

FACTORS INFLUENCING MOBILE BANKING ADOPTION IN ETHIOPIA: A PERSPECTIVE ON COMMERCIAL BANKS CUSTOMERS IN ADDIS ABABA

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This is to certify that the thesis prepared by Nebiyu Yusuf entitled "Factors Influencing Mobile Banking Adoption: A Perspective on Commercial Banks Customers in Addis Ababa". Which is submitted in partial fulfillment for the Degree of Master in Marketing Management complies with the regulation of the University and meets the accepted standards with respect to originality and quality.

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Declaration

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where those stated by reference or acknowledgment, the work presented is entirely my own.

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…….
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Abstract

Most Commercial banks in Ethiopia have implemented Mobile banking technology However; there is a challenge that their effort may not bring much result as it was anticipated. Due to the fact that the number of mobile banking users are still lagged behind. This study therefore focused on examining factors affecting the adoption of mobile banking technology in Addis Ababa. The study was tuned to five constructs, such that, perceived usefulness, perceived ease of use , perceived trust, perceived risk and awareness in determining their effect on intention to adopt mobile banking. A cross-sectional survey design was employed. From which a convenient sample of 384 customers were selected for the study. Data was analyzed using SPSS regression analysis. This study revealed that Perceived Ease of use, Awareness, Trust had a positive impact on mobile banking adoption while perceived risk was found to have a negative impact. Whereas, Perceived Usefulness found no effect on the intention to adopt mobile banking.

Key Words: Commercial banks, Perceived Usefulness, Perceived Ease of use, Trust, Risk Awareness, Mobile banking.

List of Acronyms

ATB - Attitude toward the behavior
CBE- Commercial Bank of Ethiopia
FIS-Financial Institutions
NBE- National Bank of Ethiopia
PU- Perceived Usefulness
PEOU- Perceived Ease of Use
PR- Perceived Risk
PBC- Perceived behavioral control
SPSS- Statistical Package for Social Science
SMS- Short Message Service
MMS- Multimedia Messaging Service
TPB- Theory of Planned Behavior
TAM- Technology Acceptance Model
TRA- Theory of Reasoned Action
WAP- Wireless Application protocol

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Chapter One

1.1 Background of the study

Technology has incredible power to improve people's lives, foster economic growth, and create opportunities for individuals, companies and nations around the globe (GITR, 2015). Firms are developing new and innovative products to be able to maintain existing customers and to attract new markets. Advance in mobile technology have revolutionalize almost every facet of the society from information to education, granting access to an ever growing number of people. Consequently, in this information technology era, mobile banking service is the most common technology which became the part of everyday life for many individuals (Sharma N., 2015). The spread of mobile technology across the globe is one of the most remarkable achievements in the last decades, as a result mobile phones have increasingly becomes tools that consumers use for banking, payment, budgetary and shopping (Sharma N., 2015).

Banking sector is one of the largest financial institutions which are constantly innovating new services for better customer satisfaction and convenience (Sharma Neha, 2015). Thus, banks promote new strategies that facilitate online information sharing and transactions linking banking business to customers through mobile devices. One such innovation is the introduction of mobile banking technology in the banking sector (Oluoch Roselyne Akinyi, 2012). Mobile banking technology is a major force that breaking the geographical, legal, and industrial barriers and has created new products and services (Aboelmaged M.G. and Gebba Tarek R., 2013).

According to Ravichandran Diluxshy and Madana H.Bandaralage and Ayesha H. Madana (2016) the scopes offered in mobile banking services may include facilitate to conduct bank and stock market transactions, to administer accounts and to access customized information. The authors further explained that mobile banking offers the possibility to use e-banking (electronic banking or internet banking) services via a mobile phone. However, the major difference between an electronic and mobile transaction, highlighted by the prefixes "e" and "m", is that electronic banking offers "anytime access", while mobile banking offers "anytime and anywhere access" for business transactions. Therefore, customers using mobile banking have a greater flexibility than users of other electronic banking service channels.

Ravichandra Diluxshy et al (2016) define Mobile banking as, “an application of mobile computing which provides customers with the support needed to be able to bank anywhere, anytime using a mobile handheld device and a mobile service such as text messaging (SMS)”. Thus, it removes space and time limitations for banking activities where one can check account balance or transferring money from one account to another.

In recent studies it was found that while mobile banking and more specifically SMS-based mobile banking applications have become popular in some countries and regions, they were still not widely used (Son Yu C. 2012, Ravichandra Diluxshy et al, 2016). With the recently quick growth in the market of 3G and 4G smart mobile phones, the wireless service delivery channel becomes a promising alternative for firms to create commercial opportunities. Beside the above mentioned benefit, the more the personality of mobile phones over PC’s internet and range of computer like functionality offered by top-the-range devices are leading some observer to speculate that many people in the near future will start to see the mobile phone as an alternate to pc’s (Kharaim Hamza Salim et.al , 2011).

It is averred that earliest mobile banking services were offered over short message service (SMS) banking. Upon the inception of smart phone with WAP support in 1999, the first European bank commenced offering mobile banking on this plat form to their customer (Doline Kiura and Solomon Ngahu, 2012).

In our country, this rapid growth of technology knocking the front door of every organization, where banks in Ethiopia would never be exceptional. In the face of rapid expansion of systems throughout the developed and the developing world, Ethiopian’s financial sector cannot remain an exception in expanding the use of the system (Gardachew, 2010).

Commercial banking industry in Ethiopia has composed of one stated owned and 16 private banks (Birritu, No.119). Though it is true traditional banking has grown steadily over the years, in terms of technological based financial service/product, the Ethiopian banking sector did not fully benefits from ICT in general and mobile banking in particular(Arega Henok, 2014).

However, in spite of such growth recently in the banking sector, the financial service accessibility is still very limited in Ethiopia. For instance the country has one bank branch per every 27,255 during 2016/17 according to the National Bank of Ethiopia quarter magazine (2016/17). Thus, such type of technology will be mutually beneficial for both stakeholders.

After the implementation of mobile banking in Ethiopia, mobile banking users have seen some growth but in terms of transaction and active involvement still has way to go as compared to a majority of customer who prefer banking in traditional way. For example out of 10,573,000 customers in CBE only registered mobile banking users are 458,909 with majority used for notification alarm (CBE, performance review 2015/16).

Table 1. Mobile banking users' growth in the industry

Commercial Banks	Number of mobile banking users					
	2015	2014	2013	2012	2011	2010
Commercial bank of Ethiopia	458,909	110,676	9,236			
United bank	219,388	145,078	12,779			
Dashen Bank	10,100	5,414	5,356	1472	648	520
Bank of Abissinya	9,000					
Wegagen bank	5,536					
Zemen bank	674					
Nib bank	400					
Total	706,022	263,182	29,384	1,472	648	520

Source: National Bank of Ethiopia (2016)

The infrastructure like telecom sector has continued to exhibit remarkable expansion. For example, in 2015/16, the numbers of mobile subscribers increased by 18.4 percent which is 46 million (NBE, 2015/16). Not accompanied by proportional growth on mobile banking users.

1.2 Mobile banking Technology Employed in Ethiopia

Mobile Banking Channels :

1) SMS (short messaging service) mobile banking
2) USSD (Unstructured Supplementary Service Data)
3) XHTML (the Extensible Hyper Text Markup Language) mobile banking
4) Downloadable mobile banking
5) Smart Applications
    a. Android Applications
    b. Windows Mobile 7 and 8

c. iPhone (IOS Application)

1. SMS Mobile Banking Channel

Functionalities:

i. Balance Enquiry: which allows viewing a real time account balances.
ii. Enquiry of mini statement or account history: allows viewing the last six transactions or statements
iii. Account Transfer: which allows to transfer fund from one own account to another own accounts
iv. Payment: which allows payment (transfer) to the predefined beneficiaries
v. Changing PIN: which allows PIN changing
vi. De-subscribe from the service: which gives the option to the customer to discontinue the subscription of mobile banking services
vii. Help:- which list all commands that customer can use to perform mobile banking service in SMS channel.

2. USSD, XHTML, Downloadable and Smart Applications Mobile Banking

Functionalities :

i. My account balance:- which allows viewing the real balances with account currency type, and last 4 digits of customers account numbers. This menu also allows viewing the last 10 transactions.
ii. Own Account Transfer:- This feature enables to transfer from one accounts to another own account
iii. Make Payment to Beneficiary:- This allows to transfer to pre-defined beneficiary
iv. Payment to others:- This allows transferring to any CBE account holder.
v. Local money transfer system (LMTS):- This allows transferring money or initiating local money remittance services to banked/unbanked receiver. The Remitter and the Receiver will get SMS with security code and the Receiver can collect the money from any CBE branch with security code.

The above mobile banking services were adapted from CBE's user manual. The stated benefits and other opportunities are available in mobile banking service. Almost all services type provided by other commercial banks is similar.

However, despite many wireless commercial services increase quickly, the use of mobile banking service is much lower than expected and still used, and the market of mobile banking

still remains very small in comparing to the whole banking transaction (Ravichandra Diluxshy et al, 2016). That is, the wide spread adoption and large usage of cell phones did not reflect on the adoption usage of mobile banking. In other word, Kharim H. S. et al.(2011) stated that, Mobile banking services operations are still in their immaturity, leaving a great deal of opportunity for development.

There is a need to identify major factors influencing mobile banking adoption in order to enhance its usage rate. The wide spread and rapidly increase penetration rates of mobile phones with the low adaptation of mobile banking by commercial banks customers is one of the motivation of this study. In our country, the adoption of this technology still not satisfactory and the banking industry couldn't be able to serve their potential customers as it was displayed in the above table. In addition to this, the observed divergence of research findings in this regard inspired for further investigation. The finding of this study has revealed the reason why potential users avoid using the technology, which will be an input for banks to foster new strategies which promote the acceptance of the service.

1.2 Statement of the problem

Mobile banking has been in use since early 2000s in many parts of the world. Indeed, European banks started using the service in 1999 upon the launch of smart phones (Ravichandra D. et al., 2016). In Ethiopia, commercial banks commence mobile banking service according to NBE report (2016). Some of the early mobile banking technology implementers are Commercial Bank of Ethiopia, United Bank, Bank of Abyssinia, Dashen Bank, Wegagen Bank and Zemen Bank as per NBE directives, FIS/01/2012 (Arega H.,2015).

As it was presented in the previous section mobile banking is associated with many benefits which include reduce time of transaction, reduce the need for physically appear in branches for the service. Against these favorable conditions, however, it is observed on the previous report (Table 1.) that there has been limited acceptance. In other word, fast advances in the wireless technology and the intensive penetration of cell phones have motivated banks to spend large budget on building mobile banking systems, but the adoption rate of mobile banking is still underused than expected(Chain-Son Yu,2012).

According to Arega Henok (2015) mobile banking development in Ethiopia is not fully fledged in terms of extensively utilizing all the mobile services one can get. He added that, of all the types of mobile banking services, most customers of the bank uses notification (alarm inquiry).

Identifying major factors that hindering successful adoption of mobile banking will help those service providers to review their effort and to enhance their communication effectively. However, the situation was challenging due to the fact that the suggested research finding was contradict with each other on some variables.

For instance, Mulualem Worku (2015) studied in specified CBE customers in Addis Ababa found out that perceived usefulness and perceived ease of use have positive relationship with the adoption of mobile banking. On the other hand, perceived risk has negative relationship with the adoption of mobile banking. Another study conducted by Gizachew Kalkidan (2016), found out that the relative advantage, compatibility, perceived trust, perceived usefulness, and perceived risk were major influencing factors for mobile banking adoption. Whereas, to the contrary of the previous research, perceived ease of use were found to have insignificant effect on mobile banking usage for CBE and United bank customers located in Addis Ababa, Ethiopia.

According to Oluoch R. A. (2012), which was studied in Kenyan commercial bank customers revealed that there is no relationship between perceived ease of use (PEOU) and adoption of mobile banking technology. The author concludes that perceived usefulness (PU) was the most significant factor affecting adoption of mobile banking technology. Another study conducted on this issue by Wakungi R. N. (2015) in Kenyans commercial bank customers found out that majority of the respondents revealed that awareness has the most important challenge in mobile banking adoption. The author concluded that service providers should focus on awareness in order to have successful mobile banking adoption.

Thus, this research will fill the gap by integrating technology acceptance model(TAM), innovation diffusion theory(IDT), Perceived risk, Trust and Awareness in order to examine its actual effect on mobile banking adoption behavior. In addition to this, the study were consider four pioneer commercial banks in implementing the technology and their specific retail banking (ordinary) customer's behavior. These segments of customers are those who have saving account. This is more realistic model than previous researches and helpful to bridge the existing

gap. An important question here is why large number of customers did not adopt mobile banking as expected. Such that the inquiry was examining the potential factors that influencing mobile banking adoption in Ethiopia, Particularly in Addis Ababa city commercial banks customers. Answers to this question could help banks to come up with a right solution to their mobile banking users and bases for expanding their customer service and competitive advantage.

1.3 Research question

Based on the above problem statement, the following research questions were examined in the study. Accordingly, the research were focused on examining how the identified factors influencing mobile banking adoption in Ethiopia, particularly those commercial banks customers reside in Addis Ababa.

1.3.1 The main research questions were as follows.

1. What is the effect of Awareness on intention to adopt mobile banking?
2. Will Perceived ease of use have an effect on intention to adopt mobile banking?
3. What is the effect of Perceived Usefulness on intention to adopt mobile banking?
4. Does Perceived Risk affect intention to adopt mobile banking?
5. What is the effect of Trust on intention to adopt mobile banking?

1.3.2. The Specific question will be:

1. What is the direction of relationship between the above listed variables?

1.4 Research Aim and Objectives

The aim of the study was examining the effect of those stated factors (independent variables) on intention to adopt mobile banking (dependent variable) in Addis Ababa, Ethiopia. This study was bounded by the following objectives:

1.4.1 General Objectives

- To examine the effect of awareness on intention to adopt mobile banking.
- To examine the effect of perceived ease of use on intention to adopt mobile banking.
- To assess the effect of perceived usefulness on intention to adopt mobile banking.

