ASSESSING OPPORTUNITIES AND CHALLENGES OF CBE – BIRR MOBILE MONEY SERVICE: CASE STUDY ON COMMERCIAL BANK OF ETHIOPIA

BY:

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ADDIS ABABA, ETHIOPIA

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St. Mary's University

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Declaration

Here with I, declare that, this thesis is prepared for the partial fulfillment of the requirements for MBA Degree (General MBA) entitled **"Assessing Opportunities and Challenges Of CBE – BIRR Mobile Money Service: Case Study On Commercial Bank of Ethiopia"** is prepared with my own effort. This work is original in nature and has not presented for a degree in any university. I have made it independently with the close advice and guidance of my advisor and all source of material used for the thesis have been duly acknowledged.

Declared By: Yeshitla Tesfaye

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Finally, I wish to acknowledge the efforts and support of those individuals and their institutions that led to the success of this study such as commercial banks employees and their officials.

Abstract

CBE-BIRR is an agent banking service introduced by Commercial Bank of Ethiopia and CBE-BIRR customers can transfer money to subscribed or unsubscribed users, deposit and withdraw cash from agents, buy airtime directly without scratching mobile cards, pay for goods and services. The general objective of the study is to assess the challenges, opportunities and factors influencing customers' intention to use CBE – BIRR Mobile money service. The total sample size was 382 also research paper employs convenient to select the respondent. Most respondents agreed that Resistance to changes in technology by the society, Limitation in building effective agent network and Lack of reliable customer support service are the main challenges for implementation and expansion of CBE – BIRR mobile money service. The most ranked opportunities identified in this study that large number of respondent agreed on opportunities of implementing and expanding CBE – BIRR mobile money service in commercial bank of Ethiopia is that Commitment of the government to strengthen the banking industry, late adopter opportunities, Increment of educated potential customer and Improvement in the banking habit of the society. The survey result shows that R-square value is 0.707 which is 70.7% of the variation in dependent variable (intention to use CBE - BIRR) is explained by the predictors namely; perceived ease of use, perceived usefulness, perceived trust and perceived risk. The hypothesis test summary revealed that H1, H2 and H4 has a positive and significant effect on behavioral intention towards using CBE – BIRR mobile money so the hypothesis is accepted and H3 is rejected because the calculated t-statistic value is negative. The researcher also recommend Banks should launch campaigns to create direct awareness to potential adopters, issues such as fear of the lack of privacy and security, together with relative advantages of using Agent banking services.

Key words: CBE – BIRR Mobile money service, Agent Banking

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LIST OF ACRONYMS

ANOVA: analysis of variance

BI: Behavior Intention

CBE: Commercial Bank of Ethiopia

CBE – BIRR: Commercial Bank of Ethiopia Mobile money service

DIT: Diffusion of Innovation Theory

ICT: Information and Communication Technology

IN: Intention to use CBE - BIRR

N: Population

PU: Perceived Ease of Use

PIN: Personal Identification Numbers

PR: Perceived Risk

PT: Perceived Trust

PU: Perceived Usefulness

Ss: Sample Size

SPSS: statistical package for social science

USSD: Unstructured Supplementary Services Date

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Information technology is highly affecting human activities and their ways of life. Advancement in Information technology is changing every sector's working practice. Banking is one of the sectors which are rapidly evolving through information technology (Ferdous, Al Mosharrafa, & Farzana, 2015).

In the last two decades mobile technology has flourished throughout the developing world faster than any other technology in history. According to the International Telecommunication Union, mobile phone subscribers currently constitute 5.9 billion, the global penetration reaches a staggering 94% in general and 79% in the developing world (ITU, 2017). With that growth comes an equally impressive surge of messaging services, providing not just a broadly used means of personal communications, but also a number of valuable information services, from agricultural data reports to healthcare reminders. The latest phenomenon initiated by mobile technology is mobile money.

Mobile money, which is a subset of electronic money, refers to financial services and transactions made on a mobile phone. It is not always the case that these services are tied directly to a personal bank account. Services offered on the mobile money platform is providing money transfer services to millions of previously under-served people in the developing world, allowing them to safely send money and pay bills for the first time without having to rely exclusively on cash (Mas and Siedek, 2008).

Agent-banking is an arrangement by which licensed institutions engage third parties to offer certain banking services on their behalf. Agency banking is branchless banking based on ICT that allows financial institutions to offer financial service outside the traditional bank premises (Mas and Siedek, 2008). There are significant benefits to be gained by the use of mobile technology by financial services providers' i.e agents, especially in rural and nonbank areas, in

the form of cost savings, efficiency, fraud and error reduction, foster flexibility, client security and convenience (Admassu and Asayehg, 2014).

The global leader in mobile money is Kenya, where mobile network operator Safaricom launched M-Pesa in 2007. Less than five years after launch, there are approximately 16 million users of mobile money in Kenya, conducting over 2 million transactions every day. M-Pesa is not only being used for standard money transfers and airtime purchase, but also to pay salaries, utility and other bills, and to buy goods and services at both online and physical merchants. Today, Kenya, where the M-Pesa mobile money transfer has been successful stands as a world leader in the provision of mobile money services with about 19.5 million service users and an annual transaction volume of about KES 672.3 billion (US$ 8 billion) or 24 percent of Kenyan Gross Domestic Product (GDP) (CCK Report, 2012).

CBE-BIRR is an agent banking service introduced by Commercial Bank of Ethiopia in accordance with NBE directive number FIS/01/2012. It was in testing phase from June 2017 to December 2017 and became live in December 12, 2017. Like other agent banking service providers, CBE-BIRR customers can transfer money to subscribed or unsubscribed users, deposit and withdraw cash from agents, buy airtime directly without scratching mobile cards, pay for goods and services. Commercial Bank of Ethiopia has more than 1,200 branches in Ethiopia and CBE-BIRR is taking advantage of this huge number of networked branches to recruit new agents and customers. Currently commercial bank of Ethiopia had 3,211 CBE-BIRR agents, 589,071 CBE-BIRR customers and mobilized 2.5 million birr (CBE annual report, June 2018).

There are different researches done in different institutions on the adoption, challenges, opportunities and factors that affects agent banking business in Ethiopia. However, any of the studies didn't include information from CBE-BIRR agents and customers because this service is launched recently by CBE (it is only around one year in practice) so this research tries to close the gap.

1.2 Statement of the Problem

Nowadays there are large numbers of commercial banks in Africa, but most of commercial bank branches are located in cities, in search of well-built infrastructure and market. According to

World Bank (2017), 61.73% of Sub-Sahara African population lives in rural areas with lower level of infrastructure development. However, traditional branch based banking discriminates this significant number of population from accessing modern banking services (Atandi, 2013).

The adoption of mobile money services in emerging economies is particularly important because increased financial access can have a positive impact on long term economic growth through reducing poverty and income inequality (Levine, 2005).

Ethiopian population has reached more than one hundred million and 80.5% of them live in rural areas with poor level of infrastructure (UN, 2016) and according to NBE, 2017 financial institutions distributed unfairly across the country (most of bank branches are located in Addis Ababa and other cities) but in Ethiopia there are 51 million mobile subscribers, which is around 50% of the total population and 15 million internet subscribers (Asfaw, 2015). So to extract this advantage and to play key role in the development of the country by mobilizing money and by increase living standard, CBE – BIRR Mobile money service comes up as a remedial solution since it allows offering financial service outside the traditional bank premises to directly make cash transfer to beneficiaries through their mobile, deposit and withdraw cash from agents, buy airtime directly without scratching mobile cards and pay for goods and services.

However, despite this importance of Mobile money service, closer observation shows that there are still slow adaptation, problem of frequent network failure and inadequate awareness of available Mobile money services (Balanchandler, 2010).

In order to encourage further Mobile money service adoption in developing countries, a better understanding of the barriers and drivers impacting Mobile money service adoption is critical (Zhao et al. 2008). By gaining an in-depth understanding of the challenges and opportunities of Mobile money service and factors that influence its adaptation process so as developing countries like Ethiopia be able to fully adopt and realize its benefit. So this research tries to identify challenges, opportunities and factors that influence its adaptation of CBE – BIRR mobile money services in Ethiopia and it tried to answer the following research questions.

1.3.1 Research Questions

The main research questions addressed within this study are:

1) What are the challenges of implementing and expanding CBE – BIRR Mobile money service?

2) What are the opportunities of implementing and expanding CBE – BIRR Mobile money service?

3) What factors influence customers' intention to use CBE – BIRR Mobile money service?

1.3.2 Research Hypotheses

H1: Perceived Ease of Use has a positive and significant relationship with behavioral intention to use CBE- BIRR mobile money service.

H2: Perceived usefulness has a positive and significant relationship with behavioral intention to use CBE- BIRR mobile money service.

H3: Perceived Trust has a positive and significant relationship with behavioral intention to use CBE- BIRR mobile money service.

H4: Perceived risk has a positive and significant relationship with behavioral intention to use CBE- BIRR mobile money service.

1.4. Objective of the Study

1.4.1. General Objective

The general objective of the study is to assess the challenges, opportunities and factors influence customers' intention to use CBE – BIRR Mobile money service.

1.4.2. Specific Objectives

The specific objectives that this study is to materialize at the end of the study are:

1) To investigate the various aspect of potential and eminent challenges of implementing and expanding CBE – BIRR Mobile money service.

2) To identify the various opportunities of implementing and expanding CBE – BIRR Mobile money service.

3) To explore the factors that influence customers' intention to use CBE – BIRR Mobile money service in Ethiopia and to find the relationship between dependent and independent variables.

