructure development and financial education program
- ✓ Local banks should consider technology based competition considering market coverage expansion, cost reduction, and customer satisfaction
- ✓ Issues of insecurity should be addressed so that the fear among customers and agents that they might be attacked and robbed are minimized, this will restore confidence and improve transactions and financial access.
- ✓ More information and awareness should be put in public to build confidence and trust in mobile and agency banking as a secure, efficient and modern way of banking.
- ✓ Education and awareness creation should be well employed by banks to create trust and confidence associated with mobile and agent banking.

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Appendix : Survey Result

Gender of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	26	65.0	65.0	65.0
	Female	14	35.0	35.0	100.0
	Total	40	100.0	100.0	

Age of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-30	29	72.5	72.5	72.5
	31-40	6	15.0	15.0	87.5
	41-50	5	12.5	12.5	100.0
	Total	40	100.0	100.0	

Education level of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma	2	5.0	5.0	5.0
	First Degree	31	77.5	77.5	82.5
	Second Degree	7	17.5	17.5	100.0
	Total	40	100.0	100.0	

Income level of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2000-4000	2	5.0	5.0	5.0
	4001-6000	4	10.0	10.0	15.0
	6001-8000	19	47.5	47.5	62.5
	8001-10000	9	22.5	22.5	85.0
	Above 10000	6	15.0	15.0	100.0
	Total	40	100.0	100.0	

Lack of adequate ICT infrastructure negatively influence adoption of mobile and agent banking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	3	7.5	7.5	10.0
	Neutral	4	10.0	10.0	20.0
	Agree	15	37.5	37.5	57.5
	Strongly Agree	17	42.5	42.5	100.0
	Total	40	100.0	100.0	

The quality of internet connection and mobile network significantly challenge adoption of mobile and agent banking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	3	7.5	7.5	10.0
	Neutral	5	12.5	12.5	22.5
	Agree	17	42.5	42.5	65.0
	Strongly Agree	14	35.0	35.0	100.0
	Total	40	100.0	100.0	

The levels development of ICT infrastructure significantly impacts mobile and agent banking adoption.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	5.0	5.0	5.0
	Disagree	4	10.0	10.0	15.0
	Neutral	5	12.5	12.5	27.5
	Agree	16	40.0	40.0	67.5
	Strongly Agree	13	32.5	32.5	100.0
	Total	40	100.0	100.0	

Lack of regulatory guidelines on mobile and agent banking negatively influences adoption of mobile and agent banking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	5.0	5.0	5.0
	Disagree	6	15.0	15.0	20.0
	Neutral	11	27.5	27.5	47.5
	Agree	13	32.5	32.5	80.0
	Strongly Agree	8	20.0	20.0	100.0
	Total	40	100.0	100.0	

Lack of legal frame works that enforce banks to adopt mobile and agent banking significantly impacts mobile and agent banking adoption.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	5.0	5.0	5.0
	Disagree	5	12.5	12.5	17.5
	Neutral	11	27.5	27.5	45.0
	Agree	15	37.5	37.5	82.5
	Strongly Agree	7	17.5	17.5	100.0
	Total	40	100.0	100.0	

Lack of strong push from the Government to promote mobile and agent banking significantly impacts mobile and agent banking adoption.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	5.0	5.0	5.0
	Disagree	3	7.5	7.5	12.5
	Neutral	7	17.5	17.5	30.0
	Agree	17	42.5	42.5	72.5
	Strongly Agree	11	27.5	27.5	100.0
	Total	40	100.0	100.0	

The level of development in providing infrastructural facilities to remote area of the country significantly impacts mobile and agent banking adoption.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	5.0	5.0	5.0
	Disagree	2	5.0	5.0	10.0
	Neutral	6	15.0	15.0	25.0
	Agree	14	35.0	35.0	60.0
	Strongly Agree	16	40.0	40.0	100.0
	Total	40	100.0	100.0	

Lack of strong competition between local banks on innovation negatively influences mobile and agent banking adoption.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	12.5	12.5	12.5
	Disagree	8	20.0	20.0	32.5
	Neutral	6	15.0	15.0	47.5
	Agree	15	37.5	37.5	85.0
	Strongly Agree	6	15.0	15.0	100.0
	Total	40	100.0	100.0	