- To evaluate the effect of perceived risk on intention to adopt mobile banking.
- To examine the effect of trust on intention to adopt mobile banking.

1.4.2 Specific Objectives

The Specific objectives will be determining the direction of relationship between those independent variables and dependent variable listed above.

1.5 Hypotheses

The following five research hypothesis were developed in order to answer the research question

H_1: PEOU has a significant positive influence on intention to adopt mobile banking.

H_2: PU has a significant positive effect on intention to adopt mobile banking.

H_3: Perceived risk has a significant negative effect on intention to adopt mobile banking.

H_4: Awareness has a significant positive effect on intention to adopt mobile banking.

H_5: Trust has a significant positive effect on intention to adopt mobile banking.

1.6 Significance of the study

The study will help banks to:

- Understand major factors hindering customers to adopt mobile banking successfully.
- Realize the level of their customers' perception on each research dimension.
- Formulate appropriate strategies in implementing this technology.

Beside this, the research will add value for the existing knowledge and bases for further study in the area of interest. The study was unique due to the fact that, it has selected those pioneer banks in implementing the technology and integrated elements from TAM, IDT, Perceived risk, Awareness and Trust with specified commercial bank customers segment.

1.7 Scope/Delimitation of the study

The scope of study was sufficiently defined in order to ensure that the breadth, depth and detail of the study were compatible and sufficient to address the stated goal. The boundaries were determined from the perspectives of conceptual, methodological and target population aspect. The conceptual scope were first identified and properly selected in order to fully explain the study of interest. Davis (1989) stated that adoption of a new information system is determined by perceived usefulness and perceived ease of uses. Kharim H.Salim et.al (2011) suggested that future technology acceptance research must include other variables to increase its predicative power. Thus, Awareness, Trust and Perceived risk were considered together with perceived ease of use and perceived usefulness in predicting intention to adopt mobile banking.

Second, Four Commercial banks in Addis Ababa were selected purposively for this study. Such that CBE, United bank, Dashen bank and Abyssinia bank. The study considers those commercial banks customers in Addis Ababa. Here, the customers are saving account holder and their expected mobile banking transaction were only within their bank account transfer type of transaction. Finally, Explanatory study was used to discuss the relationship between those independent variables and dependent variable. 384 sample respondents were considered for the study. Regression analysis was used to test the hypothesis.

1.8 Limitation of the study

One of the identified limitations of the study was pre-specifying factors affecting mobile banking adoption of commercial banks customers in Addis Ababa. To have better understanding and prediction on the issue, the researcher factor out five major variables which were more representative for the study by reviewing previous research works. The other suspected limitation was on Sample selection strategy. Convenience sampling may applicable if the population is homogeneous (Kothari, 2004). Here, the target population was assumed having similar characteristics, since customers can get the service online from any branch and anywhere for the service.

1.9 Organization of the study

This research is organized into five chapters. Chapter one contains background of the study, statement of the problem, research questions, research objectives, hypothesis of the study, significance of the study, scope of the study and limitation of the study. Chapter two presented a literature review on the existing knowledge about the area of study. Chapter three presented the methodology and research approach employed in the study, including, research design, target population, Sample size and sampling technique, instrumentation and data collection and analysis. Chapter four is all about data analysis and discussion of results. Finally, Chapter five contains summary, conclusions, academic and managerial implication and scope for future research.

Chapter Two

Review of Related Literature

2.1 Introduction

This chapter discusses the overall concepts which were an input for this study by starting with the introduction of mobile commerce, which is narrowed down to mobile banking. The technology employed by banks to carry out mobile banking services will be presented. The adoption will also be discussed in the next section. It goes further to explain TRA, TPB, TAM, IDT, Perceived risk, Awareness, Trust and the formulated concept that was vital for this study.

Reviewing previous researcher works help us to analyze the existing knowledge in the area of interest. The theoretical and empirical findings gave validation to carry out the study and help the researcher to set foundation for the prevailing study. Reviewing the theoretical and empirical aspects will guide the study, which is helpful in bounding mobile banking technology adoption concepts (research objectives), figure out and examining their effect on the successful adoption of mobile banking in our context.

The advent of mobile phone marked the beginning of a revolution where people communicate and it has redefined communication and has reshaped the way services are provided (Dineshwar Ramdhony and Steven Munien, 2013). In addition to this, mobile phone has undeniably brought a paradigm shift which affects both the lives of people and the business environment. These distinctive features have made the mobile phone evolve into a channel conducive for the provision of many services. Many firms are increasingly realizing that there are indeed huge opportunities to be tapped with the mobile phenomena (Dineshwar Ramdhony and Steven Munien , 2013).

The revolution of mobile commerce can be attributed to the popular ownership and use of mobile, personal programmable communication devices, like mobile phones and Personal Digital Assistants(PDAs) like laptops, iPods and palm tops among other emerging communication gadgets (Wakungi R. N.,2015). These allow consumers to interact with one another or businesses in a wireless mode, anytime and anywhere.

Masinge Khumbula (2010) described the use of mobile phone for buying and selling of goods and services is regarded as mobile commerce. This allows customers to make any kind of transaction including service enquiry, transferring of money, buying and selling of goods through internet service on their mobile phone.

Mobile banking is the latest approach used by financial institutions for the provision of financial services through information and communication technology; whereby customers use a mobile phone or mobile device to access banking services and perform financial transactions (Ramdhony Dineshwar and Munien Steven, 2013). Traditionally, the most widespread method of conducting banking transactions has been through offline retail banking. Wireless technology, however, is rapidly changing the way personal financial services are designed and delivered (lee ki soon et al, 2007).

Mobile banking service created new, convenient and fast delivery channel for customers to enjoy banking services from anywhere, anytime. It is also defined as "Mobile banking is refers to provision and availing of banking and financial services with the help of mobile telecommunication devices" (Ravichandra Diluxshy et al, 2016).

2.2 Technologies Employed to Provide Mobile Banking Services

Mobile banking services could be used through more than one channel such as short messaging service/messaging and application download (client-based) and browser based (Tiwari, R. and Buse, S. 2007).

1) SMS-Short Messaging Service

This is where the customers communicate with the bank through their mobile devices by sending an SMS (short messaging service) to the bank. The short messaging service (SMS) works in two ways, and it can be either a pull mode or a push mode. In the push mode, the mobile customer send a text message to the bank which contains a service command with a predefined request code to the bank's specific number. The bank also reply with SMS containing the specific information requested from the bank while the pull mode is when the banks sends a text message to the subscriber (customer) to inform the customer about certain transaction that have just taken place over the account. The message could be in the form of an

MMS (multimedia message service) or SMS (short message service) both work similarly even though the use of SMS is more popular.

2) Client-Based

This method requires the customers to use software installation, and this will serve as a user interface that can allow customers to use the mobile device while offline to access some basic transactions before going online.

Typing details before connecting to the internet could reduce cost. This client based application is particularly useful because it allows customers to stay offline and while preparing transaction such as entry of account details and afterwards the transmission is made by sending out the data, this banking process conducted offline reduces online connection time and cost.

3) Browser-Based

Browser-based customer needs to be connected to the internet to use this service. The interface is generated from the server which is transported to mobile device, and this allows the content to be displayed through the browser. This method is extremely fast depending on the server that the customer is connected to but one its disadvantages is that, it requires the subscriber (customer) to stay online all through the transaction process and could lead to higher cost for the customers.

According to Ravichandra Diluxshy et al. (2016), the use of mobile phones has facilitated the expansion of markets, social business and public service in both developing and developed countries claims that rapid advance in mobile technologies have made mobile banking increasingly important in financial services. The use of mobile banking offers a way of lowering the cost of moving money from place to place. At the same time it brings more users in to contact formal financial services. In addition, fast advances in wireless technology and the intensive penetration of cell phones have motivated banks to spend large budget on building mobile banking system, but, the adoption rate of mobile banking is still underused than expected (Yu Chian-Son, 2012).

2.3 Theoretical Review

The introduction of prepaid cards and the fallen prices of mobile handsets have lead to a rapid spread of mobile phones in the emerging economies (Tobbin, Peter Ebo 2010). This has opened up diverse opportunities to be used over and above voice communication. One of such uses which have emerged lately is the use of mobile phones in financial services.

In the Information Systems literature, Roger's innovation diffusion theory (IDT), Davies' (1989) technology acceptance model (TAM), the extended technology acceptance model (Davis 1989) and the theory of planned behavior have been used for the last two decades to explain possible consumer behavior on adoption and acceptance patterns of new technologies and innovations(Tobbin, Peter Ebo 2010).

Tobbin Peter Ebo (2010) Technology Acceptance model (TAM) of Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) and IDT of Relative Advantage (RA) and Trialability with additional constructs, Perceived Trust (PT) and Perceived Risk (PR), and empirically tested its ability in predicting user behavioral intention of Mobile Money.

The most applied, tested and refined model is the TAM followed by UTAUT, IDT and then TPB. In more recent contributions, researchers have used a number of constructs from all four areas and new constructs from other sources (Tobbin, Peter Ebo 2010). TAM has received praises from earlier researchers on its contribution towards our understanding into consumer behavior. Thus, this study were focused TAM , IDT and the extended dimension Perceived risk , Perceived Trust and Awareness for a better prediction power of intention to adopt mobile banking.

TAM and IDT are extremely similar in some constructs and supplement one another. Some researchers indicated that the constructs employed in TAM are fundamentally a subset of the perceived innovation characteristics and, if integrated, could provide an even stronger model than either standing alone (Tobbin Peter Ebo , 2010).

2.3.1 Theory of Reasoned Action (TRA)

This theory was the foundation for TPB and TAM. According to the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980), performance of a given behavior is primarily determined by the strength of a person's intention to perform that behavior. The intention to perform a given behavior is, in turn, viewed as a function of two factors, namely the person's attitude toward performing the behavior (i.e., one's overall positive or negative feeling about personally performing the behavior) and/or the person's subjective norm concerning the behavior (i.e., the person's perception that his or her important others think that he or she should or should not perform the behavior) (Fishbein Martin and Cyzer Marco, 2003).

Attitudes are a function of behavioral beliefs (i.e., beliefs that performing the behavior will lead to certain outcomes) and their evaluative aspects (i.e., the evaluation of those outcomes); Subjective Norms are viewed as a function of normative beliefs (i.e., beliefs that a specific individual or group has regarding whether one should or should not perform the behavior in question) and motivations to comply (i.e., the degree to which, in general, one wants to do what the referent thinks one should do) (Ajzen and Fishbein's , 1980).

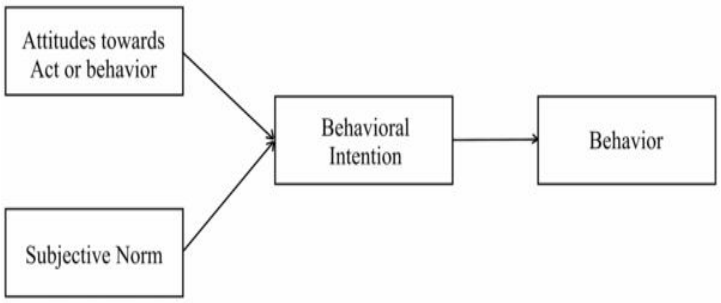


Figure 1.SourceTheory of Reasoned Action (Fishbein & Ajzen, 1980).

2.3.2 Theory of Planned Behavior (TPB)

Theory of planned behavior (TPB) despite the predictability of TRA is strong across the study; it becomes problematic if the behavior under study is not full volitional control (Bargani S. Naimi, 2008). Ajzen (1985) extended the theory of reasoned action by including another construct called perceived behavioral control, which predicts behavioral intention and behavior. The extended model is called the theory of planned behavior (TPB). The theory of planned behavior (TPB) suggested that human behavior is determined by intention to perform the behavior, which is affected jointly by ATB, SN and PBC.

Attitude toward the behavior: Is the general feeling of people about the desirability or undesirability of specific behavior.

Subjective Norm: Express the perceived organizational or social pressure on a person who intends to perform a particular behavior.

Perceived behavioral control: Reflects perception of the ease or difficulty of implementing a particular behavior (Karungu Catherine W., 2014)

TRA and TPB have many similarities. In both models, behavioral intention is a key factor in the prediction of actual behavior. Both theories assumed that human beings are basically rational and make systematic use of information available to them when making decision (Bargani S. Naimi, 2008).

Many existing studies in the context of e-business have shown that individuals attitude directly and significantly influence behavioral intention to use a particular e business application (Mazhar Fatima et al.,2014 and Takele Yitabrek, Sira Zeleke,2013) found that attitude significantly affects intention to adopt mobile banking .Similarly, previous research in an online technology adoption suggested that PBC as a good predictor of usage intention (Tarik bahti, 2007 and Yitabrek Takele and Zelek Sira, 2013). In addition, PBC significantly affects intention to adopt mobile banking.

The theory of planned behavior (TPB) has been successfully applied to various situations in predicting user intentions to use new software. Other researchers also found that TPB has a better predictive power of behavior than TRA (Aboelmaged Mohammed G. and Gebba Tarik R,2013).

2.3.3 Technology Acceptance model(TAM)

Technology acceptance model (TAM), introduced by Davis (1989), and is an adaptation of the theory of reasoned action (TRA) specifically tailored for modeling user acceptance information system. The goal of TAM is to provide an explanation of the determinants of computer acceptance that is general, capable of explaining user behavior a broad range end user computing technologies user populations. In addition to this, the author stated that the purpose of TAM is to provide bases for tracing the impact external factors on internal beliefs, attitudes and intentions. The TAM posits that a user's adoption of a new information system is determined by that user's intention to use the system, which in turn is determined by the user's

beliefs about the system. The TAM further suggests that two beliefs – perceived usefulness and perceived ease of use – are instrumental in explaining the variance in users' intentions (Kharim H.Salim,Al Shoubaki Y.Ellian and Kharim A.Salim,2011). Thus, we have two particular beliefs perceived usefulness (PU) and perceived ease of use (PEOU) for the determination of intention to adopt mobile banking.