1.5 Significance of the Study

Agent banking (Mobile money service) is a highly growing mechanism of addressing the un-banked society. In addition, it also has a competitive advantage for financial institutions. Furthermore, agent banking contributes to the development of financially inclusive economy and it makes financial services accessible to the society.

This study was important because:

- ❖ It tries to identify the challenges and opportunities regarding the CBE – BIRR Mobile money service in Ethiopia.
- ❖ It tries to identify the major factors that affect customers' adaption of CBE – BIRR Mobile money service in Ethiopia and to find the relationship between dependent and independent variables.

Also this study tries to add on to the existing literature concerning challenges and opportunities regarding the CBE – BIRR Mobile money service in the Ethiopian context so that banks in Ethiopia can use the research as an indicator for what they should do. Furthermore the research can also assist top level managements and policy makers of the bank in understanding about this topics in commercial bank of Ethiopia and others bank that are found in Ethiopia.

1.6 Scope of the Study

The major focus of this study is to assess the challenges, opportunities and factors influence customers' intention to use CBE – BIRR Mobile money service.

The study centered on only some selected branches of commercial bank of Ethiopia which is found in Addis Ababa.

1.7 Organizing This Paper

The study is organized under five chapters. The introductory part bears background information, Statement of the problem, objectives, significance of the study, Scope of the study and limitation of the study presents. The second chapter deals with review of related literature and the proposed model based on the literature review. The third chapter presents methodology that is used to conduct the study. The fourth chapter presents the findings from the respondents wherein the data gathered are analyzed and interpreted and covers the statistical analysis methods and details the results of this research that include demographic statistics, reliability analysis, factor analysis, correlation and regression analysis for testing the direction are presented in this chapter as well. Finally, the last chapter attempt to summarize or conclude and recommend possible solutions to the problems and assesses the limitations and future research.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Theoretical Framework

2.1.1 Definition of Agent Banking

Agent banking is a kind of branch less 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, Irfan, Zaman, Akhtar, Raheja, Shafiq and Masood, 2011).

Agent banking is a retail or postal outlet contracted by a financial institution or a mobile network operator to process client's transactions. Rather than a branch teller, it is the owner or an employee of the retail outlet who conducts the transaction and lets clients deposit, withdraw, and transfer funds, pay their bills, inquire about an account balance, or receive government benefits or a direct deposit from their employer. Banking agents can be pharmacies, supermarkets, convenience stores, lottery outlets, post offices and many more (Kumar, Nair, Parsons, & Urdapilleta, 2006).

Agent banking is the provision of financial services to customers by a third party (agent) on behalf of a licensed deposit taking financial institution and/or mobile money operator (principal). (CBE – BIRR procedure, 2017)

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 and Siedek, 2008).

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. The Bank-Led Model is the one which Banks are granted vested right to run the Mobile and Agent Banking business by the National Bank. The Regulation of Mobile and Agent Banking Services Directive No.FIS/01/2012 issued by National Bank of Ethiopia (NBE) clearly stated that Ethiopia has adopted the Bank Led Model.

Accordingly, only commercial banks are allowed to provide the service in Ethiopia with prudent supervision by the National Bank of Ethiopia.

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/ 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).

2.2 Drivers of Agent Banking

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 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 (Kumar et al, 2006). 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 (Kumar et al, 2006).

The agent offers front-line customer service including physical space and operation of the POS 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 Agent Banking Services.

2.3 Challenges of Agent Banking

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 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. el 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).

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. 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 (Barasa et al, 2013).

Barasa (2013) contends that Agent Banking systems are up to three times cheaper to operate than branches for two reasons. First, Agent Banking minimizes fixed costs by leveraging existing retail outlets and reducing the need for financial agent banks to invest in their own infrastructure. Second, acquisition costs are lower for bank-enabled agents and bank wallets.

Agents require a lot of capital because they need to have enough cash on hand and electronic float for customers to withdraw and deposit on demand. Other costs also require upfront investment, though in much smaller amounts. Agents may need to acquire a business license, bring the look and feel of their store up to standards (paint, counter, etc.), or make security improvements beyond all this they need to keep a prepaid balance/Collateral at the bank premises (Flaming et al. 2011).

In the countries studied, the banks and non-banks involved undoubtedly devoted significant effort to researching the relevant laws and regulations before investing in agent-assisted branch-less banking approaches, and in most cases, they also consulted with regulatory authorities to understand better how authorities were likely to apply existing rules to the new model. But because regulators have had little experience with both models and are still adjusting existing rules to address them (or have yet to begin this process), some level of legal and regulatory uncertainty and ambiguity for both the banks and to a lesser extent also for retail agents remains (Makin, 2012).

Product Image in the Society and Social Issue is also another concern area for financial institutions when retail agent's underpay-from or are robbed, banks' public image may suffer. Many operational risks mentioned (such as the loss of customer records or the leakage of confidential customer data) also can cause reputational risk, as can liquidity shortfalls in the retail agent's cash drawer. This and other mismanagement of the product image because the bad image on the public towards the new product refrain them to usage of the product (Laurer, 2011).

Managing the Risk has remained a challenge in association with technologically innovative products like Mobile and Agent Banking. Technological related risks are risks with regard to technology and could be characterized by unparalleled speed of transformation related to technological and customer service innovation, the nature of electronic network is open everywhere in the globe, the mobile banking application systems are integrated with the financial institutions legacy core application systems and with the hardware. And the necessary information technology service increases the financial institution dependency on the third parties. Whereas Infrastructure and Software Application Risks are attributed to financial institution without laying down proper information business continuity plans, security policies and procedures will be in a haphazard condition of performing information security operations of Agent Banking. This may result into serious IT operational risks like data backup issues, segregation of jobs, succession planning, capacity planning, and disaster recovery and business continuity (Chiteli, 2013).

2.4 Benefits of 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.

2.4.1 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.

2.4.2 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.

2.4.3 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.

2.5 Technology Acceptance theories and Models

The main models advanced in information and communication studies literature include the Technology Acceptance Model (TAM), the Innovation Diffusion Theory (IDT) (Rogers, 2003), and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003).

2.5.1 Technological Acceptance Model (TAM)

TAM is an adaptation of Fishbein and Ajzen's Theory of Reasoned Action (TRA) that proposes that behavior is a direct consequence of behavioral intention, Koenig-Lewis et al. (2010). Most literatures on mobile services show that TAM is the most widely used, validated and replicated theoretical model in the prediction of future consumer behavior (Legris et al, 2003). Davis argues that the intention to use a particular technology is based on a person's behavioral intention which is determined by two beliefs; perceived ease of use and perceived usefulness (Sangle & Awasthi, 2011). Many authors have established that the TAM constructs are insufficient in examining a user's acceptance of mobile money services and have employed different extended versions of the model (Davis, 2000).

Figure 2.1 Technology Acceptance Model (TAM)
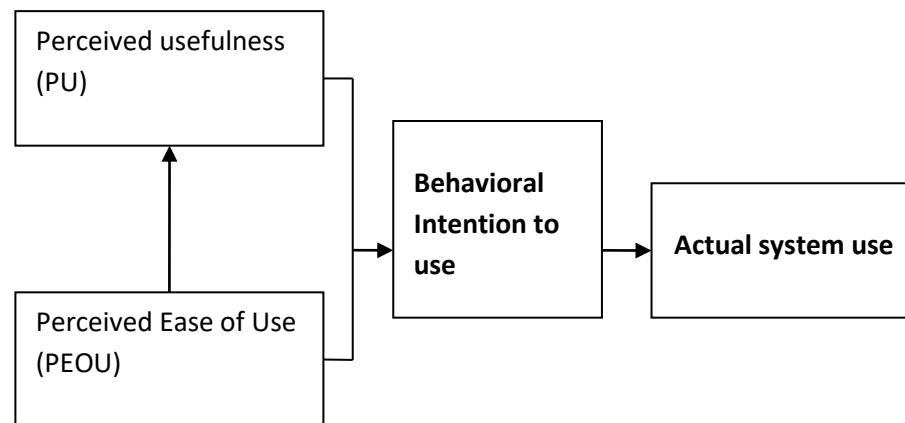
The constructs are explained as follows:

Perceived Ease of Use - The perceived ease of use construct refers to the degree to which an individual expects that using a particular system would be free of effort (Liu & Li, 2009).

Perceived ease of use on the other hand, relates to whether mobile financial services is easy to learn and use (Aldas-Manzano et al, 2012).

Perceived Usefulness - Perceived usefulness refers to the degree to which an individual perceives that using a particular system would enhance his/her job performance (Liu and Li, 2009). Aldas-manzano et al., (2012) assert that perceived usefulness refers to the advantages that financial transactions offers and whether using a mobile phone is useful for performing financial transactions.

2.5.2 Diffusion of Innovation (IDT)

The other widely used theory is IDT, which helps to understand customer's behavior in the adoption or non-adoption of an innovation. In the theory, diffusion is defined as the process by which an innovation is communicated through certain channels over time among the members of a social system‖ (Rogers, 2003). The theory highlights five perceived characteristics that influence the adoption and non-adoption of an innovation which are: relative advantage, perceived compatibility, simplicity or complexity of use, trialability and observability (Rogers, 2003) as the key characteristics that enable an innovation to be taken up by a population. Some of the main construct of the theory are;

Relative advantage

Rogers (2003) defines relative advantage as the degree to which an innovation is perceived as better than the idea it supersedes. It refers to whether the innovation is perceived to be superior to the product or service from which it evolves (Laukkanen & Kiviniemi, 2010).

Complexity

Rogers (2002) describes complexity as the degree to which an innovation is perceived as relatively difficult to understand and use. Complexity is similar to the perceive ease of use component of TAM and is a significant predictor of the intention to use and adopt an innovation as the more complex an innovation is the slower its rate of adoption will be (Liu & Li , 2009).