Lack of competition from foreign banks negatively influences mobile and agent banking adoption.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	10.0	10.0	10.0
	Disagree	5	12.5	12.5	22.5
	Neutral	9	22.5	22.5	45.0
	Agree	12	30.0	30.0	75.0
	Strongly Agree	10	25.0	25.0	100.0
	Total	40	100.0	100.0	

Inconsistent power & network supply specifically in rural areas affects mobile & agent banking adoption.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	3	7.5	7.5	10.0
	Neutral	6	15.0	15.0	25.0
	Agree	12	30.0	30.0	55.0
	Strongly Agree	18	45.0	45.0	100.0
	Total	40	100.0	100.0	

Daily withdrawal limit from Agent Bank and limits of deposit with Agent bank has an impact on success of Agent Banking services.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	4	10.0	10.0	12.5
	Neutral	6	15.0	15.0	27.5
	Agree	16	40.0	40.0	67.5
	Strongly Agree	13	32.5	32.5	100.0
	Total	40	100.0	100.0	

Limits in geographic boundary and currency has an impact on mobile and agent banking adoption

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	10.0	10.0	10.0
	Disagree	6	15.0	15.0	25.0
	Neutral	10	25.0	25.0	50.0
	Agree	14	35.0	35.0	85.0
	Strongly Agree	6	15.0	15.0	100.0
	Total	40	100.0	100.0	

Implementing technological innovation requires high investment cost.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	4	10.0	10.0	12.5
	Neutral	5	12.5	12.5	25.0
	Agree	17	42.5	42.5	67.5
	Strongly Agree	13	32.5	32.5	100.0
	Total	40	100.0	100.0	

Availability of well trained manpower to build agent network affects adoption of mobile and agent banking.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	5.0	5.0	5.0
	Disagree	3	7.5	7.5	12.5
	Neutral	6	15.0	15.0	27.5
	Agree	13	32.5	32.5	60.0
	Strongly Agree	16	40.0	40.0	100.0
	Total	40	100.0	100.0	

The size of bank significantly influences adoption of mobile and agent banking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	5.0	5.0	5.0
	Disagree	6	15.0	15.0	20.0
	Neutral	6	15.0	15.0	35.0
	Agree	17	42.5	42.5	77.5
	Strongly Agree	9	22.5	22.5	100.0
	Total	40	100.0	100.0	

Lack of skilled IT personnel on technological innovation negatively influences adoption of mobile and Agent banking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	5.0	5.0	5.0
	Disagree	5	12.5	12.5	17.5
	Neutral	4	10.0	10.0	27.5
	Agree	16	40.0	40.0	67.5
	Strongly Agree	13	32.5	32.5	100.0
	Total	40	100.0	100.0	

Lack of technical and managerial skills of staffs on Using technological innovation negatively influences adoption of mobile and agent banking.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	4	10.0	10.0	12.5
	Neutral	7	17.5	17.5	30.0
	Agree	15	37.5	37.5	67.5
	Strongly Agree	13	32.5	32.5	100.0
	Total	40	100.0	100.0	

Educational level and skill of Agents significantly impact adoption of mobile and agent banking.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	4	10.0	10.0	12.5
	Neutral	10	25.0	25.0	37.5
	Agree	16	40.0	40.0	77.5
	Strongly Agree	9	22.5	22.5	100.0
	Total	40	100.0	100.0	

Managing credit risk, operational risk, Liquidity risk and reputational risk greatly influence adoption of mobile and agent banking.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	2	5.0	5.0	7.5
	Neutral	14	35.0	35.0	42.5
	Agree	16	40.0	40.0	82.5
	Strongly Agree	7	17.5	17.5	100.0
	Total	40	100.0	100.0	

Commitments of top level management to adopt new technology positively influences adoption of mobile and agent banking.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	4	10.0	10.0	12.5
	Neutral	5	12.5	12.5	25.0
	Agree	18	45.0	45.0	70.0
	Strongly Agree	12	30.0	30.0	100.0
	Total	40	100.0	100.0	

Proximity and accessibility to a bank branch by the retail agent's impacts adoption of mobile and agent banking.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	3	7.5	7.5	10.0
	Neutral	7	17.5	17.5	27.5
	Agree	19	47.5	47.5	75.0
	Strongly Agree	10	25.0	25.0	100.0
	Total	40	100.0	100.0	

Lack of confidence with the security aspects negatively influences adoption of mobile and agent banking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	5.0	5.0	5.0
	Disagree	2	5.0	5.0	10.0
	Neutral	6	15.0	15.0	25.0
	Agree	19	47.5	47.5	72.5
	Strongly Agree	11	27.5	27.5	100.0
	Total	40	100.0	100.0	