According to Kharim H.Salim et.al (2011) future technology acceptance research must address how other variables affect usefulness, ease of use and user acceptance. Therefore, perceived ease of use and perceived usefulness may not fully explain behavioral intentions towards the use of mobile banking, necessitating a search for additional factors that can better predict the acceptance of mobile banking.

2.3.4 Mobile Banking Adoption (IDT)

Another theory which has received similar attention by scholars in explaining consumer behavior towards new technology is the Innovation Diffusion Theory(IDT). Adoption is the acceptance and continued use of a product, service or idea (Roger, 2003). According to the author, consumer goes through a process of knowledge, persuasion, decision, implementation and confirmation before they are ready to adopt a product or service. In other word, innovation adoption is the process through which an individual or other decision making unit passes from knowledge of an innovation, to forming an attitude towards the innovation, to a decision to adopt or reject, implementation of the new idea, and to confirmation of this decision.

Wu Jen Her and Wang Shu-Ching (2004) presents an extended technology acceptance model (TAM) that integrates innovation diffusion theory, perceived risk and cost into the TAM to investigate what determines user mobile commerce acceptance.Furthermore, the central concept of innovation diffusion is ''the process in which an innovation is communicated through certain channels, over time, among the members of a social system.'' However, research has suggested that only the relative advantage, compatibility, and complexity are consistently related to innovation adoption (Wu Jen Her and Wang Shu-Ching, 2004). In addition the authors further related that Relative advantage is similar to perceived usefulness, whereas complexity is similar to perceived ease of use. Compatibility is the degree to which the innovation is perceived to be consistent with the potential users' existing values, previous experiences, and needs.

According to Rogers (2003) there are five perceived characteristics of innovation that can be used to form a favorable or unfavorable attitude toward an innovation, relative advantage, compatibility, complexity, trialability, and observability.

1) Trailability: is the degree to which an innovation may be experimented with on a limited basis.

2) Compatibility: is the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters.

3) Complexity: is the degree to which an innovation is perceived as difficult to understand and use.

4) Risk: The perceived sense of risk concerning disclosure of personal and financial information

5) Relative advantage: is the degree to which an innovation is perceived as better than the idea it supersedes.

By these definitions, innovation diffusion is achieved by how a social system accepts and begins to use (adopt) an idea or a technology. Therefore it could be argued that the determinants of adoption in mobile banking and mobile payment environment should be applicable to mobile money. TAM and IDT are considered to be extremely similar in some constructs and supplement one another Tobbin Peter Ebo (2010).

According to Tobbin Peter Ebo (2010) some similarities can be drawn between RA and PU; Complexity and PEOU to the extent that some researchers identifies the TAM constructs as a subset of the Innovation Diffusion Theory. However, developing different measurements for RA and PU was found to be particularly important in mobile money adoption. However, complexity and PEOU is considered to be too similar to be separated in this study.

Wu Jen-Her and Wang Shu-Ching (2004) presents an extended technology acceptance model (TAM) that integrates innovation diffusion theory, perceived risk and cost into the TAM to investigate what determines user mobile commerce acceptance.

TAM and IDT are extremely similar in some constructs and supplement one another. Some researchers indicated that the constructs employed in TAM are fundamentally a subset of the perceived innovation characteristics and, if integrated, could provide an even stronger model than either standing alone (Jen-Her Wu and and Shu-Ching Wang, 2004).

2.3.5 Perceived Ease of Use

PEOU is "the degree to which a person believes that using a particular system will be free of effort" (Davis, 1989). In mobile money transfer, it includes registration procedures, ease of use of the payment procedure, easy access to customer services, minimal steps required to make a payment, appropriate screen size and input capabilities. Furthermore, it should be accessible on mobile phones with the most basic features and software. Prior researches have concluded that PEOU is a key determinant to consumer behavioral intentions (Tobbin, Peter Ebo 2010).

H1: PEOU has a significant positive influence on intention to adopt mobile banking.

2.3.6 Perceived Usefulness

Perceived usefulness is said to be the degree to which a person thinks that using a particular system will enhance his or her performance. In consumer behavior analysis PU has been well tested as a determinant for a consumer's intention to use mobile services. Also, the extent to which a consumer finds the MM transfer useful may depend on the RA of the service. If the mobility and easier accessibility characteristics of mobile services leads to a consumer belief that the mobile money transfer is better than its predecessors (other money transfer services) then that will affect its perceived usefulness (Tobbin, Peter Ebo,2010).

H2: PU has a significant positive effect on intention to adopt mobile banking.

2.3.7 Perceived Risk

Perceived risk as defined by (Pavlou, 2001), "It is the user's subjective expectation of suffering a loss in pursuit of a desired outcome". The quality of online services offered the possible risk of illegal activities and fraud has always been a concern for both consumer and service providers. When customers are uncertain about product quality, brand and online services, they may worry about an unjustified delay in product delivery, providing payment without receiving

the product and other illegal activities and fraud. The Perceived Risk surrounding an innovation might cause a potential adopter to postpone the decision to either adopt or reject the adoption. Introduced risk as an additional measurement in IT adoption (Ravichandra Diluxshy et al, 2016).

Perceived Risk is defined as a consumer's belief about the potential uncertain negative outcomes from the mobile money transaction. Credit ratings, bank balances and financial data could be changed without the owner knowing during online transactions. Some users perceive potential risks from immature technology. Others hesitate before trusting online transactions and other activities (Wu Jen-Her and Wang Shu-Ching , 2004) .

The following is a summary of the results of this study. In support of TAM, Perceived Ease of Use and perceived usefulness were found to be the most significant determinants to intention to use mobile money transfer in Ghana. Perceived Trust, Trialability and Perceived Risk were also found to significantly affect Intention. As part of financial services, the adoption of mobile money transfer is dependent on consumers' perception on Trust and Risk. Thus, the findings support the traditional view on the effect of risk and trust on usage of financial services. Furthermore, the need for potential consumers to trial the service before adoption was significantly confirmed (Tobbin, P. E. 2010). The study found that customers who believed that mobile banking is unsafe want to adopt mobile banking at much lower rate as compared to those who consider mobile banking safe. The study also further explained that people with higher level of risk tolerance are more eager to adopt mobile banking even after controlling their perception of the safety associated with mobile banking (Arif Imtiaz, Afshan Sahar and Shari Arshian, 2016).

Joubert Janine and Bellev Jean-Paul Van (2013) Trust is pertinent in risky situations and only relevant in contexts where decisions have to be made in situations that involve a degree of (perceived) risk. Since to trust essentially means to take risks and leave oneself vulnerable to the actions of trusted others. E-commerce trust researchers show that increased trust reduces the trustee‟s perception of risk and influences their attitudes towards the trustee, which, in turn, influences the willingness to purchase. The research hypothesis will be:

H3: Perceived risk has a significant negative effect on intention to adopt mobile banking

2.3.8 Perceived Trust

Trust, the degree to which a person believes that others will live up to his expectations and will not take undue advantage of the situation, is one of the most frequently discussed external factor that hinders adoption of technology (Mazhar Fatima et al.,2014). They have figure out from different authors that trust plays important role in diminishing of fears. It helps make possible the reduction in uncertainties and ambiguities related to financial transactions in e-commerce thus enhancing the likelihood of increasing customers adopting of mobile banking.

Mobile Money transfer environment, like all business transactions require an element of trust. And for the purpose of this study, trust is defined as a measure of consumer's level of assurance that the service will be provided with minimum possible hindrance. In addition overall network and service perceived reliability affect consumer's perceived trust in the service. The reliability can be measured by the successful utilization of the service over a period of time with little or no interference. Consumers need to have a belief that the network is reliable (Wu, Jen-Her and Wang, Shu-Ching 2004).

Thus, the research hypothesis will be:

H_5: Trust has a significant positive effect on intention to adopt mobile banking.

2.3.9 Customer Awareness

According to Sathye, M. (1999), the level of information consumers have on mobile banking is one of the major factors affecting the adoption and usage of online banking. In addition rate of adoption of an innovation could be determined by level of awareness of the customers. Since, a mobile banking service is new for many customers and the banks required to create enough awareness to capture the attention of the customers.

H4: Awareness has a significant positive effect on intention to adopt mobile banking.

A number of respondents feel that low awareness of mobile banking services can influence their intention to adopt this service. In addition, lack of knowledge about mobile technology and/or mobile banking especially information related to the applications discourage them from trying the service. One participant mentions that Malaysians are generally not familiar with mobile banking service, and that probably is one of the reasons contribute to low adoption rate at the moment(Ewe Soo Yeong and Yap Sheau Fen, 2012)

Thus, the study were tested the integrated components of technology acceptance model (TAM) of Peou and PU, innovation diffusion theory of perceived risk with perceived trust and awareness to investigate what determines mobile banking users acceptance of the technology.

2. 4. Empirical Review

Even though the penetration of mobile phones among the population continues to grow in significant numbers year on year mobile banking adoption is too low. This argument is evidenced by the fact that the use of mobile banking service is much lower than the initial anticipated and still underused, and the mobile banking service coverage in terms of financial coverage and number of users still remains very far behind as we compared to the entire banking transaction (Arega Henok, 2015).

Some of the empirical research findings are presented here for example; A study conducted by Sathya Swaroop Debasish and Sabyasachi Dey (2015) Perceived Usefulness (PU) 0.157, Perceived Ease of Use (PEOU) 0.163 and Perceived Risk (PR) -0.151 have effect on intention to adopt mobile banking.

Ki Soon Lee (2007) stated that Perceived risk (β=-.24) had an indirect effect on adoption behavior even though it had an insignificant direct relationship with adoption behavior. The researcher concluded that trust had strong effect on the adoption of mobile banking behavior than perceived usefulness of the traditional TAM variable. Consumer's trust of the bank, telecom provider, and wireless Internet had significant influence on their usage of mobile banking.

A study conducted by Ravichandran Diluxshy et al (2016) in Sri lank revealed that PU has a significant relationship with adoption of mobile banking. Further the coefficient of PU is 0.695 which is positive; implying that PU has positively affects adoption of mobile banking. Whereas, PR (-0.681) has a significant relationship with adoption of mobile banking. Further the coefficient of PR is -0.681 which is negative; they conclude that PR has negatively affects adoption of M-banking. The researchers concluded that PU was the most significant factor affecting adoption of M-banking technology.

An empirical study conducted in Pakistan concluded that consumers' intention to adopt mobile banking services was significantly influenced by social influence, perceived risk, perceived usefulness, and perceived ease of use. The most significant positive impact was of social influence on consumers' intention to adopt mobile banking services (Kaziia A. Kabeer and Mannanb Muhammad Adeel, 2013). Another study conducted on the same issue by Wakungi R. Ndinda (2015) in Kenyans commercial bank customers found out that the majority of the respondents(64%) revealed that awareness has the most important effect on mobile banking adoption.

According to Oluoch Roselyne Akinyi (2012) who had studied in Kenyan commercial bank customer, found out that the significant variables that influence mobile banking adoption include Perceived Usefulness ($p = 0.0001 < 0.0005$) and PU ($p = 0.028$). However, PR significantly influence mobile adoption negatively (coefficient = -0.2373). However, Perceived Ease of Use ($p = 0.64 > 0.005$) is not a significant factors. The researchers revealed that there is no significant relationship between perceived ease of use ($P=0.64>0.05$) and adoption of Mobile banking technology. This implies that there is no relationship between perceived ease of use (PEOU) and adoption of Mobile banking technology. From their research PU was the most significant factor affecting adoption of mobile banking technology.

A Case study on selected access bank customer in Ghana by Cudjoe A. G. et al.(2015) found that the majority of the respondents, thus, seventy four percent (74%) believed that, the services provided through their banks using a mobile device must be compatible with their important transaction needs before they can use the self-service. A study conducted by Rumanyika Joel D. (2015) about obstacles towards the adoption of mobile banking in Tanzania. Their observation revealed that poor network coverage (78.6 %), lack of knowledge of mobile banking users (57.1%), lack of enough floats, ATMs breakdown and theft (50%), poor security of mobile network (57.1%), are critical obstacles towards the adoption of mobile banking in Tanzania. The finding identified that facilitation condition is most significant predictor of intention to mobile banking adoption.

A research conducted locally by Gizachew Kalkidan (2016) revealed that Perceived ease of use has emerged in this study as having an insignificant negative influence on mobile banking usage. In addition the researcher concluded that Awareness was found to have an insignificant impact on mobile banking usage. The researcher concluded that having more or less awareness

about mobile banking has no significant impact on usage of mobile banking adoption for customers in Addis Ababa, Ethiopia.

The same study on commercial bank customers in Addis Ababa which was studied by Worku (2015) revealed that perceived usefulness and perceived ease of use have positive relationship with the adoption of mobile banking, whereas perceived risk has negative relationship with the adoption of mobile banking. As it was presented above we have got divergent research finding on some variables which will be required to elucidate.

In fact there is a difference in socio –economic and cultural belief exist between study groups, different researchers found different and unrelated result on some determinant factors which has significant influence on customers' mobile banking adoption. There was also divergent result observed in this specific target population. Thus, this research will propose the following research model for the study.

2.5 Conceptual Frame work / Research Model/

The conceptual framework displayed in Fig2 below, was extracted from previously discussed known theories. It illustrates the causal effect of independent variables on dependent variable. It shows Awareness, perceived usefulness (PU), perceived ease of use (PEOU), perceived risk (PR) and Trust variables have an effect on intention to adopt mobile banking technology.