Compatibility

Rogers (2003) defines compatibility as the degree to which an innovation is perceived to be consistent with existing values, past experiences and the need of potential users. In the context of mobile money, compatibility refers to the extent to which m-money is consistent with consumers' lifestyle and current needs (Kleijnen et al., 2004)

Observability

Rogers (2002) argues that observability is the degree to which the results of an innovation are visible and tangible to others. Cruz et al., (2010) affirm that probability of adopting an innovation increases when the benefits and usage of innovation can be easily observed.

Trialability

Trialability is defined as the degree to which an innovation can be tried on a limited basis (Rogers 2002). For financial services, however, Aldas-Manzano et al (2009) assert that customers are unable to try them before adoption.

2.5.3 Unified Theory of Acceptance and Use of Technology (UTAUT)

A broad, powerful and robust theory that consolidates TAM, IDT and other models is the Unified Theory of Acceptance and Use of Technology (UTAUT) model, developed by Venkatesh et al., (2003). Zhou (2011) asserts that it is robust than other theories of technological adoption. The UTAUT aims to explain user intentions to use an Information Systems (IS) and subsequent usage behavior. The theory holds that four key constructs (performance expectancy, effort expectancy, social influence, and facilitating conditions) are direct determinants of usage intention and behavior (Venkatesh et. al., 2003).

Figure 2.2 UTAUT model
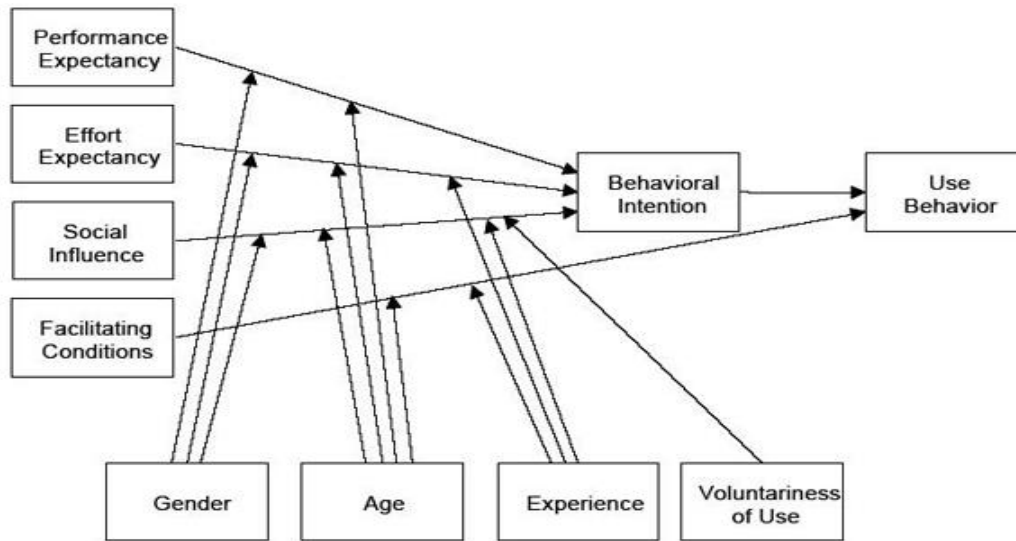
2.6 Agent Banking Practice in Ethiopia

In Ethiopia eleven commercial banks and six microfinance institutions have got permission to provide agent banking service (NBE, 2017). Among these institutions five micro finance institutions from different Ethiopian regions have started agent banking service, M-BIRR. M-BIRR provides simple financial related services, i.e. cash transfer and deposit, cash withdrawal and bill payment. However agent banking service in Ethiopia has lower rate of penetration. It has limited number of customers with partially available services.

CBE-BIRR is an agent banking service introduced by Commercial Bank of Ethiopia in accordance with NBE directive number FIS/01/2012. It was in development phase for long period of time and became live in 2017. Like other agent banking service providers, CBE-BIRR customers can transfer money to subscribed or unsubscribed users, deposit and withdraw cash from agents, buy airtime directly without scratching mobile cards and pay for goods and services.

Commercial Bank of Ethiopia has more than 1,200 branches in Ethiopia and CBE-BIRR is taking advantage of this huge number of networked branches to recruit new agents and customers.

In addition to this, there are a number of agents banking services administered by various financial institutions, mostly banks. There is also slight difference regarding the channel used to provide the service. Some banks recruit agents to provide financial services when customers appear physically and others are using modern technologies like mobile phone, which enables customers to maintain their account remotely without visiting agents.

2.7 Agent banking Practice in Kenya

Different literatures have different information about the emergence of agent banking. According to Tobbin (2012) it was first introduced in Philippines in 2003 but according to Demirgüç-Kunt et al. (2015) South Africa is the first country to have agent banking in 2004 and other scholars like Ngugi et al., (2010) argued that Kenya is the first. Regardless of its emergence Kenya's M-PESSA is the most successful agent banking service provider. M-PESA is introduced by safari com, the biggest mobile service provider in Kenya. M stands for mobile and PESSA is money in Swahili. Currently it is providing financial services i.e. cash transfer, payment for goods and services, salary payment and other services (Ngugi et al., 2010).

After two years of implementation M-PESSA had 8.6 million customers and $328 million transactions per month. Vodacom, telecom service provider in Tanzania also copied M-PESSA model to Tanzania but it couldn't be as successful as it was in Kenya. In Kenya there were 2.7 million customers after one year of operation. However, Tanzanian Telecom Company could only have 280,000 customers at the same time (Ngugi et al., 2010).

Kenyan community is slow to adopt other technologies like new technology of farming, manufacturing, transport and others. But mobile money banking was much successful. Different researchers tried to identify the success factors that make M-PESSA successful in Kenya (Ngugi et al., 2010).

2.8 Success Factors of M-PESSA in Kenya

According to Ngugi et al., (2010) before the introduction of M-PESSA, 14.3% of Kenyan rural population was dependent on its urban relatives. On the other side people in urban areas were in need of cheap and fast way of sending money to their families leaving in countryside. He also identified the following success factors for M-PESSA in Kenya.

1. Illiteracy: the un-banked society in Kenya is illiterate to handle all paperwork of operating formal bank account.

2. Cost: Kenyan banks require minimum balance and have charges if that amount of money is not maintained in customer's account. On average single current account has $19 cost per month which is not affordable for most people. In contrast M-PESSA has no minimum balance requirement and has minor charge for money transfer.

3. Location of banks: while 70% of the population in Kenya lives in rural areas, most of the bank branches are located in cities.

4. Big market share of Safaricom: Safaricom has 79% of the country's telecom market share, this allows the company to have huge market and to implement modern technologies easily (no need of migration from other telecom companies).

5. Sense of ownership: as a home grown technology, Kenyan community has real sense of ownership. The major challenge in Tanzanian case was the people considered it as foreign technology and brought to generate income to the telecom company. Due to these factors M-PESSA in Kenya became successful and could generate 8.6 million customers within two years.

2.9 Empirical Literature 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 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.

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 and Mwaura. (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.

Wolela, (2014) "Prospects and Challenges on the Implementation of Mobile and Agent Banking in Ethiopia" The objective of the study was to investigate prospect and challenges of Mobile and Agent banking in Ethiopia based on structural, organizational, infrastructural, economic, social and legal aspects. It was exploratory type of research design and data was collected through conducting interviews with key informants from different stakeholders such as selected Financial Institutions, Technology providers, NBE and Ethio - Telecom. Data were discussed with narrative method of qualitative data analysis. The researcher found out that the challenges revolve around on: having competitive price with the traditional banking offerings, improper articulation of organizational structure, infrastructure issues like Telecom, Power and road, failure to realize interoperability among financial institutions and financial literacy level of the society. Moreover, the research identified that the strangest regulatory framework drafted by NBE has missing and ambiguous articles which casted shadow on the provision of Mobile and Agent Banking in Ethiopia. The research recommended the Mixed Model approach for Agent Banking business in Ethiopia and the requirement of experience sharing with countries following similar model with Ethiopia for the successful implementation of Mobile and Agent Banking.

On the other hand the descriptive study conducted by Afewerk (2015) also studded on "assessment of agency banking innovation in Ethiopia: barriers and derivers". The author used a quantitative research approach sent out to respondents which is from the selected four banks. The finding of the study revealed that the main factors influencing the adoption of agent banking in Ethiopia are the prospects of cost reduction, availing services beyond restriction of space and time through established third party with the application of technology. The benefits were also classified as Perceived Ease of Use and Perceived Usefulness. In the conclusion The study recommended banks to consider technology based competition focusing on customer base expansion, cost reduction, awareness creation, credibility, security, ease of use, and availability to exploit the benefit of agency banking while the government should support banking sector by facilitating sufficient ICT infrastructure development and issue workable legal frameworks to ease the adoption of agency banking system.

2.10 Conceptual Framework of the Study

The measurements of customers' intention to use commercial bank of Ethiopia CBE – BIRR mobile money service is carried out with the aid of TAM model. But the researcher make some adjustments instead of using copy of the TAM model by adding perceived risk and perceived trust variables in to TAM model variables.