Lack of availability of physical security negatively impact adoption of mobile and agent banking.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	7.5	7.5	7.5
	Disagree	4	10.0	10.0	17.5
	Neutral	11	27.5	27.5	45.0
	Agree	16	40.0	40.0	85.0
	Strongly Agree	6	15.0	15.0	100.0
	Total	40	100.0	100.0	

Customers fear of risk of new technology innovation affects mobile and agent banking adoption

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	5.0	5.0	5.0
	Disagree	3	7.5	7.5	12.5
	Neutral	10	25.0	25.0	37.5
	Agree	14	35.0	35.0	72.5
	Strongly Agree	11	27.5	27.5	100.0
	Total	40	100.0	100.0	

Mobile and agent banking is easy to understand and use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	7.5	7.5	7.5
	Disagree	8	20.0	20.0	27.5
	Neutral	7	17.5	17.5	45.0
	Agree	15	37.5	37.5	82.5
	Strongly Agree	7	17.5	17.5	100.0
	Total	40	100.0	100.0	

Bank provide simple instruction how to use mobile and agent services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	7.5	7.5	7.5
	Disagree	6	15.0	15.0	22.5
	Neutral	6	15.0	15.0	37.5
	Agree	19	47.5	47.5	85.0
	Strongly Agree	6	15.0	15.0	100.0
	Total	40	100.0	100.0	

Mobile and agent banking services are compatible with the existing service offerings of the bank

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	4	10.0	10.0	12.5
	Neutral	12	30.0	30.0	42.5
	Agree	14	35.0	35.0	77.5
	Strongly Agree	9	22.5	22.5	100.0
	Total	40	100.0	100.0	

Mobile & agent banking service helps to perform banking tasks in simple way

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	2	5.0	5.0	7.5
	Neutral	4	10.0	10.0	17.5
	Agree	15	37.5	37.5	55.0
	Strongly Agree	18	45.0	45.0	100.0
	Total	40	100.0	100.0	

Mobile and agent banking used to collect small no. of customers and to introduce the name and service of the bank to potential customers.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	5.0	5.0	5.0
	Disagree	3	7.5	7.5	12.5
	Neutral	7	17.5	17.5	30.0
	Agree	16	40.0	40.0	70.0
	Strongly Agree	12	30.0	30.0	100.0
	Total	40	100.0	100.0	

Mobile and agent banking will enhance access to the bank service by both existing and new customers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	5.0	5.0	5.0
	Disagree	3	7.5	7.5	12.5
	Neutral	4	10.0	10.0	22.5
	Agree	18	45.0	45.0	67.5
	Strongly Agree	13	32.5	32.5	100.0
	Total	40	100.0	100.0	

Mobile and agent services are accessible without time and place limit.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	7.5	7.5	7.5
	Disagree	4	10.0	10.0	17.5
	Neutral	5	12.5	12.5	30.0
	Agree	15	37.5	37.5	67.5
	Strongly Agree	13	32.5	32.5	100.0
	Total	40	100.0	100.0	

Mobile and agent banking improve customer service being a solution for banks closing their doors early.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	1	2.5	2.5	5.0
	Neutral	5	12.5	12.5	17.5
	Agree	14	35.0	35.0	52.5
	Strongly Agree	19	47.5	47.5	100.0
	Total	40	100.0	100.0	

Mobile and agent banking create wider market coverage for bank.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	2	5.0	5.0	7.5
	Neutral	4	10.0	10.0	17.5
	Agree	17	42.5	42.5	60.0
	Strongly Agree	16	40.0	40.0	100.0
	Total	40	100.0	100.0	

Mobile and agent banking motivates fast small cash movers to put their extra money into the banking system

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	1	2.5	2.5	5.0
	Neutral	5	12.5	12.5	17.5
	Agree	13	32.5	32.5	50.0
	Strongly Agree	20	50.0	50.0	100.0
	Total	40	100.0	100.0	

Mobile and agent banking services increases the productivity of banks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	2.5	2.5	2.5
	Disagree	3	7.5	7.5	10.0
	Neutral	5	12.5	12.5	22.5
	Agree	14	35.0	35.0	57.5
	Strongly Agree	17	42.5	42.5	100.0
	Total	40	100.0	100.0	