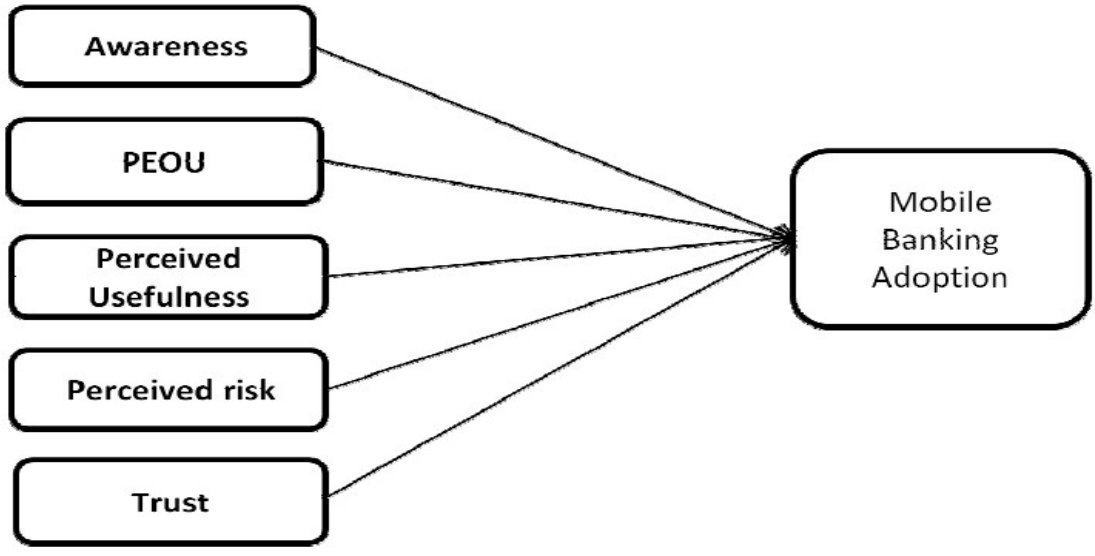


Fig.2. The proposed conceptual model for the study.

Chapter Three

Research Methodology

3.1 Introduction

This section presents the methods which were followed to achieve the research objectives. It highlights the research approach, research design, source of data for the study, data sampling technique and description of data collection tools. Finally, the statistical method which was utilized to analyze the data will be discussed.

3.2 Research Approach

The research approach was quantitative in nature which involves the use of primary data in order to answer the research questions and to achieve its research objective deductively. Survey strategy was used, which is usually associated with the deductive approach and It is a popular strategy in business and management research and is most frequently used to answer who, what, where, how much and how many questions (Saunders Mark, Lewis Philip and Thornhill Adrian, 2009). Surveys are efficient in obtaining information with regards to customers' feelings or opinion on that specific period. Survey studies ask large numbers of people questions about their behaviors, attitudes, and opinions. Some surveys merely describe what people say, they think and do. Other survey studies attempt to find relationships between the characteristics of the respondents and their reported behaviors and opinions (Geoffrey Marczyk, David DeMatteo and David Festinger, 2005).

3.3 Research Design

Here, the research strategies, research choices and time horizons are the three layers that can be thought while developing research design that are turning research question into a research project. The way the researcher chooses to answer a research question will be influenced by his research philosophy and approach (Saunders Mark et al, 2009). The author stated that, research questions will subsequently inform the choice of research strategy, choices of collection

techniques and analysis procedures, and the time horizon over which the researcher undertake the research project .

This research was explanatory study that was mainly aimed at examining and identifying the relationship of factors influencing mobile banking adoption behavior in the context of commercial banks customers in Addis Ababa. Saunders Mark, Lewis Philip and Thornhill Adrian (2009) stated that explanatory research seeks to establish relationship that exists between variables, that is, to identify how one variable affects the other; it also seeks to provide an explanation to the causes and/or effects of one or more variables. In addition, studies that establish causal relationships between variables may be termed explanatory research. Furthermore, the study was cross-sectional because it focuses on a particular phenomenon at a specific period of time as opposed to longitudinal research which focuses on the phenomenon successive time interval. The effect of perceived usefulness, perceived ease of use, perceived risk, trust and awareness on intention to use mobile banking were investigated. In addition, the relationships between dependent and independent variables were also discussed.

3.4 Target Population

For the purposes of this study, the population was commercial banks customers in Addis Ababa. According to Zikmund (2003) a population is any complete group of people, companies, hospitals, stores, college students or the like that share some set of characteristics.

According to National bank of Ethiopia annual report (2016) Commercial Bank of Ethiopia, United bank, Dashen bank and bank of Abyssinia have started the technology early. Major relevant characteristics of the target population were age, education qualification and mobile banking usage. The unit of analysis for the study was individual customers with saving account in their respective banks, because the study entirely focuses on the behavior of individual customers this segment was more representative to deal with the behavior.

3.5 Sample Size

The basic idea of sampling is that by selecting some of the elements in a population, conclusions can be drawn about the entire population (Zikmund, 2003). And hence, the study was focused on commercial banks customers within Addis Ababa City administration. Four commercial banks were identified purposively for this study, three private and one government

owned, namely Commercial bank of Ethiopia (CBE), United bank, Dashen bank and bank of Abyssinia. Focusing on these pioneer banks in the study with an assumption of they have been serving these new platform for their customers relatively longer period of time than others and the proposed constructs have been able to fully determined their customers' behavioral intention.

In the views of personal innovativeness demonstrates a positive-significant relationship towards mobile banking adoption; thus the banks can promote and create awareness to the public through highlighting the benefits or advantages that can be gained from the mobile banking services to stimulate the adoption level among the mobile users. Instead, such promotion also provides better exposure and awareness to the non-mobile banking users to have positive impression towards mobile banking (Dr. Sathya Swaroop Debasish, 2015).

In addition, a quantitative study by Ewe Soo Yeong and Yap Sheau Fen (2012) reveled that awareness is one of the salient factor determining mobile banking adoption. Thus, those pioneer banks would be expected to capture the level of awareness better than those newly implemented the technology and evaluation of the level of awareness were meaningful from the perspectives of relatively longer period providing the mobile banking service.

Sample size is influenced by a number of factors, including the purpose of the study, population size, the risk of selecting a "bad" sample, and the allowable sampling error (Glenn, D. Israel, 1992). In addition to the purpose of the study and population size, the author also reviewed three criteria usually considered to determine the appropriate sample size, i.e. the level of precision, the level of confidence or risk, and the degree of variability in the attributes being measured.

According to Zikmund (2003) sample size has a direct influence over the accuracy of the research findings. To determine a suitable sample size, it is necessary to specify the variation or standard deviation of the population, magnitude of acceptable error and confidence level. A minimum of 384 sample respondents required for researchers normally work to a 95 per cent level of certainty and 100,000 plus number of population. This means that if sample was selected 100 times, at least 95 of these samples would be certain to represent the characteristics

of the population (Saunders M, 2009). Thus, 384 sample respondents were involved in the study.

3.6 Sampling Techniques

Developing a sampling frame was difficult as it requires banks to make available confidential information about their customers. This is something they would not do. Since there is no sampling frame, non-probability sampling was used. In other word, limited resources or the inability to specify a sampling frame may dictate the use of one or a number of non probability sampling techniques (Saunders Mark, 2009).

Purposive/judgment sampling technique was used to select those pioneer banks in implementing the technology. Being pioneer in the technology means it has a ground for the researcher to claim why peoples resist to this technology. The reason behind this assumption is that those pioneer banks have sufficient time to create awareness and able to change their customer attitude in order to flourish the technology. Respective branches were selected based on convenience sampling technique. Proportional sample respondents was selected from each banks based on their number of branch. Then, sample respondents were selected from respective branches by way of approaching customers who visit the branch accidentally with the help of respective branches staffs. Under convenience or accidental sample selection sample was identified primarily on the basis of its relative ease of access or convenience; for example, market developments research (IFC, 2009).

Table 2 Sample commercial banks branch network in Addis Ababa

S.No	Commercial Banks	Number of Branches in Addis Ababa	% Branch out let	Sample respondents
1	CBE	262	52.3	201
2	Dashen bank	68	13.6	52
3	United bank	77	15.4	59
4	Abissiniya bank	94	18.7	72
Total		501	100	384

Source: NBE (2016/17) 1st quarter report

Based on the number of branches operating by the respective banks in Addis Ababa, proportional sample respondents were selected for the study. Using convenience sampling six branches were selected in order to allocate those pre-specified sample respondents.

Table3 Sample respondents allocation per branch

CBE	Goffa sefer	67
	Nifas silk	67
	China Africa	67
Dashen bank	Beklobet	52
United bank	Yosef	59
Abissiniya	Adey Abeba	72
Total		384

3.7 Instrumentation, Data Collection and Analysis

3.7.1 Development of Instrument

The data collection instrument was entirely of closed-ended. The questioners have twenty eight (28) items in two parts. The first part have six questions about respondents general information and the remaining 22 items concerning on individuals perception towards mobile banking adoption. To ensure success, the questionnaires were short and simple, with questions moving from easy to more difficult ones are recommended (Kothari, 2004). The questions were assumed to capture data in line with the study objectives. Furthermore, to be consistent with previous research questionnaires were adapted from related literature and modified to our context.

According to Zikmund (2003), using a Likert scale allows the respondents to indicate their attitudes by checking how strongly they agree or disagree with the constructed statements. The questionnaires were distributed to sample respondents in order to have primary data from the respondents. A five point likert scale were used, where 1=strongly Disagree (SD), 2=Disagree (D), 3 = Not Sure (NS), 4 = Agree (A), and 5=strongly Agree (SA) were applied to measure the respondents' view concerning statements on those constructs which was briefly discussed in the literature and the conceptual model. Refer the developed questionnaire for this study at the Appendix A.

3.7.2 Data Collection

Primary data were collected from sample respondent. Structured questionnaires were applied to obtain primary data from the respondents. The questionnaires were administered to those sample respondents in order to have their opinion regarding to intention to adopt mobile banking.

3.7.3 Reliability

Before conducting the actual survey, a pre-testing (pilot study) were conducted to validate the instrument. According to Zikmund (2003), a pre-testing study provides an opportunity for the researcher to determine whether the respondents had any difficulty on understanding the questionnaire. Pre-testing has an opportunity to check whether there were any ambiguous or biased questions (Zikmund, 2003).

To check the reliability of the test items 20 questionnaires were distributed for respondents. The respondents were asked if they have any problems or suggestion regarding the questionnaire. The respondents were encouraged to be open and free in giving suggestion for improvement. Their recommendation and suggestion were accepted. Finally, the observed data were tested using Cronbach's alpha test for the reliability of the items that make up the questionnaires. The Cronbach's alpha values for pilot survey were summarized in data analysis part table 5.

3.7.4 Data analysis

The data analysis procedures were editing of raw data, classification, coding of responses according to class intervals and tabulation. Descriptive statistics was used to find out demographic and general characteristics of the respondents. Summarized data were presented in the form of frequency tables, cumulative tables, percentage and bar chart. The quantitative data were analyzed using SPSS software package. Multiple linear regression analysis was applied to identify the relationship between the dependent and independent variables and to test the research hypothesis.

Descriptive analysis: descriptive statistics output were presented by tables, frequency distributions, percentages and charts to analyze demographic characteristics of the respondents. The results were obtained through SPSS software version16.0.

Pearson Correlation analysis: In this study Pearson's correlation coefficient were used to determine the relationships between explanatory variables (Awareness, Perceived Usefulness,

Perceived ease of Use, Perceived risk, Trust) and explained variable (Intention to Adopt mobile banking).

Multiple Regression Analysis: Multiple regression analysis was used to examine the effect Awareness, Perceived Usefulness, Perceived ease of Use, Perceived risk, Trust on Intention to Adopt mobile banking. In addition to this regression analysis were used to test the research hypothesis.

Regression functions

The equation of multiple regressions was built around the two sets of variables, namely dependent variables (Intention to adopt) and independent variables (Awareness, Perceived Usefulness, Perceived ease of Use, Perceived risk, Trust).

Table 4 summary on regression variables

Independent variables	Dependent variable
Awareness (X_2)	Intention to Adopt Mobile banking (Y)
Perceived Usefulness (X_3)	
Perceived Ease of Use (X_4)	
Perceived Trust (X_5)	
Perceived Risk (X_6)	

The proposed research model was represented by the following equation:

Y = B1+B2X2 + B3 X3 + B 4X4 + B5X5 + B6X6 ; Where Y is the dependent variable- Intention to adopt mobile banking

X2, X3, X4, X5, and X6 are the explanatory variables

B1 is the intercept term- it gives the mean or average effect on Y of all the variables excluded from the equation, although its mechanical interpretation is the average value of Y when the stated independent variables are set equal to zero.

B2, B3, B4, B5, and B6 refer to the coefficient of the respective independent variable which measures the change in the mean value of Y, per unit change in their respective independent variables.

Chapter Four

Data Analysis and Discussion of findings

4.1 Introduction

This chapter provides an overview of the performed analyses on the observed survey data. The basic variables that were intended to measure customers' perception on mobile banking adoption were organized in to five constructs. The proposed hypotheses were tested and its statistical outcomes discussed. In order to test the hypothesis, the significance level is set at 95 % confidence interval, since sample size was already specified for this level of precision in the methodology section. The fundamental analyses were performed by using Statistical Software Package SPSS 16.0.

The observed survey data were analyzed and presented in meaningful form that can be easily understandable. First, sample respondents demographic characteristics were discussed using frequency distribution table, bar charts. Respondent's perception regarding to the respective dimensions/constructs/ were also discussed. Before applying regression analysis the basic assumptions were tested. Then regression analyses were carried out on the survey data to test the research hypothesis.

A total of 384 questionnaires were given to the respondents, 360 responses were received but only 317 questionnaires were used for analysis yields 82.6 % of response rate. This is performed based on the basic response rate calculation; where dividing the number of people who submitted a completed survey by the number of people the researcher attempted to contact. In this case 80%-85% response rate regarded as good (M. G. Saldivar, 2012). Sample respondents were selected from four commercial banks in Addis Ababa (i.e Commercial Bank of Ethiopia, Dashen bank, United bank and Bank of Abyssinia). The study was entirely focused on examining the effect of Awareness, Perceived Usefulness, and Perceived ease of Use, Perceived Trust and Perceived Risk on intention to adopt mobile banking.