Figure 2.3 Conceptual Framework
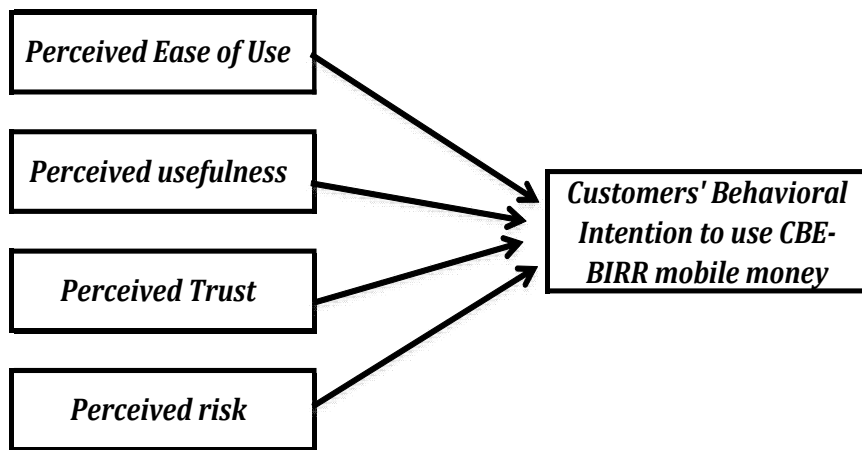
Behavioral Intention: - Consistent to all models drawing from psychological theories which argue that individual behavior is predictable and influenced by individual intention. Given that the ultimate goal of businesses (i.e., banks) is to attract consumers to adopt their services rather than the intention to adopt services, extensive research has examined the relation between behavioral intention and actual use (Sripalawat et al. 2011).

This thesis tried to examine the relationship between CBE- BIRR mobile money customer behavioral intention and actual behavior.

Perceived ease of use (PEOU): - Perceived ease of use is one of the characteristics of innovation adoption most widely used in ICT context (Wan et al., 2005; Hernandez and Mazzon, 2006). A new system is likely to be adopted if it requires fewer maneuvers to operate. Hence, when a system is complex its use takes a while to be adopted (Rogers, 2002; Eriksson et al., 2008). The determinants of perceived ease of use advanced in the literature include knowledge of

mobile money services, self- efficacy, innovativeness, facilitating conditions, and accessibility. It is important that a mobile money service is less complex for use by all, making it easy for all customers to adapt to it especially in emerging markets. (Eriksson et al. (2008) Literatures confirm that Perceived ease of use had a significant influence to customers' adoption.

H1: Perceived Ease of Use has a positive significant relationship with behavioral intention to use to CBE- BIRR mobile money service.

Perceived Usefulness (PU): - PU in the adoption of mobile money services is defined in a broader context to include how well consumers believe mobile money services can be integrated into their daily activities (Kleijnen et al, 2004). When this belief increases, the consumer's intention to use the mobile money services will also increase the adoption rate is likely to be higher. (Luarn & Lin, 2005) Ultimately, mobile money service must be viewed as useful to experience adoption success.

H2: Perceived usefulness has a positive significant relationship with behavioral intention to use CBE- BIRR mobile money service.

Perceived Trust (PT): - Mobile Money environment, like all business transactions require an element of trust. To become a viable unit of doing business mobile money service should overcome user distrust (Siau et al, 2003). And for the purpose of this study, perceived trust is defined as a measure of consumer's level of assurance that the service will be provided with minimum possible hindrance. Consumers need to have a belief that the network is reliable. Previous studies have found perceived trust as a significant determinant influencing consumers' behavioral intention towards conduct electronic commerce transactions (Mallat, 2007; Zhou, 2011).

H3: Perceived Trust has a positive significant relationship with behavioral intention to use CBE- BIRR mobile money service.

Perceived Risk (PR): - Tobbin (2011) defined risk as a consumer's belief about a potential uncertain negative outcome from the use of the service. Consumers would want to take minimal risk with their choices. Every consumer is faced with two types of risk in the purchasing decision, uncertainty and eventual negative consequence of the purchase (Chemingui &

Lallouna, 2013). According to Koenig-Lewis et al., 2010, there are six different types of risk, performance, financial, physical, social, psychological and time risk and various literature asserts that risk has a direct relationship with behavioral intention (Luarn and Lin, 2005; Kim et al., 2009). Koenig-lewis et al. (2010) conducted a study and found perceived risk to contribute to adoption of a service. For a service to be adopted, providers of the service must take into consideration the security and privacy of the service.

H4: Perceived risk has a positive significant relationship with behavioral intention to use CBE- BIRR mobile money service.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter describes how the study conducted. It focuses on the research design and approaches that were adopted, target population, sample size and selection. The chapter examines sampling techniques and procedures, pre-testing of instruments, methods and procedures for data collection and analysis.

3.1 Research Design

Since this research is quantitative in nature, the quantitative methods was applied to analyze survey data, to assess the challenges, opportunities and factors influence customers' behavioral intention to use CBE – BIRR Mobile money service for financial inclusion in Ethiopia.

3.2 Population and Sampling Technique

All the items under consideration in any field of inquiry constitute a population. According to Davis, (2000) population is defined as "the complete set of units of analysis that are under investigation, while element is the unit from which the necessary data is collected." The target populations for this study is customers who are registered for CBE – BIRR Mobile money service and specifically found in east district of commercial bank of Ethiopia. From east district the researcher select four branches i.e Andinet branch, Kazanchis branch, Aware branch and Enderase branch. As September 30, 2018 report of the bank there are 589,071 CBE-BIRR customers in CBE and only 8,375 customers are found in the above selected four branches so this customers were the target population for the research. The selected four branches criteria is due to their huge amount of CBE – BIRR customer in east district so that the researcher be able to find appropriate respondent.

The sample branches was selected by using purposive sampling technique, which means the selection of the respondent is made in a way to get sufficient data regarding the research topic.

Research generality is highly affected by sample size. Hence determining the number of representative sample size is a pivotal concern of every researcher to a given population. The following sample size determination formula, by Yamane (1967) formula developed for

sampling size, using 95% confidence level with 5% margin error, target population 8,375, the sample size is 382.

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

Where **n** is the sample size,

N is the population size, and

e is the sampling error = (0.05)

$$n = \frac{8,375}{1 + 8,375(0.05)^2} = 381.76 \sim 382$$

Hence, the total sample size was 382. Since the number of people in each bank is not the same, the number of samples for each bank was calculated by the following formula:

Branch	No. of CBE - BIRR customers	Sample size
Andinet Branch	2343	107
Kazanchis Branch	3132	143
Enderase Branch	1691	77
Aware Branch	1209	55
Total	8375	382

$$n1 = \frac{nN1}{N}$$

Where

n= total number of samples

N= total number of population

N1= total number of population in each branch

n1=number of samples each branch

Table 3.1: Number of Customers and Proportion of Samples Taken from Each Branch

This research paper employs simple convenient method to select the respondent. Simple random sampling involves allocating equal chance to the selected elements in the population. This

method involved giving a number to every respondent in the accessible population, placing the numbers in a container and then picking any number at random.

3.3. Source of Data

The researcher use both primary and secondary sources of data in the study. The secondary data is collected from publications including articles, researches and various materials that have relevance to this study and the sources is used only for literature purpose in chapter two. In this study, primary data is generated and presented through a structured questionnaire fully applied. Data was collected personally by the researcher. The questionnaire was arranged in to open ended questions and a five point Likert scale anchored with "strongly disagree" and "strongly agree" on the scale.

3.4 Method of data analysis

To accomplish the study objective and to answer the stated research question, explanatory, descriptive and inferential statistics methods were employed. Descriptive statistics such as frequency, percentage, mean and standard deviation is used. Inferential statistics such as correlation and regression were also applied to identify the relationship between dependent and independent variables.

In different research design, data analysis methods should be related with the type of research method chosen for the study. As mentioned in the previous section, primary data was collected in this study. To conduct the analysis exhaustively, the data analyzed with the combination of both descriptive statistics like minimum, maximum, mean and standard deviation of the variables and inferential statistics like correlation analysis to examine direction and significant of the correlation of the variables considered under this. In order to accomplish all the above requirements, the researcher use software to analyze the data. As a result, SPSS and Microsoft Excel were applied to analyze the collected data.

3.5 Scale Reliability and Validity Analysis

3.5.1 Scale Reliability

Reliability refers to the consistency or stability of a measuring instrument. In other words, the measuring instrument must measure exactly the same way every time it is used. This consistency means that individuals should receive a similar score each time they use the measuring instrument Jackson, (2010).

Cronbach's Alpha is a reliability coefficient that indicates how well the items in a set are positively related to one another. In addition to these structured questionnaires with likert-scale would be used to remove unstructured answers. So Cronbach's alpha used to assess the internal consistency of variables in the research instrument. Cronbach's alpha is a coefficient of reliability used to measure the internal consistency of the scale; it represented as a number between 0 and 1. According to Zikmundet al., (2000) scales with coefficient alpha between 0.6 and 0.7 indicate fair reliability.

Accordingly, this study's Cronbach's alpha coefficient meets the recommended levels for all measures. The result of the coefficient alpha for perceived ease of use, perceived usefulness, perceived trust and perceived risk shows 0.857, 0.880, 0.876 and 0.877 respectively. Also alpha coefficient for intention to use CBE – BIRR shows 0.854; this indicates good internal consistency and reliability among the items within each factors. The Cronbach''s alpha was also calculated for all 19 variables and it shows 0.884.

3.5.2 Validity Analysis

Validity is the extent to which differences found with a measuring instrument reflect true differences among those being tested, Kothari, (2004). In other words, Validity is the most critical criterion and indicates the degree to which an instrument measures what it is supposed to measure. In order to ensure the quality of the research design content and construct validity of the research will be checked. According to Kothari (2004) Content validity is the extent to which a measuring instrument provides adequate coverage of the topic under study. If the instrument contains a representative sample of the universe, the content validity is good. So with intensive literature review and help of my advisor, we make sure the validity of the measuring instrument.