Prior to the analysis procedure data screening and cleaning was performed on the collected data set. In this procedure those entered variable scores were checked, where the observed data were lies on the specified unit of measurement. The observed SPSS output assured for next step of data analysis procedure.

4.2 Reliability Analysis

Reliability refers to the consistency or dependability of a measurement technique, and it is concerned with the consistency or stability of the score obtained from a measure or assessment over time and across settings or conditions. If the measurement is reliable, then there is less chance that the obtained score is due to random factors and measurement error (Geoffrey Marczyk ,David DeMatteo and David Festinger, 2005).

Reliability is defined as the degree to which measures are free from error and therefore yield consistent result (Zikmund , 2003). A reliability coefficient of zero indicates that the test scores are unreliable on the other hand the higher reliability coefficient the more reliable or accurate the test score. The chronbach's alpha test of reliability is used to test of reliability of the instrument used for the study. The reliability test was done on those five identified constructs (dimensions) scales and the scores are displayed in the table 5. below.

Table 5 Scale Item reliability statistics

Dimension	Pilot test Cronbach's Alpha	Cronbach's Alpha	Number of Items
Awareness	0.900	0.864	4
Perceived Usefulness	0.694	0.799	4
Perceived Ease of Use	0.917	0.853	3
Perceived Risk	0.930	0.804	4
Perceived Trust	0.717	0.898	3
Intention To Adopt	0.823	0.889	4
Overall Reliability	0.757	0.786	22

Source: Own survey data (2017)

To test the reliability of the scale from each variable, a Cronbach's Alpha was used to measure the internal consistency of the variables (items). The cut-off point used in this analysis was a maximum value of 0.9 for α maximum alpha value of 0.90 has been recommended (Tavakol Mohsen and Dennick Reg, 2011). The output of the reliability test shows all variables scores have good result for Alpha. These values (table) above met the requirement and assure the items were measuring the intended construct.

After confirming the reliability of each dimension above, next, respondents profile was discussed using descriptive statistics. The relationship between dependent and independent variables were identified and the research hypothesis was tested using multiple regression techniques with the help of SPSS software.

4.3 General characteristics of respondents

In order to observe the profile of sample respondents a set of basic questions were asked. Frequencies were used to determine how often respondents made a certain response in answering the respective questions, and these gave background information about the sample respondents general characteristics. The demographic detail shows gender, age, occupation, educational status, monthly income level and mobile banking usage.

Table 6 General characteristics of respondents

Characteristics of respondents		Frequency	Valid Percent	Cumulative Percent
Gender	Male	192	**61.1**	61.1
	Female	122	**38.9**	100
	Total	314	100	
Age	Less than 20 year	6	**1.9**	1.9
	20-30 years	98	**31.5**	33.4
	31-40 years	147	**46.3**	79.7
	41-50 years	51	**16.4**	96.1
	Older than 50 years	12	**3.9**	100
	Total	314	100	
Education Qualification	High school or Below	115	**37.3**	37.3
	Diploma	120	**38.3**	75.6
	Degree	70	**22.4**	98.1
	Masters or above	6	**1.9**	100
	Total	311	100	
Occupation	government	140	**46.5**	46.5
	Private	96	**29.9**	76.4
	Other	71	**23.6**	100
	Total	307	100	
Monthly Income	Less than 3,000 birr	65	**21.1**	21.1
	3,001 to 6,000 birr	131	**42.5**	63.6
	6,000 to 10,000	86	**27.3**	90.9
	Above 10,000 birr per Month	28	**9.1**	100
	Total	308	100	
Mobile Banking usage	Yes	130	**32.2**	32.2
	No	187	**67.8**	100
	Total	317	100	

Source: Own Survey data (2017)

4.3.1 Respondents Gender distribution

As it was displayed on the above table 6, from 314 respondents who completed the gender information 192 were men which comprise 61.1% of the study participants and the number of female participants accounted for 38.9 % of the total participant in the study. The output revealed that there was a wide gap between men and women bank customers. This is economic implication of gender inequality in the country.

4.3.2 Respondents Age

Table 6 above, shows that 46.3% of respondents' ages were between 31-40 years, followed by those between 21 and 30 years which constituted 31.5% while the other age group lies between 41 to 50 years lagged behind the two age groups with 16.4 % and the rest two extreme ends accounted for less than 6%. The implication of the result is that most of commercial banks customers are potential work force between the age group 20-40 and these segment will be a potential target market of the mobile banking service channel.

4.3.3 Education Level

Respondents were also requested to indicate their educational level and their responses were summarized as shown in table 6 above. The finding revealed that 37.3 % of the respondents indicated that they had some high School education or below, 38.3 % indicated that they have diploma education, 22.4 % indicated that they have Bachelor‘s degree education and 1.9% indicated that they have masters. We can therefore deduce that majority of the respondents (63 %) were educated.

4.3.4 Mobile banking Usage

As it was displayed in the above table 6, the majority 67.8% of the respondents were non-users whereas, 32.2% of the respondents in the study were mobile banking users. The study revealed that the numbers of non user were twice as much as the number of users. In order to have adequate information on mobile banking users, additional investigation will required on the type service do they have frequently engaged. These may further decline the active mobile banking users, because someone may feel that notification alarm /balance inquiry as a major mobile banking function.

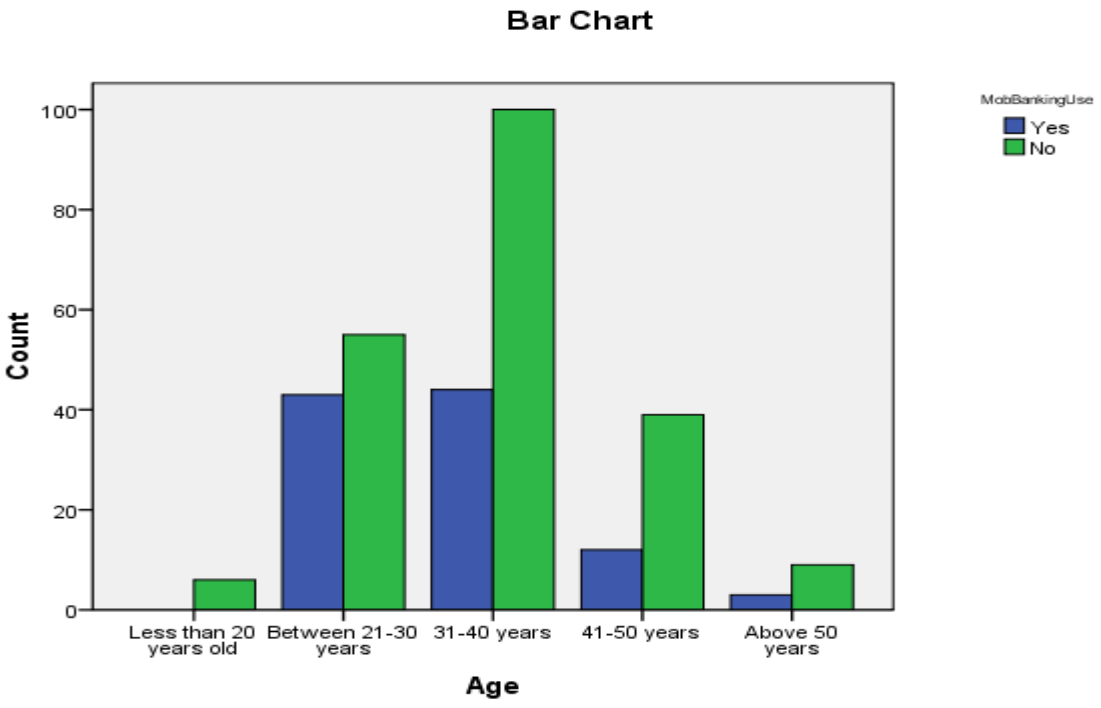
4.3.5 Respondents Income Level

Sample respondents were requested to indicate their income levels. From the sample respondents 21.1% indicated that they have earned below 3,000 birr, 42.3 % indicated that they have monthly income between 3,000 and 6,000; 27.7% replied that they have earned between 6,000 and 10,000; whereas, 9.1% indicated that they have earned above 10,000 Birr. The data revealed that the majority of saving account holders monthly income fall between 3,000 and 6,000.00 birr.

4.3.6 Cross Tabulation between Age, Education qualification and Mobile banking usage

As it was revealed in the fig.3 below, within each respective age group the number of non mobile banking users was larger than the number of users. But, from those five age categories, the second age groups (21-30) have equivalent proportion of users and non users existed. Whereas, the others segments, the number of non users were more than twice the number of users. Thus, we can conclude that this age category (21-30) is innovative in adopting new technologies.

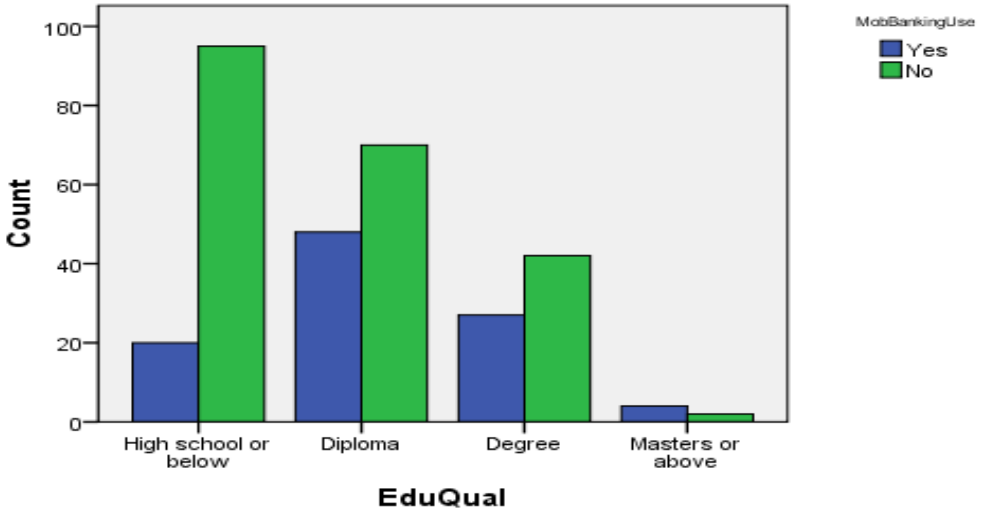
Fig 3. Age Vs Mobile banking usage



Source: Own survey data (2017)

In addition to this, the study was investigated the relation between education qualification and mobile banking usage. The study has revealed that the number of respondents who didn't use mobile banking was decrease proportionally as the level of education qualification increase. Banks should develop an interface that is compatible with each group.

Fig. 4. Education qualification Vs mobile banking subscription



Source: Own survey data (2017)

4.4 Response Item analyses

The response item analysis was carried out in order to observe relative stance of respondents. For simplicity the discussion were given on percentages of response lies on the middle, on the right and on the left separately.

4.4.1 I receive enough information about mobile banking service.

Table 7. I receive enough information about mobile banking service.

			In general, I receive enough information about mobile banking service.					*Total*
			Strongly Disagree	*Disagree*	*Not Sure*	*Agree*	*Strongly agree*	
Mobile banking use	Yes	Count	6	5	31	44	16	102
		% MB use	5.9	4.9	30.4	43.1	15.7	100
		% column	26.1	15.2	24.2	43.6	50.0	32.2
		% of Total	1.9	1.6	9.8	13.9	5.0	32.2
	No	Count	17	28	97	57	16	215
		% MB use	7.9	13.0	45.1	26.5	7.4	100
		% column	73.9	84.8	75.8	56.4	50.0	67.8
		% of Total	5.4	8.8	30.6	18.0	5.0	67.8
Total		Count	23	33	128	101	32	317
		% MB use	**7.3**	**10.4**	**40.4**	**31.9**	**10.1**	100
		% column	100.0	100.0	100.0	100.0	100	100
		% of Total	7.3	10.4	40.4	31.9	10.1	100

Source: Own survey data (2017)

Respondents were asked about the level of information provided by their service provider. From the total respondents 42.0 % were positively replied that the information provided by their service provider were sufficient. On the other hand, 17.7 % of the respondents have revealed that the information were insufficient. Whereas, a significant number (40.4%) were not sure about the condition. Here less than 50% of the total respondents agreed about the level of information. This has its own problem on mobile banking adoption.

4.4.2 I think mobile banking is useful in conducting banking activities

Respondents were asked about the usefulness of mobile banking service (table 8) around 88.9 % of the respondent favoring its usefulness. In addition to this, almost less than 1% of respondents were opposed mobile banking usefulness. Whereas, 10.4% of respondents were not sure about its usefulness. This is favorable opportunity for banks to induce more mobile banking users.

Table 8. I think mobile banking is useful in conducting banking activities.

			I think mobile banking is useful in conducting banking activities.				
			Disagree	Not sure	Agree	Strongly Agree	Total
Mobile banking use	Yes	Count	0	10	54	38	102
		% MB use	0	9.8	52.9	37.3	100.0
		% column	0	30.3	26.7	47.5	32.2
		% of Total	0	3.2	17.0	12.0	32.2
	No	Count	2	23.0	148.0	42.0	215.0
		% MB use	0.9	10.7	68.8	19.5	100.0
		% column	100.0	69.7	73.3	52.5	67.8
		% of Total	0.6	7.3	46.7	13.2	67.8
Total		Count	2.0	33.0	202.0	80.0	317.0
		% MB use	**0.6**	**10.4**	**63.7**	**25.2**	100.0
		% column	100.0	100.0	100.0	100.0	100.0
		% of Total	0.6	10.4	63.7	25.2	100.0

Source: own survey data (2017)

4.4.3 Overall, I think mobile banking is easy to use.

Table 9 below, respondents were asked their perception regarding how simple was utilizing mobile banking. This question was designed to capture respondents' perception on its simplicity while using mobile banking.

The majority of the respondents (74.4%) have thought that using mobile banking is simple. On the other hand a total of 1.9 % respondents were thought that using mobile banking is difficult and 23.7% couldn't specify its difficulty. Here we can assume that users are familiar with the mobile phone and perceived that mobile banking is easy to use.

Table 9. I think mobile banking is easy to use.

			Overall, I think mobile banking is easy to use.				Total
			Disagree	Not sure	Agree	Strongly Agree	
Mobile banking use	Yes	Count	2	16	43	41	102
		% MB use	2.0	15.7	42.2	40.2	100
		% column	33.3	21.3	27.4	51.9	32.2
		% of Total	0.6	5.0	13.6	12.9	32.2
	No	Count	4.0	59.0	114.0	38.0	215.0
		% MB use	1.9	27.4	53.0	17.7	100.0
		% column	66.7	78.7	72.6	48.1	67.8
		% of Total	1.3	18.6	36.0	12.0	67.8
Total		Count	6.0	75.0	157.0	79.0	317
		% MB use	**1.9**	**23.7**	**49.5**	**24.9**	**100**
		% column	100.0	100.0	100.0	100.0	100.0
		% of Total	1.9	23.7	49.5	24.9	100.0

Source: own survey data (2017)

4.4.4 I think mobile banking services are more risky than other banking

The following table 10, summarized respondents' perceived risk while using mobile banking. From the total respondents 23.3 % perceived that mobile banking transactions have certain level of risk. To the contrary, 44.2 % perceived that there is no significant risk associated while using mobile banking. The other groups 32.5 % were neutral, such that they were not sure about the level of risk involved while using the service. On the other hand, as it was reveled in the table below there is a significant difference between users and non users perception towards risk associated with mobile banking.

Table 10 I think mobile banking services are more risky than other banking option.

		I think mobile banking services are more risky than other banking option.						Total
			Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree	
Mobile banking use	Yes	Count	25	41	21	12	3	102
		% MB use	24.5	40.2	20.6	11.8	2.9	100.0
		% column	54.3	43.6	20.4	20.0	21.4	32.2
		% of Total	7.9	12.9	6.6	3.8	0.9	32.2
	No	Count	21.0	53.0	82.0	48.0	11.0	215.0
		% MB use	9.8	24.7	38.1	22.3	5.1	100.0
		% column	45.7	56.4	79.6	80.0	78.6	67.8
		% of Total	6.6	16.7	25.9	15.1	3.5	67.8
Total		Count	46.0	94.0	103.0	60.0	14.0	317.0
		% MB use	**14.5**	**29.7**	**32.5**	**18.9**	**4.4**	**100.0**
		% column	100.0	100.0	100.0	100.0	100.0	100.0
		% of Total	14.5	29.7	32.5	18.9	4.4	100.0

Source: own survey data (2017)

4.4.5 The bank's mobile banking is totally trustworthy.

As it was depicted in the table 11 below, 37.3 % of the respondents was positively agreed that the service provider was trust worthy. Whereas, 34.7% of respondents were revealed that they were not sure about the trustworthiness of the service. On the other hand 28.1 % of respondent were not relied on their service provider. The data depicted that the level of trust on banks mobile banking technology was low.

Table 11. The bank's mobile banking it is totally trustworthy

			The bank's mobile banking it is totally trustworthy.					Total
			Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree	
Mobile banking use	Yes	Count	5	16	37	33	11	102
		% MB use	4.9	15.7	36.3	32.4	10.8	100.0
		% column	29.4	22.2	33.6	34.7	47.8	32.2
		% of Total	1.6	5.0	11.7	10.4	3.5	32.2
	No	Count	12.0	56.0	73.0	62.0	12.0	215.0
		% MB use	5.6	26.0	34.0	28.8	5.6	100.0
		% column	70.6	77.8	66.4	65.3	52.2	67.8
		% of Total	3.8	17.7	23.0	19.6	3.8	67.8
Total		Count	17.0	72.0	110.0	95.0	23.0	317.0
		% MB use	**5.4**	**22.7**	**34.7**	**30.0**	**7.3**	**100.0**
		% column	100.0	100.0	100.0	100.0	100.0	100.0
		% of Total	5.4	22.7	34.7	30.0	7.3	100.0

Source: Own Survey data (2017)

4.4.6 I will adopt mobile banking as soon as possible

From the total respondents 67.5 % have positive feeling that they will adopt mobile banking for their day today activities in the future as it depicted in the table 12 below. To the contrary, a total of 2.5 % have a negative feeling towards using mobile banking in the future. On the other hand 30% respondents were not sure about their future action. Among the two set of respondents, mobile banking users were relatively higher degree of desire to resume the service. Therefore, banks are recommended to capture their customer's intention by removing those discouraging factors.

Tabel 12. I will adopt mobile banking as soon as possible

			I will adopt mobile banking as soon as possible					Total
			Strongly Disagree	Disagree	not sure	agree	Strongly agree	
Mobile banking use	Yes	Count	-	4	15	46	37	102
		% MB use	-	3.9	14.7	45.1	36.3	100.0
		% column	-	57.1	15.8	31.7	53.6	32.2
		% of Total	-	1.3	4.7	14.5	11.7	32.2
	No	Count	1	3.0	80.0	99.0	32.0	215.0
		% MB use	0.5	1.4	37.2	46.0	14.9	100.0
		% column	100.0	42.9	84.2	68.3	46.4	67.8
		% of Total	0.3	0.9	25.2	31.2	10.1	67.8
Total		Count	1.0	7.0	95.0	145.0	69.0	317.0
		% MB use	**0.3**	**2.2**	**30.0**	**45.7**	**21.8**	**100.0**
		% column	100.0	100.0	100.0	100.0	100.0	100.0
		% of Total	0.3	2.2	30.0	45.7	21.8	100.0

Source: Own survey data (2017)

4.5 Comparison between mobile banking users and non users

Table 13. mean value of constructs/dimension/

Mobile banking use		Awareness	Perceived Usefulness	Perceived Ease of Use	Perceived Risk	Perceived Trust	Intention to Adopt
Yes	Mean	**3.66**	**4.23**	**3.99**	**2.33**	**3.36**	**4.03**
	N	102.00	102.00	102.00	102.00	102.00	102.00
	Std. Deviation	0.85	0.61	0.72	1.03	0.97	0.72
	% of Total N	32.18	32.18	32.18	32.18	32.18	32.18
No	Mean	**3.22**	**4.04**	**3.60**	**2.83**	**3.07**	**3.64**
	N	215.00	215.00	215.00	215.00	215.00	215.00
	Std. Deviation	0.81	0.56	0.75	1.02	0.95	0.72
	% of Total N	67.82	67.82	67.82	67.82	67.82	67.82
Total	Mean	**3.36**	**4.10**	**3.73**	**2.67**	**3.16**	**3.77**
	N	317.00	317.00	317.00	317.00	317.00	317.00
	Std. Deviation	0.85	0.58	0.76	1.04	0.97	0.74
	% of Total N	100.00	100.00	100.00	100.00	100.00	100.00

Source: Own Survey data (2017)

The mean values of sample response were summarized under each constructs /dimensions/.This statistical representation was simple and one can easily deduce the overall position of the respondents. The study revealed on table 13, that there were a perception difference between mobile banking users and non users. From the entire response observed mobile banking users were relatively good position than non users across each dimension. In addition, the overall sample respondents position were measured and value in the table below.

Table 14. Survey dimensions over all Likert value

S.No	Construct	Mean Response	Value
1	Awareness	3.36	Not Sure
2	Perceived Usefulness	4.10	Agree
3	Perceived Ease of Use	3.73	Agree
4	Perceived Risk	2.67	Not Sure
5	Perceived Trust	3.16	Note Sure
6	Intention to Adopt	3.77	Agree

4.6 Multiple Regression Analysis

In order to answer the research objective, Awareness, Perceived Usefulness, Perceived Ease of use, Trust and Perceived Risk dimensions were measured to determine how individual behavioral intention towards mobile banking adoption was influenced. In each dimensions three to four questions were allocated to capture respondents' perception toward mobile banking adoption.

To explore this relationship the researcher utilized the standard multiple regression. This involves all of the independent variables being entered into the equation at once. The results has showed how well this set of variables were able to predict intention to adopt mobile banking; and the result also revealed how much each independent variables associated with the dependent variable, over and above how much the variation of the dependent variable explained by the independent variables.

The assumptions of multiple regression that are identified as primary concern in the research include normality, linearity, independence of errors, homoscedasticity, and collinearity assumptions (Dianne L. Balance, 2012).

4.7 Normality Test

The skewness value provides an indication of the symmetry of the distribution. Kurtosis, on the other hand, provides information about the 'peakedness' of the distribution. If the distribution is perfectly normal the value of skewness and kurtosis is 0, rather an uncommon occurrence in the social sciences (Pallanta Julie, 2005).

Table 15. Skewness and Kurtosis analysis Statistics

Statistics

		Awareness	Perceived Usefulness	Perceived Ease of Use	Perceived Risk	Perceived Trust	Intention To Adopt
N	Valid	317	317	317	317	317	317
	Missing	0	0	0	0	0	0
Skewness		.023	-.108	-.224	.175	-.080	-.105
Std. Error of Skewness		.137	.137	.137	.137	.137	.137
Kurtosis		-.652	.309	-.246	-.671	-.612	-.357
Std. Error of Kurtosis		.273	.273	.273	.273	.273	.273

Source: own survey data (2017)

A common rule of thumb test for normality is to divide Skewness and Kurtosis by their respective standard errors. Skew should be within the -2 to +2 range when the data are normally distributed. Kurtosis is the peakedness of a distribution. The criteria for normality distribution for relaxed assumption within -3 to +3 ranges. (Garson G.David, 2012).

Table15 above, showed the skewness test and kurtosis test of all constructs (i.e. Awareness, Perceived Usefulness, Perceived ease of Use, Perceived Trust, Perceived Risk and Intention to adopt). The skewness and kurtosis value for measurement item were within the recommended range of the assumption, thus, the research sample data is normal.

4.8 Linearity

Testing for non linearity is necessary because correlation, regression and other elements of general linear model (GLM) assume linearity (Garson G.David, 2012).There are different methods for example, ANOVA test of linearity. The author stated that, one can compute an ANOVA table for linear and nonlinear component, if the F significance for nonlinear component is the critical value (eg. <0.05), then there is significant non linearity. Thus, from the ANOVA table value table21 of appendix A, all variables are linear since the significance value is greater than the cutting point.

4.9 Multicollinearity Test

4.9.1 Variance inflation factor (VIF) and Tolerance

Variance inflation factor used in lieu of tolerance as VIF is simply the reciprocal of Tolerance. As a rule of thumb is that VIF>4 and Tolerance < 0.2 when multicollinearity is a problem (Garson G.David, 2012). In this case the entire variables were met the assumption (table 19)

To test multicollinearity, the correlation matrix Table16 below, of the variables was studied to identify the occurrence of multicollinearity. The correlation coefficient is a measure of the closeness of the relationships or association between independent and dependent variables. As a rule of thumb, intercorrelation among the independents above 0.80 signals a possible problem (Garson G.David, 2012). Therefore, there is no evidence of significant multicollinearity among the research variables.

Table 16. Correlations matrix

		Awareness	PU	PEoU	PR	Trust	Adoption
Awareness	Pearson Corr	1	.401**	.698**	-.580**	.580**	.756**
	Sig. (2-tailed)		0.000	0.000	0.000	0.000	0.000
PU	Pearson Corr	**.401****	1	.404**	-.268**	.241**	.399**
	Sig. (2-tailed)	0.000		0.000	0.000	0.000	0.000
PEoU	Pearson Corr	.698**	**.404****	1	-.629**	.591**	.829**
	Sig. (2-tailed)	0.000	0.000		0.000	0.000	0.000
PR	Pearson Corr	-.580**	-.268**	**-.629****	1	-.564**	-.695**
	Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000
Trust	Pearson Corr	.580**	.241**	.591**	**-.564****	1	.661**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		0.000
Adoption	Pearson Corr	**.756****	**.399****	**.829****	**-.695****	**.661****	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	

**. Correlation is significant at the 0.01 level (2-tailed).

From the above correlation matrix we can deduce that Perceived Ease of use and Intention to adopt mobile banking has highest positive correlation coefficient which is 0.829 at $p<0.05$ level of significant. This result showed that PEoU has significant positive effect on intention to adopt mobile banking technology. Awareness and Trust have significant positive correlation with intention to adopt mobile banking with coefficient of 0.756 and 0.661 respectively at $P<0.05$ significant level. On the other hand, Perceived Risk at correlation coefficient -0.695 has significant negative correlation with intention to adopt mobile banking. Therefore, Awareness, Perceived risk, PEoU, and PT tend to have association with mobile banking adoption.

4.10 Regression Analysis

Here under the first column labeled by R was represented multiple coefficient of correlation between the independent variable (intention to Adopt mobile banking) and the independent variables (Awareness, PU, PEoU , PR and Trust).

The value under model summery table17, determines the value of R2, which is a measure of the variability in the outcome is accounted for by the predictors. The output result showed that 78.9 % of the variance on intention to the adoption of mobile banking is explained by the proposed independent variables.

The second output determined by table18, is all about analysis of variance (ANOVA) and this test is determining the model is significant at predicting the outcome of the independent variable. This is confirmed by the Significance level of F statistics (P<0.05).

The last output summarized under table19, tells us the parameters of the model. The coefficient of independent variables determined by the value in column B. In other word, the value under B represents the level of each contribution in the model.