3.6 Ethical Considerations

In order to keep the confidentiality of the data given by respondents, the respondents was not required to write their name and assured that their responses is treated in strict confidentiality. The purpose of the study was disclosed in the introductory part of the questionnaire. Furthermore, the researcher tries to avoid misleading or deceptive statements in the questionnaire. Lastly, the questionnaires were distributed only to voluntary participants.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

This chapter presents analysis and interpretation of findings from data that were gathered from the registered customers of CBE – BIRR mobile money service of commercial bank of Ethiopia in selected four branches found in Addis Ababa. The data was obtained through questionnaires. To obtain mere dependable information, diversified groups of respondents were involved to give information for the study.

4.1 Response Rate

The sample sizes as discussed in chapter 3 a total of 382 questionnaires were prepared to potential respondents to fill the structured questions. Out of the 382 potential respondents, a total of 257 questioners were collected and the remaining 125 were not returned. In the end, a total of 257 respondents filled and returned the questionnaire. The overall respondent rate for the survey was approximately 67.27%.

Table 4.1: Response rate

NO.	Respondent category	Frequency	Percentage
1	Responded	257	67.27
2	Didn't respond	125	32.73
		382	**100**

Source: - own computation

4.2 Demographic characteristics of Respondents

Demographic characteristics under the study include gender, age, level of education and income per month of respondents.

As we can see from the result most respondents were males (63.42%), while 36.58% were females.

The majority of respondents' age was between 14 - 30 years old, which represents 129 (50.19%) of the total sample. Moreover, the remaining 55 (21.41%) respondents were between 31 – 40 age

category, 42 (16.34%) respondents were between 41 – 50 age category and 31 (12.06%) of the respondents indicated that they belong to the greater than 51 years old.

Table 4.2 Demography of the respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Respondent Gender frequency					
	Male	163	63.42	63.42	63.42
	Female	94	36.58	36.58	100
Valid	**Total**	257	100	100	
Respondent Age frequency					
	Between 14 -30	129	50.19	50.19	50.19
	Between 31-40	55	21.41	21.41	71.60
	Between 41-50	42	16.34	16.34	87.94
	Greater than 51	31	12.06	12.06	100
	Total	257	100	100	
Respondent Education level frequency					
	No Formal or Some primary school	37	14.39	14.39	14.39
	Primary school completed	23	8.96	8.96	23.32
	Some high school or Matriculated	36	14.01	14.01	37.36
	Technical/apprenticeship	62	24.12	24.12	61.48
	College or University graduate	99	38.52	38.52	100
	Total	257	100	100	
Respondent Income frequency					
	No income	11	4.28	4.28	4.28
	Between: 1 – 999	48	18.68	18.68	22.96
	Between: 1000 – 1999	19	7.39	7.39	30.35
	Between: 2000 – 2999	30	11.67	11.67	42.02
	Between: 3000 – 4999	44	17.12	17.12	59.14
	5000 and above	105	40.86	40.86	100
	Total	257	100	100	

Source: - SPSS output form Survey Data, 2018

Furthermore, respondents were asked about their educational status. Accordingly, the majority of the respondents (38.52%) were college or university graduate and only 8.96% of the respondents

were primary school completed and the remaining respondents were having no formal or some primary school (14.39%), some high school or matriculated (14.01%) and Technical/apprenticeship (24.12%).

Finally the respondents were asked about their income per month and majority of the respondent were generate 5000 and above which is 40.86% (105) from total respondent and only 11 (4.28%) respondents having no income and the remaining respondents were generate Between 1 – 999 were 48 (18.68%), Between 1000 – 1999 were 19 (7.39%), Between 2000 – 2999 were 30 (11.67%) and Between 3000 – 4999 were 44 (17.12%).

The next question that the respondents answered is "How long have you been using CBE – BIRR mobile money service?" and according to the survey result, majority of the respondent (184 out of 257) have been using CBE – BIRR mobile money service for less than 6 months and the remaining 64 and 9 respondents have been using CBE – BIRR mobile money service for 6 month – 1 year and over one year respectively.
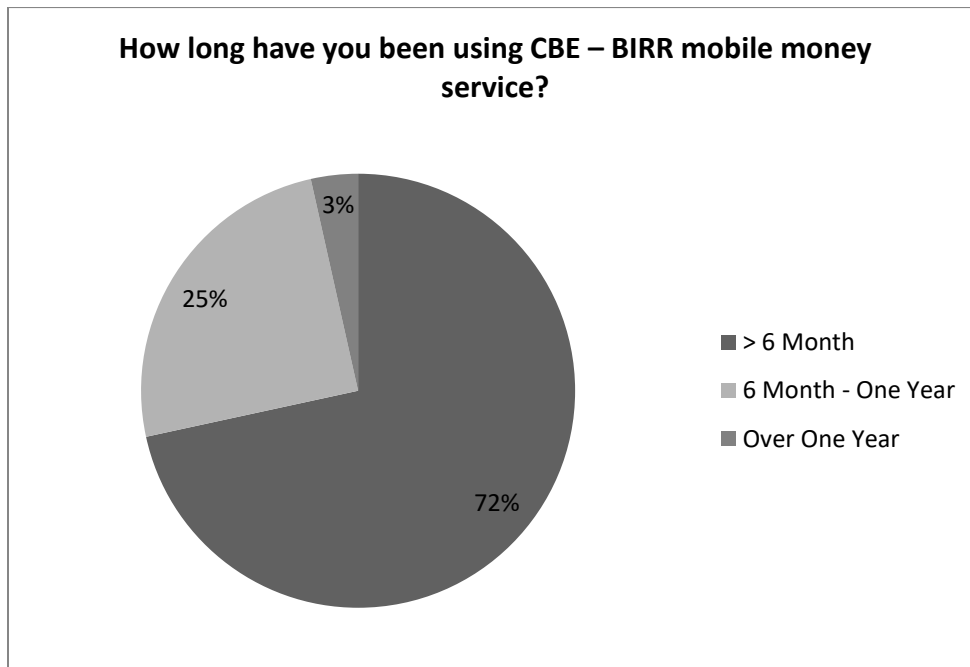
Figure 4.1 How long have you been using CBE – BIRR mobile money service?

On the other hand the respondents were asked their frequency of using CBE – BIRR mobile money service and the survey result revealed that majority of the respondents only registered and

never used the service which counts 129 and 59 respondents use CBE – BIRR mobile money service at least once in a month and the remaining uses daily and weekly which counts 53 and 16 respondents respectively.
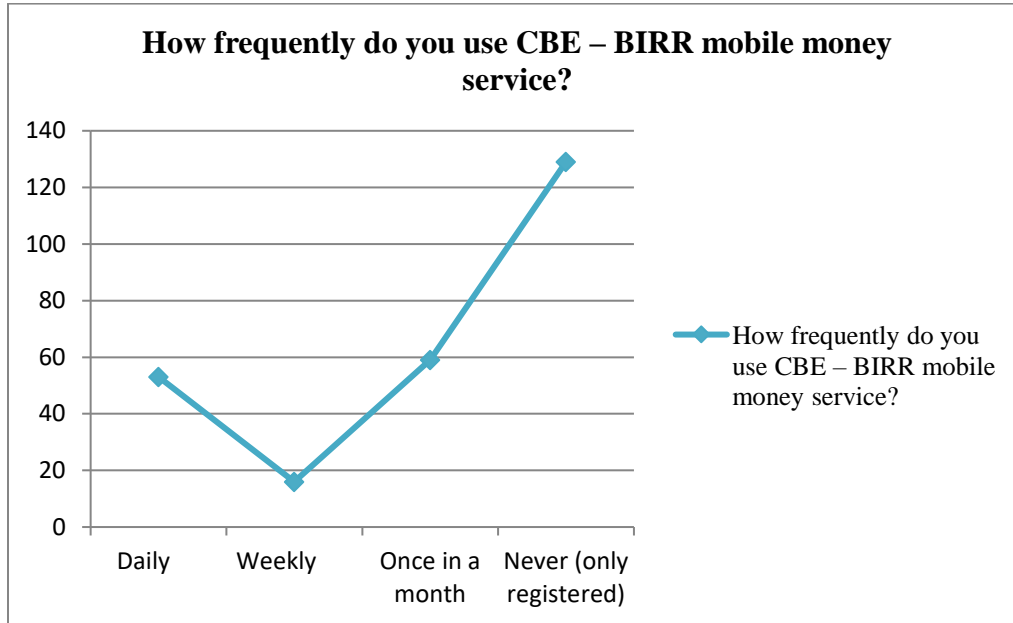
Figure 4.2 How frequently do you use CBE – BIRR mobile money service?

The other interesting question answered by the respondents is about the activities that the respondent would like to perform by using CBE – BIRR mobile money service and the major survey result summarized as follows.

- ❖ Buying airtime for both myself and others.
- ❖ Saving (depositing) into mobile money
- ❖ Withdrawing from mobile money
- ❖ Sending money
- ❖ Receiving money
- ❖ Checking CBE – BIRR account balance
- ❖ Change PIN or security number of own CBE – BIRR account

4.3 Challenges and opportunities of implementing and expanding CBE – BIRR mobile money service

Based on the survey result, challenges and opportunities of implementing and expanding CBE – BIRR mobile money service by commercial bank of Ethiopia are identified and discussed as follows.

4.3.1 Challenges of implementing and expanding CBE – BIRR mobile money service

A total number of 5 questions on challenges of implementing and expanding CBE – BIRR mobile money service in commercial bank of Ethiopia were asked to indicate the extent to which each respondent agrees to corresponding closed ended statements rated on a five-point Likert type scales ranging from '1' "Strongly Disagree" to '5' "Strongly Agree". The summary of the results for all statements or variables under the research study and the result with respect to each statement is indicated below. Accordingly, the researcher tried to interpret the Mean value.