Table 17 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.888[a]	.789	.786	.34409

a. Predictors: (Constant), Perceived Trust, Perceived Usefulness, Perceived Risk, Awareness, Perceived Ease of Use

Table 18 Regration model significance ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	137.905	5	27.581	232.957	.000[a]
	Residual	36.821	311	.118		
	Total	174.726	316			

a. Predictors: (Constant), Perceived Trust, Perceived Usefulness, Perceived Risk, Awareness, Perceived Ease of Use

b. Dependent Variable: Intention To Adopt

Table 19 Regration coefficient summary [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.243	.211		5.891	.000		
	Awareness	.209	.035	.238	6.056	.000	.438	2.285
	Perceived Usefulness	.050	.037	.039	1.347	.179	.807	1.240
	Perceived Ease of Use	.432	.040	.444	10.821	.000	.402	2.489
	Perceived Risk	-.132	.025	-.185	-5.166	.000	.530	1.887
	Perceived Trust	.112	.027	.146	4.191	.000	.557	1.796

a. Dependent Variable: Intention To Adopt

4.11 Hypothesis Test

H_1: *Perceived Ease of Use has a significant positive influence intention to adopt mobile banking.*

The results obtained in the above table 13, showed that the coefficient B and p value of Perceived Ease of Use were positive and significant (B = 0.43, p< 0.05). Thus, Perceived Ease of Use has a positive and significant effect on Intention to adopt mobile banking. This significant positive relationship is seen in the positive coefficients values reflected, thus, providing solid support for H1 that perceived Ease of use is significantly affect on intention to mobile banking adoption. This implies that when mobile banking services are easy to use, retail banking clients feel that they will exert less effort to operate the services, leading to the development of a positive attitude towards usage. The finding was consistent with past studies conducted related to adoption of mobile banking services (Abdul Kabeer Kaziia, Muhammad Adeel Mannanb,2013; Tariq Bhatti, 2007; Imtiaz Arif Sahar A and Arshian S.,2016)

H_2: *Perceived Usefulness has a significant positive effect on intention to adopt mobile banking.*

The results of multiple regressions, as presented in above, revealed that Perceived Usefulness has a positive relation but not significant effect on intention to adopt mobile banking with (B=0.05, p=0.18> 0.05). Therefore, the researcher not support the initial hypothesis; Perceived Usefulness has a positive and significant effect on intention to adopt mobile banking. This research finding contradicts with many former research findings (Davis, 1989; Oluoch R. Akinyi etal, 2012). Unfortunately, This finding was in line with the finding obtained by Karma Nancy George, Ibrahim Siddig Ballal and Ali Abdel Hafiez(2014) on Sudanese commercial bank customers.

As presented in our findings, the most unusual finding was perceived usefulness has no significant effect on behavioral intention to adopt mobile banking. The reasons for this finding are not clear, but several possible reasons might exist. With respect to perceived usefulness table 8, the descriptive statistics indicates that the majority of the respondents (63.7%) agreed that mobile banking is convenient and performing transaction more quickly. Even though, they are more aware of the usefulness of the technology there are other factors deterring the proper use of the

technology. For example, consumers decide to make transactions online, most of the time the receiver (seller) may refuse such type of payment system for many reasons.

H_3: *Perceived Risk would have significant and negative effect on intention to adopt mobile banking.*

The results of table19 showed that the coefficient beta value of Perceived Risk were negative and significant (B = -0.13, p < 0.05) effect on intention to adopt mobile banking. Thus, the research finding confirmed the hypothesis and it was accepted that Perceived Risk has negative and significant effect on Intention to adopt mobile banking. This was in line with many past studies by (Ravichandra D. et al 2016, Abdul Kabeer Kaziia, Muhammad Adeel Mannanb,2013; Gizachew kalkidan. 2016;). Therefore, it is imperative for stake holders to plan higher security in providing mobile banking services in order to achieve higher consumer acceptance.

H_4: *Awareness has a significant positive effect on intention to adopt mobile banking.*

The results of multiple regressions, as presented in table 13 above, revealed that Awareness has a positive and significant effect on intention to adopt mobile banking with (B =0.21, p < 0.05). Therefore, the research finding leads to the conclusion that awareness has a positive and significant effect on intention to adopt mobile banking. Customers will be rational on their decision if they have information. Since, they have got the right information on mobile banking their attitude changed positively. Similar results were demonstrated from previous studies by (Wakungi R. Ndinda, 2015; Gizachew kalkidan, 2016)

H_5: *Perceived Trust would have significant and positive effect on intention to adopt mobile banking.*

The results of table 13, showed that the coefficient beta and p value of Perceived Trust were (B=0.11, P<0.05). Thus, our research hypothesis, such that, Perceived Trust has positive and significant effect on Intention to adopt mobile banking was confirmed. The study was in line with previes study by (Tobbin, P. E. 2010, Majharul Talukder, Ali Quazi and Milind Sathye ,2014)

The overall effect of the variables under the model summary table17 above tell us how much of the variance in the dependent variable (Intention to Adopt mobile banking) is explained by the model (which includes the variables of Awareness, PU, PEoU, PR, Trust).

In this research the value of R is 0.789, this means that our model explains 78.9 % of the variance on intention to adopt mobile banking.

Thus, those independent variables PEoU, Awareness, perceived trust have positive effect on intention to adopt mobile banking. On the other hand, perceived risk has negative effect on intention to adopt mobile banking. The relationship of the variables were explained by the following multiple linear equation.

MB Adoption = 0.21Aw+0.05PU+0.43PEoU-0.13PR+0.11PT+ 1.24

Interpretation: The partial change on intention to adopt mobile banking due to one unit change in perceived risk factor is -0.13, while other things remain constant and it is statistically significant at 95 % confidence level. Thus it can be said that people perceive risk in using mobile banking make them reluctant to use such tool for banking.

The partial increase in the usage of mobile banking due to one unit change in Perceived ease of use is 0.43, while other things remain constant and it is statistically significant at 95% level of confidence.

The partial increase in the usage of mobile banking due to one percent change in awareness is 0.21. While other things remain constant and it is statistically significant at 95% level of significance (Table 19).

The partial increase in the usage of mobile banking due to one percent change in Perceived trust is 0.11 while other things remain constant and it is statistically significant at 95% level of confidence (Table 19).

Chapter 5

Summary, conclusion and recommendation

In this chapter the main findings obtained in the analysis part will be summarized and presented. Explanation from academic and managerial perspectives will be forwarded. Furthermore, there will be recommendation for commercial banks that operate particularly in Addis Ababa. Finally, research contribution, limitation and areas for future studies will be presented.

The purpose of this research is to examine and identify factors that affect commercial banks customers' behavioral intention to adopt mobile banking in Addis Ababa. Specifically, sample respondents were selected from CBE, Dashen bank, United bank and bank of Abyssinia who have bank account. The study were factor out five constructs from TAM and IDT models integrating with an additional variable Perceived Trust, Perceived risk and Awareness. The effect of Awareness, Perceived usefulness, Perceived ease of use, Perceived risk and Perceived Trust on intention to adopt mobile banking was examined.

The study was a quantitative research approach in nature. Survey strategy was employed to have opinion of large number of respondents by distributing questionnaires. In this case, 384 sample respondents were conveniently selected from the respective banks. Thus, the observed data were analyzed by using descriptive and inferential statistical techniques, such as percentages and frequency distribution table and regression analysis were executed using SPSS.

5.1 Summary

Sample respondents demographic characteristics were summarized. From the total of sample respondents 192 sample respondents (61.1%) were male, whereas, 122 (38.9%) sample respondents were female. The study has identified that the age group 31-40 (46.3%) were the dominant age category followed by the second age segment 21-40 (31.5 %). The other group 41-50 accounted 16.4% and the other extreme ends accounted less than 6%. With regard to mobile banking usage the majority (67.8%) of the respondents were not registered for mobile banking. Whereas, the remaining 32.2% were mobile banking users.

The study has identified that perceived risk was the only factor that affect mobile adoption negatively. This implies that if individuals perceived higher risks and uncertainty such as issues of loss and theft of financial information due to system hacking, this would discourage adoption of mobile banking by the consumers.

On the other hand, Perceived ease of use, Awareness and Perceived trust affect positively and significantly. Perceived ease of use was the highest determinant of intention to adopt mobile banking. Awareness is the second salient factors in determining users' mobile banking adoption in this study. Trust is also an important factor in determining mobile banking adoption.

In addition to these, the research has identified that perceived usefulness has no effect on intention to adopt. The study has revealed that even if this new platform has brought more convenient, time saving, efficient features, there exist other important factors that determine its rate of adoption.

Ingeneral, Perceived risk and Awareness, Trust and Perceived ease of use were major factors in determining customer behavioral intention towards mobile banking adoption. Since, there were a considerable number of non users in this study, PEou, Awareness, Trust and perceived risk will be the dominant factor that determines behavioral intention. Whereas, perceived usefulness have no significant effect on intention to adopt mobile banking.

The regression between dependent and independents variables obtained in the analysis part was summarized in the following table below.

Table 20. Summary on hypothesis

	Construct/Dimension	Coefficient B value	Sig. level	Hypothesis Status
1	Awareness	0.210	P<0.05	Supported
2	Perceived usefulness	0.050	P>0.05	Not Supported
3	Perceived Ease of use	0.430	P<0.05	Supported
4	Perceived risk	-0.130	P<0.05	Supported
5	Perceived trust	0.110	P<0.05	Supported

Source: Own survey result (2017)

The regression result confirmed that Awareness, PEoU , PR and PT have significant effect on customers' intention toward mobile banking adoption. The coefficients of the variables determined that except risk all other variables are positively related to mobile banking adoption. While, significant level for perceived Usefulness was greater than 0.05, implied that perceived Usefulness has no relationship with mobile banking adoption. This conceptual model has able to determine 78.9 % of the variation on intention to adopt mobile banking made by Awareness, PT, PEoU and PR.

5.5 Conclusion

The study was successfully identified factors that affect customers' intention to adopt mobile banking. The study revealed that Perceived Ease of us, Awareness, perceived risk and perceived trust are able to determine the level of mobile banking adoption in Addis Ababa.

If Commercial banks customers becomes more aware of the technology and thus the rate of adoption increases. This means that, for a person to adopt a technology, seeing, hearing about or in general sufficient level of level of information is required.

Mobile banking users would be concerned with the effort needed to use that application and the difficulty of the process involved. Such perceived ease of browsing, identifying information and performing financial transactions will enhance intention to adopt the behavior.

Lack of trust including fear of the performance of the technology and the promises made to them are major barrier towards successful mobile banking adoption. Finally, the risk concern such as identified personal information and financial transactions security (privacy concern), the hacking of their money using the technology are barriers for successful implementation of. Greater the customers perception about the risk associated with the use of internet, greater will be the importance of security for customer.

5.6 Recommendation

Here, the effort put forth by commercial banks to improve their customer's awareness will have multiplied effect on motivating customers to be mobile banking users. As the level of information increases customers become more rational on their decision. In other words, commercial banks have to communicate to their customers about the security aspects and the safest mode of financial transaction rather than the usual traditional banking system.

Commercial bank should take in to account their mobile banking technology in terms of being user friendly. Because the research result revealed that customers more prefer if using the system free of effort.

Safe guarding the technology from unauthorized act, possible of reduction in uncertainties, ambiguities, risks and frauds related to financial transactions while using the technology will enhancing the likelihood of increasing customers adopting mobile banking. Thus, creating favorable environment in mobile banking technology will help the new emerging agent banking technology will defuse with short period of time

5.3 Academic and Managerial Implications

The main objective of this research is for academic purpose but the implication will extended to that organization which provides mobile banking service. The academic implications of this study are basically technology acceptance model by itself insufficient in estimating customer's intention to adopt mobile banking; since the observed finding embrace from different models. And hence, the additional variables Perceived risk and Awareness have able to determine intention to adopt mobile banking adoption. Thus, integrating technology acceptance model with additional variables increases the predicting power of the proposed model.

Today mobile baking services have become competitive channel where banks move on to gain sharp edge of competitive advantage. Therefore, these research finding is important for commercial banks to understand their customers behavior. The main findings of this study are a valuable source of information for commercial banks that operate in Addis Ababa. Here, the study specifically concerned on commercial banks customers who have a bank account.

The research revealed that 67.8% of respondents are not subscribed for the service and banks have intended to minimize this gap since the service has mutual benefit. The key tools to enhance the number of mobile banking subscribers are applying technologies that simplify the transaction steps and other complicated procedures. The study revealed that perceived risk has negatively affects customers intention towards mobile banking adoption. In order to increase mobile banking subscribers' banks should intensively communicate their customers about its mobile banking service reliability, its simplicity and user friendly.

5.4 Direction for future research

The effect of basic demographic variables such as age, gender and education qualification on intention to adopt mobile banking was not intensively investigated. Some demographic variables are significant which might have influence on the usages of mobile banking. Furthermore, splitting users from non users and studying their particular behavior is important. Since the study was limited to Addis Ababa it is difficult to infer to other parts of the country to have complete reflection. Moreover, the risk factor was significantly reducing the adoption rate further study required in detail on specific elements of risk factors.

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Appendices

ANOVA table 21 Test for Linearity of variables

			Sum of Squares	df	Mean Square	F	Sig
Intention To Adopt * Awareness	Between Groups	(Combined)	100.707	3	33.569	141.953	0
		Linearity	99.928	1	99.928	422.564	0
		Deviation from Linearity	0.779	2	0.39	1.647	0.194
	Within Groups		74.018	313	0.236		
	Total		174.726	316			
Intention To Adopt * Perceived Usefulness	Between Groups	(Combined)	27.937	3	9.312	19.857	0
		Linearity	27.789	1	27.789	59.254	0
		Deviation from Linearity	0.148	2	0.074	0.158	0.854
	Within Groups		146.789	313	0.469		
	Total		174.726	316			
Intention To Adopt * Perceived Ease of Use	Between Groups	(Combined)	120.322	3	40.107	230.747	0
		Linearity	120.099	1	120.099	690.957	0
		Deviation from Linearity	0.223	2	0.112	0.642	0.527
	Within Groups		54.404	313	0.174		
Intention To Adopt * Perceived Risk	Between Groups	(Combined)	86.001	4	21.5	75.606	0
		Linearity	84.463	1	84.463	297.015	0
		Deviation from Linearity	1.538	3	0.513	1.803	0.147
	Within Groups		88.724	312	0.284		
	Total		174.726	316			
Intention To Adopt * Perceived Trust	Between Groups	(Combined)	78.625	4	19.656	63.816	0
		Linearity	76.291	1	76.291	247.686	0
		Deviation from Linearity	2.334	3	0.778	2.526	0.058
	Within Groups		96.101	312	0.308		
	Total		174.726	316			

Addis Ababa University
School of Commerce
Marketing Management Program

Survey Questionnaire

Dear Respondents

The purpose of this questionnaire is to enable me to carry out a research on "factors influence mobile banking adoption" for the partial fulfillment of master's degree in marketing management. The research mainly focuses on commercial banks customers in Addis Ababa. Your anonymity/ secrecy / will be strictly maintained as we do not ask for your name here and will ***not*** be used for any other purpose. Moreover, this survey should only take about **10 minutes** of your time. I am grateful for your cooperation in advance.

NB:

- Writing your name is not necessary
- Put " √ " for your choice in the box provided

Part I Personal Information

1. Gender ☐ Male ☐ Female
2. Age ☐ Less than 20 years old
   ☐ 20-30 Years old
   ☐ 31-40 Years old
   ☐ 41 -50 Years old
   ☐ Older than 50 years old
3. Education ☐ High school or Below ☐ Bachelor Degree
   ☐ Diploma ☐ Masters Or Above
4. Occupation ☐ Government Employee
   ☐ Private Employee
   ☐ Other
5. Income ☐ Less than birr 3,000 per month
   ☐ Between birr 3,001 and 6,000 per month
   ☐ Between birr 6,001and 10,000 per month
   ☐ More than birr 10,000 per month
6. Do you Use mobile banking?
   ☐ Yes ☐ No

Part II : Please select(√) the appropriate response box that best describes your perception about mobile banking adoption.

S.No	Measured Constructs	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
	Awareness	**1**	**2**	**3**	**4**	**5**
1	I know about mobile banking services.	☐	☐	☐	☐	☐
2	I have received enough information of how to use mobile banking services.	☐	☐	☐	☐	☐
3	I have received information about the security system of mobile banking services from the bank.	☐	☐	☐	☐	☐
4.	In general, I have received enough information about mobile banking service.	☐	☐	☐	☐	☐
	Perceived Usefulness					
5.	Mobile banking makes it easier to do banking activities.	☐	☐	☐	☐	☐
6.	Mobile banking enables one to do banking activities more quickly.	☐	☐	☐	☐	☐
7.	I think mobile banking enables one to complete banking activities more conveniently.	☐	☐	☐	☐	☐
8.	I think mobile banking is useful in conducting banking activities.	☐	☐	☐	☐	☐
	Perceived ease of Use					
9.	I think it is easy to learn how to use mobile banking.	☐	☐	☐	☐	☐
10.	I think it is easy to become skilful at using mobile banking.	☐	☐	☐	☐	☐
11.	Overall, I think mobile banking is easy to use.	☐	☐	☐	☐	☐
	Perceived Risk					
12.	I think using mobile banking services for monetary transactions will have potential risk.	☐	☐	☐	☐	☐
13.	I think that privacy is not guaranteed when using mobile banking services.	☐	☐	☐	☐	☐
14.	I believe it can rather easily happen that money can be stolen if mobile banking services are used.	☐	☐	☐	☐	☐
15.	I think mobile banking services are more risky than other banking option.	☐	☐	☐	☐	☐

	Perceived Trust	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
16.	I believe the bank's mobile banking application will keep the commitments promises made to me.	☐	☐	☐	☐	☐
17.	The bank's mobile banking service is totally trustworthy.	☐	☐	☐	☐	☐
18.	I believe in the information provided by bank's mobile banking transaction.	☐	☐	☐	☐	☐
	Intention to Mobile banking adoption					
19.	I intend to use mobile banking Continuously in the future.	☐	☐	☐	☐	☐
20.	To the extent possible, I would take advantage of mobile banking for my banking activities.	☐	☐	☐	☐	☐
21.	I will regularly use mobile banking in the future.	☐	☐	☐	☐	☐
22.	I will adopt mobile banking as soon as possible.	☐	☐	☐	☐	☐

አዲስ አበባ ዩኒቨርሲቲ
ኮሜርሺያል ኮሌጅ
ማርኬቲንግ ትምህርት ክፍል

<u>የጥናት መጠይቅ</u>

<u>ውድ የጥናቱ ተሳታፊዎች</u>

የዚህ መጠይቅ ዋና አላማ በአዲስ አበባ ዉስጥ የሚገኙ የባንክ ደንበኞች ስለ ሞባይል ባንኪንግ ዙሪያ ያላቸውን አመለካከት ምን እንደሚመስል ለማጥናት እና የመፍትሄ ሃሳብ ለመጠቆም የሚረዳ የመመረቂያ ፅሁፍ ለማዘጋጀት ነዉ። በዚህ ጥናት ተሳታፊ የሚሆኑት የባንክ ደንበኞች ሆነዉ የሂሳብ ቁጥር ያላቸውን ነው። የምትሰጡን ሀሳብ ከዚህ አላማ ዉጭ የማንጠቀምበት ከመሆኑም በተጨማሪም ሚስጥራዊነቱ የተጠበቀ ነዉ። ለምታደርጉልን ትብብር ከወዲሁ እናመሰግናለን።

<u>ማሳሰቢያ</u> :- ስም መፃፍ አስፈላጊ አይደለም

ዐ በተቀመጡት የመልስ ሳጥን ውስጥ የእርሶ ምርጫ የሆነውን " √ " ምልክት ያስቀምጡ

ክፍል አንድ : አጠቃላይ መረጃ

1. ፆታ ☐ ወንድ ☐ ሴት
2. እድሜ ☐ ከሃያ ዓመት በታች ☐ 41 - 50 ዓመት
   ☐ ከ 20 – 30 ዓመት ☐ ከ 50 ዓመት በላይ
   ☐ ከ 31 -40 ዓመት
3. የትምህርት ደረጃ
   ☐ ሁለተኛ ደረጃ እና ከዚያ በታች ☐ የመጀመሪያ ዲግሪ
   ☐ ዲፕሎማ ☐ ማስተርስ እና ከዚያ በላይ
4. የስራ ሁኔታ
   ☐ የመንግስት
   ☐ የግል
   ☐ ሌላ
5. የወር ገቢ ☐ ከ ብር 3,000.00 በታች ☐ ከ ብር 6,001 – 10,000
   ☐ ከ ብር 3,001.00 – 6,000.00 ☐ ከ 10,001 ብር በላይ
6. ሞባይል ባንኪንግ ይጠቀማሉ ?
   ☐ አዎ ☐ አልጠቀምም

<u>ክፍል ሁለት፡</u> ከዚህ በታች ለተዘረዘሩትጥያቄዎች አምስት ምርጫዎች ቀርበዋል። የ እርሶ ምርጫ የሆነው ላይ “ √ ” ምልክት ያስቀምጡ።

ተ.ቁ		በጣም አልስማማም	አልስማማም	እርግጠኛ አደለሁም	እስማማለሁ	በጣም እስማማለሁ
		1	2	3	4	5
1	ሞባይል ባንኪንግ ስለሚሰጠው አገልግሎት ግንዛቤው አለኝ	☐	☐	☐	☐	☐
2	በሞባይል ባንኪንግ እንዴት መጠቀም እንደሚቻል ግንዛቤዉ አለኝ	☐	☐	☐	☐	☐
3	ባንኩ ሞባይል ባንኪንግ ስለሚሰጠው አገልግሎት አስፈላጊዉን መረጃ ሰጥቶኛል	☐	☐	☐	☐	☐
4.	ባጠቃላይ ስለ ሞባይል ባንኪንግ በቂ እውቀት አለኝ	☐	☐	☐	☐	☐
5.	በሞባይል ባንኪንግ የሚፈለገዉን የባንክ አገልግሎት በቀላሉ ማግኘት ያስችላል	☐	☐	☐	☐	☐
6.	ሞባይል ባንኪንግ መጠቀም በፍጥነት የባንክ አገልግሎቶችን እንድናገኝ ይረዳናል	☐	☐	☐	☐	☐
7.	ሞባይል ባንኪንግ በቀላሉ እና በማንኛውም ሁኔታ የባንክ አገልግሎቶችን እንድናከናዉን ይረዳናል	☐	☐	☐	☐	☐
8.	ባጠቃላይ የባንክ አገልግሎቶቸን በሞባይል ባንኪንግ መተግበር ጠቃሚ ነዉ	☐	☐	☐	☐	☐
9.	ሞባይል ባንኪንግ አጠቃቀም በቀላሉ መማር ይቻላል	☐	☐	☐	☐	☐
10.	ሞባይል ባንኪንግ አጠቃቀም በአጭር ግዜ ዉስጥ በብቃት መልመድ እና ተግባራዊ ማድረግ ይቻላል	☐	☐	☐	☐	☐
11.	ባጠቃላይ ሞባይል ባንኪንግ በቀላሉ መጠቀም ይቻላል	☐	☐	☐	☐	☐
12	በሞባይል ባንኪንግ ገንዘብ ማዘዋወር አደጋ አለዉ ብዬ አምናለሁ	☐	☐	☐	☐	☐
13.	የሞባይል ባንኪንግ አገልግሎት ሚስጥራዊነቱ የተጠበቀ አይደለም	☐	☐	☐	☐	☐
14.	ሞባይል ባንኪንግ መጠቀም የደንበኞች ገንዘብ ለስርቆት የተጋለጠ ነዉ	☐	☐	☐	☐	☐
15.	ባጠቃላይ ሞባይል ባንኪንግ ለገንዘብ ዝዉዉር መጠቀም ለአደጋ የተጋለጠ ነዉ	☐	☐	☐	☐	☐

16	ባንኩ ለሚሰጠው የሞባይል ባንኪንግ አገልግሎት የገባውን ቃል ደንበኞች ከሚያገኙት አገልግሎት ጋር አንድ አይነት ነዉ	☐	☐	☐	☐	☐
17.	ባንኩ ያቀረበው የሞባይል ባንኪንግ አገልግሎት እምነት የሚጣልበት ነዉ	☐	☐	☐	☐	☐
18	በ ሞባይል ባንኪንግ የሚቀርቡ መረጃዎች አስተማማኝ ናቸዉ	☐	☐	☐	☐	☐
19.	ወደፊት ሞባይል ባንኪንግ ለመጠቀም ዝግጁነኝ	☐	☐	☐	☐	☐
20.	በሚኖሩት አጋጣሚዎች ሁሉ ሞባይል ባንኪንግን በበለጠ ሁኔታ እጠቀማለሁ	☐	☐	☐	☐	☐
21	ወደፊት በመደበኛነት ሞባይል ባንኪንግን እጠቀማለሁ	☐	☐	☐	☐	☐
22	በተቻለ ፍጥነት ሞባይል ባንኪንግን እንደ እስፈላጊነቱ ለባንክ አገልግሎት ተግባር ላይ አዉላለሁ	☐	☐	☐	☐	☐

Report 1. Awareness=					
Mobile banking use		*I know about mobile banking services.*	*I have received enough information of how to use mobile banking services.*	*I have received information about the security system of mobile banking services from the bank.*	*In general, I receive enough information about mobile banking service.*
Yes	Mean	**3.97**	**3.47**	**3.53**	**3.40**
No	Mean	**3.08**	**3.01**	**3.02**	**2.76**
Total	Mean	**3.37**	**3.16**	**3.19**	**2.97**
Report 2. Perceived Usefulness					
Mobile banking use		*Mobile banking makes it easier to do banking activities.*	*Mobile banking enables one to do banking activities more quickly.*	*I think mobile banking enables one to complete banking activities more conveniently.*	*I think mobile banking is useful in conducting banking activities.*
Yes	Mean	**3.96**	**4.09**	**4.15**	**4.28**
No	Mean	**3.70**	**3.80**	**4.01**	**4.00**
Total	Mean	**3.78**	**3.91**	**4.05**	**4.00**
Report 3. Perceived Risk					
Mobile banking use		*I think using mobile banking services for monetary transactions will have potential risk.*	*I think that privacy is not guaranteed when using mobile banking services.*	*I believe it can rather easily happen that money can be stolen if mobile banking services are used.*	*I think mobile banking services are more risky than other banking option.*
Yes	**Mean**	**3.00**	**2.65**	**2.63**	**2.54**
No	**Mean**	**3.21**	**3.18**	**3.13**	**4.00**
Total	Mean	**3.15**	**3.01**	**2.97**	**3.00**

Source: Own survey data(2017)

Report 4. Perceived Ease of Use					
Mobile banking use		*I think mobile banking is useful in conducting banking activities.*	*I think it is easy to learn how to use mobile banking.*	*I think it is easy to become skilful at using mobile banking.*	
No	Mean	**4.074**	**3.256**	**3.302**	
Total	Mean	**4.142**	**3.366**	**3.356**	
Report 5. Perceived Trust					
Mobile banking use		*The bank_s mobile banking it is totally trustworthy.*	*I believe in the information provided by bank_s mobile banking transaction.*	*I intend to use mobile banking Continuously in the future.*	
Yes	Mean	**3.76**	**3.80**	**3.79**	
No	Mean	**3.60**	**3.66**	**3.23**	
Total	Mean	**3.66**	**3.70**	**3.41**	
Report 6. Intention to Adopt					
Mobile banking use		*I intend to use mobile banking Continuously in the future.*	*To the extent possible, I would take advantage of mobile banking for my banking activities.*	*I will regularly use mobile banking in the future.*	*I will adopt mobile banking as soon as possible*
Yes	Mean	**3.79**	**4.00**	**3.97**	**4.11**
No	Mean	**3.23**	**3.28**	**3.45**	**3.58**
Total	Mean	**3.41**	**3.51**	**3.62**	**3.75**

Source: Own survey data(2017)