Table 4.3 Challenges of CBE – BIRR mobile money service

| No. | Challenges | N | | Mean | Std. Deviation |
		Valid	Missing		
1	Limitation in building effective agent network	257	-	4.34	0.673
2	Limitation in availability and quality of infrastructure (telecommunication, electricity, software and hardware)	257	-	3.73	0.991
3	Lack of customer awareness	257	-	3.95	0.847
4	Resistance to changes in technology by the society	257	-	4.48	0.621
5	Lack of reliable customer support service	257	-	4.12	0.723
6	Customer lack of confidence with the security aspects	257	-	3.85	0.948
7	Lack of availability of appropriate Agent Banking channels	257	-	4.02	0.789

There are challenges that affect the implementation and expanding CBE – BIRR mobile money service in commercial bank of Ethiopia. As shown in the above Table 4.3, most respondents agreed that Resistance to changes in technology by the society, Limitation in building effective agent network and Lack of reliable customer support service are the main challenges for implementation and expansion of CBE – BIRR mobile money service, in which mean score are founded 4.48, 4.34 and 4.12, respectively.

The result further revealed that most respondents believed that lack of availability of appropriate Agent Banking channels, lack of customer awareness, customer lack of confidence with the security aspects and Limitation in availability and quality of infrastructure (telecommunication, electricity, software and hardware) are the other challenges for implementation and expansion of CBE – BIRR mobile money service in commercial bank of Ethiopia, in which mean score are founded 4.02, 3.95, 3.85 and 3.73 respectively.

The next open ended question is about challenges of implementation and expansion of CBE – BIRR mobile money service in commercial bank of Ethiopia accordingly the respondents answer listed as follows.

- ❖ High cost of advertisement to create customer awareness
- ❖ Establish trusted relationship with the Agents
- ❖ 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.
- ❖ Product Image in the Society due to Agent inappropriate act.
- ❖ Managing the Risk like Technological related risks, Infrastructure and Software Application Risks, IT operational risks.

4.3.2 Opportunities of implementing and expanding CBE – BIRR mobile money service

A total number of 6 questions on opportunities of implementing and expanding CBE – BIRR mobile money service in commercial bank of Ethiopia were asked to indicate the extent to which

each respondent agrees to corresponding closed ended statements rated on a five-point Likert type scales ranging from '1' "Strongly Disagree" to '5' "Strongly Agree".

Table 4.4 Opportunities of CBE – BIRR mobile money service

NO.	Opportunities	N		Mean	Std. Deviation
		Valid	Missing		
1	Improvement in the banking habit of the society	257	-	4.52	0.614
2	Late adopter opportunities	257	-	4.67	0.568
3	Commitment of the government to strengthen the banking industry	257	-	4.69	0.566
4	Commitment of the government to facilitate the expansion of ICT infrastructure	257	-	4.03	0.687
5	The existence of high demand	257	-	4.21	0.706
6	Increment of educated potential customer	257	-	4.53	0.616

The summary of the results for all statements or variables under the research study and the result with respect to each statement is indicated above. Accordingly, the researcher tried to interpret the Mean value.

The most ranked opportunities identified in this study that large number of respondent agreed on opportunities of implementing and expanding CBE – BIRR mobile money service in commercial bank of Ethiopia is that Commitment of the government to strengthen the banking industry (Mean = 4.69), Late adopter opportunities (Mean = 4.67), Increment of educated potential customer (Mean = 4.53) and Improvement in the banking habit of the society (Mean = 4.52).

Lastly but not least, another opportunities of implementing and expanding CBE – BIRR mobile money service in commercial bank of Ethiopia is The existence of high demand and Commitment of the government to facilitate the expansion of ICT infrastructure. This agreement is based on the responses of the respondents with mean score 4.21 and 4.03 respectively.

The next open ended question is about opportunities of implementation and expansion of CBE – BIRR mobile money service in commercial bank of Ethiopia accordingly the respondents answer listed as follows.

❖ Agency banking is a significant opportunity to reduce transaction costs

- ❖ Enhanced accessibility to banking services so it creates wider market coverage and customer loyalty
- ❖ Play an important role in enhancing cross-selling and price differentiation.

4.4 Factors that affect customers' behavioral intention to use CBE – BIRR mobile money service

4.4.1 Validity and Reliability of Measures

The validity of the instrument used to measure the factors that affect customers' behavioral intension to use CBE –BIRR mobile money service is justified because the measures were developed from a theoretical framework that was derived from an extensive literature review and with the serious stipulation and help of the researcher advisor.

Cronbach's Alpha is a reliability coefficient that indicates how well the items in a set are positively related to one another. In addition to these structured questionnaires with likert-scale would be used to remove unstructured answers. Also Cronbach's alpha will be used to assess the internal consistency of variables in the research instrument. Cronbach's alpha is a coefficient of reliability used to measure the internal consistency of the scale; it represented as a number between 0 and 1. According to Zikmundet al., (2000) scales with coefficient alpha between 0.6 and 0.7 indicate fair reliability.

Table 4.5 Cronbach's alpha

No.	Measures	N of Items	Cronbach's Alpha
1	Perceived ease of use	5	.857
2	Perceived Usefulness	4	.880
3	Perceived Trust	3	.876
4	Perceived Risk	4	.877
5	Intention to Use CBE – BIRR	**3**	.854
7	Over all variables	**19**	**.884**

Source: - SPSS output and own summary

Accordingly, this study's Cronbach's alpha coefficient meets the recommended levels for all measures. The result of the coefficient alpha for perceived ease of use, perceived usefulness, perceived trust and perceived risk shows 0.857, 0.880, 0.876 and 0.877 respectively. Also alpha coefficient for intention to use CBE – BIRR shows 0.854; this indicates good internal consistency and reliability among the items within each factors. The Cronbach's alpha was also calculated for all 19 variables and it shows 0.884.

4.4.2 Test of Multicollinearity

Further, a researcher tests multicollinearity by investigating the Tolerance and Variance Inflation Factor (VIF).A good regression model must not have a multicollinearity problem and that the value of variance inflation factor (VIF) must have a value between 1 and 10 and the tolerance level should be more than 0.2 (SPSS Inc, 2007).

Table 4.6: Multicollinearity Test: Dependent Variable: Intention to use CBE - BIRR

No.	Model	Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
2	Perceived ease of use	.450	2.225
3	Perceived Usefulness	.605	1.654
4	Perceived Trust	.644	1.553
5	Perceived Risk	.625	1.601

Source: SPSS output

As shown on the table above, based on the coefficients output (collinearity statistics), the obtained variance inflation factor (VIF) for all independent variables was found to be between 1 and 10 and tolerance level result shows more than 0.2, which means that there is no multicollinearity problem.

4.4.3 Correlation Analysis

The correlation is used to measure the strength and direction of linear relationships between pairs of continuous variables.

The below Correlation matrix table shows the strength of the association between the four independent variables and intention to use CBE - BIRR. According to the hypotheses, all of the variables were proposed to be inter-correlated.

Table 4.8 correlation result

	Perceived ease of use	Perceived Usefulness	Perceived Trust	Perceived Risk	Intention
Perceived ease of use	1.000				
Perceived Usefulness	.849	1.000			
Perceived Trust	.507	.541	1.000		
Perceived Risk	.612	.852	-.794	1.000	
Intention	.781	.806	.654	.909	1.000

Source: - SPSS output

As per the correlation result above all items have a positive relationship with intention to use CBE - BIRR except perceived risk and perceived trust have negative relationship. The strength of the relationship varies across different variables. The strongest correlation is obtained between intention to use CBE - BIRR and perceived risk with correlation value of 0.909. Based on these result perceived risk contributes more for intention to use CBE - BIRR than others.

❖ Perceived ease of use has been found as positively correlated with perceived usefulness, perceived risk and perceived trust.

❖ Perceived usefulness has been found as positively correlated with perceived ease of use, perceived risk and perceived trust

❖ Perceived risk has been found as positively correlated with perceived ease of use and perceived usefulness.

❖ On the other hand intention to use CBE - BIRR has been found as positively correlated with all four independent variables.

4.4.4 Regression Analysis

Regression analysis was performed in order to test the contribution of the independent variables (perceived ease of use, perceived usefulness, perceived trust and perceived risk) to the dependent

variable (intention to use CBE - BIRR). The results for model summary and evaluates the model for fitness are given in Table 4.9 and 4.10.

Table 4.9 Model Summary

					Change Statistics				
				Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
Model	R	R Square	Adjusted R Square						
1	.841ᵃ	.707	.699	.23220	.707	98.107	4	253	.000
a. Predictors: (Constant), perceived ease of use, perceived usefulness, perceived trust and perceived risk									

This table shows that R-square value is 0.707 which is significant at 5% significant level. This explains that 70.7% of the variation in dependent variable (intention to use CBE - BIRR) is explained by the predictors namely; perceived ease of use, perceived usefulness, perceived trust and perceived risk. Adjusted R-square of 0.764 reveals that model has accounted for 69.9% of the variance in the criterion variable.

 Table 4.10 Coefficient of variables

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	1.594	.205		7.795	.000
	Perceived ease of use	.141	.035	.255	4.037	.000
	Perceived Usefulness	.413	.047	.463	8.760	.000
	Perceived Trust	-.088	.043	-.110	-2.020	.045
	Perceived Risk	.395	.052	.410	7.641	.000
a. Dependent Variable: Intention to use CBE – BIRR						

The magnitude of the relationship is shown using the beta values in the above table 4.10. Based on the result, Perceived Usefulness is the most significant with a beta value of 0.413 to influence the level of respondent intention to use CBE - BIRR. While Perceived Trust has negative beta value of -0.088 but have a significant relationship since p-value (0.045) is less than 0.05.

Perceived ease of use and Perceived risk has significant and positive relationship with respondent intention to use CBE - BIRR.

As per the result the established regression function is:-

IN = 1.594 + 0.141PE + 0.413PU- 0.088PT + 0.395PR

Where: IN= Intention to use CBE - BIRR, PE= Perceived ease of use, PU= Perceived Usefulness, PT= Perceived Trust and PR= Perceived Risk

ANOVA results are given in table 4.11 below; according to Samontaray (2010) the model that has a large regression sum of squares in comparison to the residual sum of squares shows that most of the variation in the dependent variable is considered in the model. When the significant value of the F statistic is less than 0.05 then the independent variables explain dependent variables in an excellent way.

The most important part of table 4.11 is the F-ratio, which is a test of the null hypothesis that the regression coefficients are all equal to zero. Put in another way, this F statistic tests whether the R^2 proportion of variance in the dependent variable accounted for by the predictors is zero and the table also shows the associated significance value of that F-ratio (Field, 2009). For this data, F is 98.107, which is significant at $p < 0.05$ (because the value in the column labeled Sig. is less than 0.05). This result tells us that there is less than a 0.05% chance that an F-ratio this large would happen, if the null hypothesis proposed about F-ratio were true. Therefore, we can conclude that our regression model results is significantly better prediction of respondent intention to use CBE - BIRR and that the regression model overall predicts significantly well.

Table 4.11 ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	21.158	4	5.290	98.107	.000[b]
Residual	8.788	253	.054		
Total	29.946	257			
a. Dependent Variable: Intention to use CBE visa card					
b. Predictors: (Constant), perceived ease of use, perceived usefulness, perceived trust and perceived risk					

Source: - SPSS output

4.4.5 Testing of Hypotheses

This section focuses on discussing the results and evaluating the research hypotheses. In this study, results pertaining to the relationship between four independent variables i.e. perceived ease of use, perceived usefulness, perceived trust and perceived risk and the dependent variable behavioral intention to use CBE – BIRR indicated that not all the hypotheses stated were supported within commercial bank of Ethiopia context.

The summary Table 4.12 below revealed that H1, H2 and H4 has a positive and significant effect on behavioral intention towards using CBE – BIRR mobile money so the hypothesis is accepted and H3 is rejected because the calculated t-statistic value is negative.

The table below is a summary of the hypothesis tests and the conclusions derived from the study.

Table 4.12 Summary of Hypothesis Tests

Hypotheses	Test result
H1	Accept
H2	Accept
H3	Reject
H4	Accept

Source – own summery

CHAPTER FIVE

SUMMARY, CONCLUSION, RECOMMENDATIONS AND SUGGESTION FOR FUTURE RESEARCH

This chapter summarizes the findings and discusses the conclusions drawn from the study also it provides recommendation and suggestions for future study.

5.1 Summary of the Study

The general objective of the study is to assess the challenges, opportunities and factors influence customers' intention to use CBE – BIRR Mobile money service for financial inclusion in Ethiopia.

CBE-BIRR is an agent banking service introduced by Commercial Bank of Ethiopia in accordance with NBE directive number FIS/01/2012. It was in testing phase from June 2017 to December 2017 and became live in December 12, 2017. Commercial Bank of Ethiopia has more than 1,200 branches in Ethiopia and CBE-BIRR is taking advantage of this huge number of networked branches to recruit new agents and customers. Currently commercial bank of Ethiopia had 3,211 CBE-BIRR agents, 589,071 CBE-BIRR customers and mobilized 2.5 million birr. (CBE annual report, June 2018)

The measurements of customers' intention to use commercial bank of Ethiopia CBE – BIRR mobile money service is carried out with the aid of TAM model. But the researcher make some adjustments instead of using copy of the TAM model by adding perceived risk and perceived trust variables in to TAM model variables.

Since this research is quantitative in nature, the quantitative methods was applied to analyze survey data, to assess the challenges, opportunities and factors influence customers' behavioral intention to use CBE – BIRR Mobile money service for financial inclusion in Ethiopia. To accomplish the study objective and to answer the stated research question, descriptive and inferential statistics methods were employed.

The researcher select four branches of CBE i.e Andinet branch, Kazanchis branch, Aware branch and Enderase branch. As September 30, 2018 report of the bank there are 589,071 CBE-BIRR customers in CBE and only 8,375 customers are found in the above selected four branches so this customers were the target population for the research.

The sample branches was selected by using purposive sampling technique, Hence, the total sample size were 382 also research paper employs simple random sampling method to select the respondent. Convenient sampling involves allocating equal chance to the selected elements in the population. The researcher use both primary and secondary sources of data in the study.

Out of the 382 potential respondents, a total of 257 questioners were collected and the remaining 125 were not returned. As we can see from the result most respondents were males (63.42%), while 36.58% were females. according to the survey result, majority of the respondent (184 out of 257) have been using CBE – BIRR mobile money service for less than 6 months and the remaining 64 and 9 respondents have been using CBE – BIRR mobile money service for 6 month – 1 year and over one year respectively.

The other interesting question answered by the respondents is about the activities that the respondent would like to perform by using CBE – BIRR mobile money service and the customer would like to perform Buying airtime for both myself and others, Saving (depositing) into mobile money, Withdrawing from mobile money, Sending money, Receiving money, Checking CBE – BIRR account balance and Change PIN or security number of own CBE – BIRR account

There are challenges that affect the implementation and expanding CBE – BIRR mobile money service in commercial bank of Ethiopia. As shown in the above Table 4.3, most respondents agreed that Resistance to changes in technology by the society, Limitation in building effective agent network and Lack of reliable customer support service are the main challenges for implementation and expansion of CBE – BIRR mobile money service, in which mean score are founded 4.48, 4.34 and 4.12, respectively.

The next open ended question is about challenges of implementation and expansion of CBE – BIRR mobile money service in commercial bank of Ethiopia accordingly the respondents answer listed as follows.

- ❖ High cost of advertisement to create customer awareness
- ❖ Establish trusted relationship with the Agents
- ❖ Product Image in the Society due to Agent inappropriate act.

The most ranked opportunities identified in this study that large number of respondent agreed on opportunities of implementing and expanding CBE – BIRR mobile money service in commercial bank of Ethiopia is that Commitment of the government to strengthen the banking industry (Mean = 4.69), Late adopter opportunities (Mean = 4.67), Increment of educated potential customer (Mean = 4.53) and Improvement in the banking habit of the society (Mean = 4.52).

This study's Cronbach's alpha coefficient meets the recommended levels for all measures. The result of the coefficient alpha for perceived ease of use, perceived usefulness, perceived trust and perceived risk shows 0.857, 0.880, 0.876 and 0.877 respectively. Also alpha coefficient for intention to use CBE – BIRR shows 0.854; this indicates good internal consistency and reliability among the items within each factors. The Cronbach"s alpha was also calculated for all 19 variables and it shows 0.884.

As per the correlation result above all items have a positive relationship with intention to use CBE - BIRR except perceived risk and perceived trust have negative relationship. The strength of the relationship varies across different variables. The strongest correlation is obtained between intention to use CBE - BIRR and perceived risk with correlation value of 0.909. Based on these result perceived risk contributes more for intention to use CBE - BIRR than others.

The regression table shows that R-square value is 0.707 which is significant at 5% significant level. This explains that 70.7% of the variation in dependent variable (intention to use CBE - BIRR) is explained by the predictors namely; perceived ease of use, perceived usefulness, perceived trust and perceived risk. Adjusted R-square of 0.764 reveals that model has accounted for 69.9% of the variance in the criterion variable.

The summary Table 4.12 is revealed that H1, H2 and H4 has a positive and significant effect on behavioral intention towards using CBE – BIRR mobile money so the hypothesis is accepted and H3 is rejected because the calculated t-statistic value is negative.

5.2 Conclusion

Four important questions were raised in this research. These are ; What are the challenges of CBE – BIRR Mobile money service in respect of fostering financial inclusion in Ethiopia?, What are the opportunities of CBE – BIRR Mobile money service in respect of fostering financial inclusion in Ethiopia?, What factors influence customers' intention to use CBE – BIRR Mobile money service in Ethiopia?

Based on the findings for this research, the following conclusions came out clearly regarding these research questions.

Challenges of CBE – BIRR Mobile money service

According to the survey result Establish trusted relationship with the Agents, High cost of advertisement to create customer awareness, resistance to changes in technology by the society, Limitation in building effective agent network and Lack of reliable customer support service are the main challenges for implementation and expansion of CBE – BIRR mobile money service. The result further revealed lack of availability of appropriate Agent Banking channels, lack of customer awareness, customer lack of confidence with the security aspects Product Image in the Society due to Agent inappropriate act and Limitation in availability and quality of infrastructure (telecommunication, electricity, software and hardware) are the other challenges for implementation and expansion of CBE – BIRR mobile money service in commercial bank of Ethiopia.

Opportunities of CBE – BIRR Mobile money service

The most ranked opportunities identified in this study is that Enhanced accessibility to banking services so it creates wider market coverage and customer loyalty, Commitment of the government to strengthen the banking industry, Agency banking is a significant opportunity to reduce transaction costs, Play an important role in enhancing cross-selling and price differentiation, Late adopter opportunities , Increment of educated potential customer and Improvement in the banking habit of the society. Lastly but not least, another opportunities of implementing and expanding CBE – BIRR mobile money service in commercial bank of

Ethiopia is The existence of high demand and Commitment of the government to facilitate the expansion of ICT infrastructure.

Factors affecting customer behavioral intention to use CBE – BIRR mobile money service

The measurements of customers' intention to use commercial bank of Ethiopia CBE – BIRR mobile money service is carried out with the aid of TAM model. But the researcher make some adjustments instead of using copy of the TAM model by adding perceived risk and perceived trust variables in to TAM model variables.

As per the correlation result above all items have a positive relationship with intention to use CBE - BIRR except perceived risk and perceived trust have negative relationship. The strength of the relationship varies across different variables. The strongest correlation is obtained between intention to use CBE - BIRR and perceived risk with correlation value of 0.909. Based on these result perceived risk contributes more for intention to use CBE - BIRR than others.

The regression table shows that R-square value is 0.707 which is significant at 5% significant level. This explains that 70.7% of the variation in dependent variable (intention to use CBE - BIRR) is explained by the predictors namely; perceived ease of use, perceived usefulness, perceived trust and perceived risk. Adjusted R-square of 0.764 reveals that model has accounted for 69.9% of the variance in the criterion variable. The summary Table 4.12 is revealed that H1, H2 and H4 has a positive and significant effect on behavioral intention towards using CBE – BIRR mobile money so the hypothesis is accepted and H3 is rejected because the calculated t-statistic value is negative.

5.3 Recommendations

This study is useful for Commercial bank of Ethiopia, since it has managerial implications. Based on the findings, this study proposes the following recommendations.

❖ Banks should launch campaigns to create direct awareness to potential adopters, issues such as fear of the lack of privacy and security, together with relative advantages of using Agent banking services.

- ❖ Without an adequate development level and quality of a national ICT infrastructure, Agent banking and E-banking adoption and use cannot do well, so Ethio - telecom have to support banking industry by investing on ICT infrastructure development in order to improve service of the telecom.

- ❖ At this time the service is provided only with USSD channel which requires reading and writing skills. In order to tackle this problem the service should be available with voice or other channel to illiterate customers who can't read and write.

- ❖ The bank better continuously review and upgrade the existing system of security to the level that minimize risk and let the customers know the status for their decision and confidence in adoption of new innovation. Using all forms of media (brochures, web pages etc) , the bank tries to present the security used, outline the procedure on how to cope with the problems if any, and provide information on how to use agent banking services safely.

5.4 Limitation and Suggestion for Future Research

This study is limited to selected commercial bank of Ethiopia branches located in selected areas of Addis Ababa. Even though the sector is homogeneous it would be more accurate and inclusive if it covers all areas of the country. Time, cost and lack of enough information from both service providers and customers are among the limitations.

This study explains the factors, challenges and opportunities of CBE – BIRR mobile money service from customer point of view. In addition, a model is developed that can explain the impacts of various factors on actual customers intension to use the service. Further researches can be done by participating customers from different parts of the country and other mobile money service providers to identify additional factors. Lastly the regression result shows that perceived trust has negative relationship with customers' intension to use CBE – BIRR mobile money service which is contradictory with the existing literatures and theories so further study on this is needed to clarify this issue.

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ANNEX 1

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St. Mary's University

School of Graduate Studies

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Research Questionnaire for CBE – BIRR users

Dear Sir/Madam

This research questionnaire is prepared to collect data from the respondents in order to assess the challenges, opportunities and factors influence customers' behavioral intention to use CBE – BIRR Mobile money service. The quality of the result of this research will be based on the accuracy of the information you provided. Eventually, I promise you, the information you will provide me is going to be reported and communicated in aggregate and utmost care will be taken for its confidentiality.

I would like to thank you for your cooperation and allowing me to take a few minutes of your valuable time.

NOTE:-

> ➢ No need of writing your name
> ➢ Your confidentiality maintained sincerely

Part I – General Information

		Put X
1. Sex	A. Male	
	B. Female	
2. Age	A. Between 14 -30	
	B. Between 31-40	
	C. Between 41-50	
	D. Greater than 51	
3. Education Level	A. No Formal or Some primary school	
	B. Primary school completed	
	C. Some high school or Matriculated	
	D. Technical/apprenticeship	
	E. College or University graduate	
4. Income (Birr) within a month	A. No income	
	B. Between: 1 – 999	
	C. Between: 1000 – 1999	
	D. Between: 2000 – 2999	
	E. Between: 3000 – 4999	
	F. 5000 and above	

5. How long have you been using CBE – BIRR mobile money service?

A) Less than 6 months   **B)** 6 month – 1 year   **C)** Over 1 year

6. How frequently do you use CBE – BIRR mobile money service?

A) Daily   **B)** Weekly   **C)** Once in a month   **D)** Never (only registered)

7. Please specify the activities that you perform by CBE – BIRR mobile money service?

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Part II – Question related to challenges and opportunities of implementing and expanding CBE – BIRR mobile money service.

Please indicate the extent you agree or disagree of the Potential challenges of implementing and expanding CBE – BIRR mobile money service.

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree and 5= Strongly Agree

No.	Challenges	1	2	3	4	5
1	Limitation in building effective agent network					
2	Limitation in availability and quality of infrastructure (telecommunication, electricity, software and hardware)					
3	Lack of customer awareness					
4	Resistance to changes in technology by the society					
5	Lack of reliable customer support service					
6	Customer lack of confidence with the security aspects					
7	Lack of availability of appropriate Agent Banking channels					

8. If any, please mention some Potential challenges of implementing and expanding CBE – BIRR mobile money service?

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Please indicate the extent you agree or disagree of the opportunities of implementing and expanding CBE – BIRR mobile money service.

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree and 5= Strongly Agree

NO.	Opportunities	1	2	3	4	5
1	Improvement in the banking habit of the society					
2	Late adopter opportunities					
3	Commitment of the government to strengthen the banking industry					
4	Commitment of the government to facilitate the expansion of ICT infrastructure					
5	The existence of high demand					
6	Increment of educated potential customer					

9. If any, please mention some opportunities of implementing and expanding CBE – BIRR mobile money service?

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Part III - Questions related to factors that affect customers' behavioral intention to use CBE – BIRR mobile money service

Please indicate the extent you agree or disagree of the factors that affect customers' intention to use CBE – BIRR mobile money service.

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree and 5= Strongly Agree

No.	Variables	1	2	3	4	5
	Perceived Ease of Use					
1	I find CBE - BIRR mobile money service easy to use					
2	The registration procedures are easy for me					
3	The interface with CBE - BIRR mobile money is user friendly					
4	It is easy for me to become skillful at using CBE - BIRR mobile money service					
5	CBE - BIRR Mobile money process is easy to remember					
	Perceived Usefulness					
6	I find CBE - BIRR mobile money a useful way of making payment					
7	CBE - BIRR Mobile money service helps save time					
8	I find CBE - BIRR Mobile money service is more convenient and accessible.					
9	I believe the advantages of CBE - BIRR mobile money service would outweigh the disadvantages					
	Perceived Trust					
10	Using CBE - BIRR Mobile money service, I believe my transactions are secured;					
11	Using CBE - BIRR Mobile money service, I believe my privacy is secured;					

12	Using CBE - BIRR Mobile money service, I believe my information is kept confidential					
Perceived Risk						
13	If I lose my mobile phone, I will not lose my money as well					
14	If there is a network problem, my transactions will be affected					
15	It is difficult for my money to be stolen if using CBE - BIRR mobile money service					
16	There is a low risk of other people tampering with my personal information during the transaction					
Behavioral Intention to Use CBE – BIRR mobile money service						
17	I intend to continue to use CBE – BIRR mobile money service					
18	I intend recommending CBE – BIRR mobile money service to others					
19	I enjoy using all available CBE – BIRR mobile money services.					

ANNEX 2

Descriptive statistics of all variables

No.	Perceived Ease of Use	Mean	Std. Deviation	N
1	I find CBE - BIRR mobile money service easy to use	3.78	1.288	168
2	The registration procedures are easy for me	4.24	0.427	168
3	The interface with CBE - BIRR mobile money is user friendly	2.51	1.349	168
4	It is easy for me to become skillful at using CBE - BIRR mobile money service	3.21	1.384	168
5	CBE - BIRR Mobile money process is easy to remember	3.43	1.33	168
	Average Perceived Ease of Use	**3.4345**	**0.76729**	**168**
	Perceived Usefulness			
6	I find CBE - BIRR mobile money a useful way of making payment	4.13	1.253	168
7	CBE - BIRR Mobile money service helps save time	4.44	1.104	168
8	I find CBE - BIRR Mobile money service is more convenient and accessible.	4.16	0.962	168
9	I believe the advantages of CBE - BIRR mobile money service would outweigh the disadvantages	3.52	1.153	168
	Average Perceived Usefulness	**3.8359**	**0.53352**	**168**
	Perceived Trust			
10	Using CBE - BIRR Mobile money service, I believe my transactions are secured;	3.68	0.931	168
11	Using CBE - BIRR Mobile money service, I believe my privacy is secured;	3.11	1.084	168
12	Using CBE - BIRR Mobile money service, I believe my information is kept confidential	4.67	0.473	168
	Average Perceived Trust	**4.006**	**0.47541**	**168**

	Perceived Risk			
13	If I lose my mobile phone, I will not lose my money as well	3.04	1.178	168
14	If there is a network problem, my transactions will be affected	3.92	1.221	168
15	It is difficult for my money to be stolen if using CBE - BIRR mobile money service	3.74	0.736	168
16	There is a low risk of other people tampering with my personal information during the transaction	3.22	1.14	168
	Average Perceived Risk	**3.48**	**0.47541**	**168**
	Behavioral Intention to Use CBE – BIRR mobile money service			
17	I intend to continue to use CBE – BIRR mobile money service	2.6	0.998	168
18	I intend recommending CBE – BIRR mobile money service to others	3.14	1.09	168
19	I enjoy using all available CBE – BIRR mobile money services.	3.51	1.532	168
	Average Behavioral Intention to Use CBE – BIRR mobile money service	**3.4762**	**0.44008**	**168**