



St. Mary's University
School of Graduate Studies

Factors Affecting Adoption of Mobile Banking: the case of Nib International Bank S.C.

By

BekaluTibebe

Id: SGS/0110/2010A

JULY 2019

Addis Ababa, Ethiopia

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**A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY, SCHOOL OF GRADUATE
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ADDIS ABABA, ETHIOPIA**

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LETTER OF CERTIFICATION

This is to certify that Bekalu Tibebe has carried out his research project work under my supervision, on the topic of “Factors Affecting Adoption of Mobile Banking: in the case of Nib International Bank”. This work is original in its nature and it is suitable for Submission in partial fulfillment of the requirement for the award of Degree in Executive Masters Business Administration (MBA).

Signature& Date

Hailemariam Kebede(PhD, Assistant
Professor)_____

Declaration

I Bekalu Tibebe, declare that the study entitled “FACTORS AFFECTING THE ADOPTION OF MOBILE BANKING: THE CASE OF NIB INTERNATIONAL BANK S.C” is the result of my own effort in research undertaking. All information in this document has been obtained and presented in accordance with academic rules and ethical conduct. The study has not been submitted to any Degree or Diploma in any college or university. It is submitted in the partial fulfillment of the requirement of the Degree of Executive Master of Business Administration.

Bekalu Tibebe

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FIGURE 1: CONCEPTUAL FRAMEWORK APPLIED FOR THE RESEARCH

FIGURE 2: CONCEPTUAL FRAMEWORK ADOPTED FOR THE RESEARCH FROM TAM

List of Acronyms

ATM = Automatic Teller Machine

GSMA = Global System Mobile Association

ITU = International Telecommunications Union

IVR = Interactive Voice Response

M-Banking& MB = Mobile Banking

MFWAP = Making Finance Work FOR Africa Partnership,

MMA = Mobile Marketing Association

MNO = Mobile Network Operator

NBE = National Bank of Ethiopia

NIB = Nib International Bank s.c

PEU = Perceived Ease of Use

PR = Perceived Risk

PU = Perceived Usefulness

SIM = Subscriber Identity Module

TAM = Technology Acceptance Model

TPB = Theory of planned behavior

TRA = Theory of Reasoned Action

USSD = Unstructured Supplementary Service Data

WAP = Wireless Application Protocol

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Abstract

Banking industry is one of the critical economic institutions in the economic development of a country. However, the majority of Ethiopians' do not have access to the banking services. Even most of the existing banks operate in cities and towns where significant customers exist to secure financial viability since all commercial banks operate for profit. Thanks to the advancement of information and communications technology in the banking sector commercial banks can provide banking services through mobile banking technology. However, in spite of the implementation of mobile banking technology in Ethiopia through commercial Banks the numbers of users of the services are very small as compared to other countries like Kenya. This research paper aims to understand the factors that affect the adoption of mobile banking technology in the case of Nib International Bank S.C. five selected branch customers using technology acceptance model developed by Davis with additional variable namely perceived risk. Understanding the factors that will affect customers' adoption behavior of mobile banking will help the NIB'S effort to increase the penetration and growth of mobile banking service. To address the research objective 425 sample customers are selected based on purposive and convenient sampling method and questionnaire is distributed from which 368 sample respondents replied appropriately to the questionnaire. Data gathered are analyzed using descriptive statistics such as frequency, percentage, mean, and standard deviation. Besides binary logistic regression analysis is conducted to understand the relationship of mobile banking adoption and perceived usefulness, perceived ease of use and perceived risk. As result the study found out that perceived usefulness have positive relationship with the adoption of mobile banking whereas perceived ease of use and perceived risk has negative relationship with the adoption of mobile banking. NIB and its selected five branches in particular shall promote mobile banking services to its customers using various promotional tools appropriate to the target market so that it can increase the awareness and perception of potential customers about the technology's usefulness, ease of use as well as its risk.

Key words: TAM, Mobile banking, perceived usefulness, perceived ease of use and perceived risk

Chapter One

1. Introduction

1.1. Background of the study

Financial sector plays an important role in providing different financial services such as mobilizing financial resources from the surplus units to those who need financial resources to undertake different economic activities. Traditionally banks are the major players in the financial sectors in mobilizing public money in terms of saving and lend it to those who need it. This is the reality in developing countries even today where alternative financial institutions are at lower level of development relative to the banks. “These days, the function of commercial banks is confined not only to advancing loans to the public and accepting their deposits, their contribution in accelerating the rate of economic development in under- developed and developing countries is very important” V. K. Gangal (2013). Access to banking service will improve the qualities of lives of a society; however, access to banking service in developing countries is at lower level. According to the report released by African development bank in 2013 only 23% of African have bank account whereas same report reported that high income countries account penetration is 89%, the report further lists various factors which contribute to this poor development such as: deficient infrastructure, physical-geographical isolation or inaccessibility, financial illiteracy, all of which culminate into exceedingly high cost of providing banking services.

According to the national bank of Ethiopia annual report (2013/2014) there are 19 banks in Ethiopia out of which 16 are private banks and three of them are state owned banks. 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 39, 402 during 2013/14 according to the National Bank of Ethiopia Annual report (2013/14). In order to expand the banking services to the poor and rural people where the majority of those people are not served in the traditional banking business model, innovative banking services shall be introduced that will enable commercial banks to provide the banking service in a viable and mutually beneficial ways. In this regard the usage of different technologies in banking service will have crucial role in creating access to the services. One of the areas in the business environment where the application of information technology is pervasively used is banking. Anyasiand Otubu (2009) stated that over the years banking has transcended from traditional

brick and mortar model of customer queuing for services in the banks to modern day banking where banks can be reached at any point for their services. Information technology is used in Banks today in all its process, starting from information sharing among different units up to the delivery of banking services to customers electronically. Among the different technologies which have been adopted in banks to deliver banking services to their customers' mobile technology is the popular one both in developed and developing world this is related to the growth of mobile telephone users in the world. According to the report released by Global Systems Mobile Associations (GSMA), mobile-cellular subscriptions reach almost 7.9 billion by end of 2018 (GSMA, 2018). The increase is mostly due to growth in the developing world where mobile-cellular subscriptions account for 78 per cent of the world's total. In Ethiopia the number of mobile customers is rapidly increasing it has reached above 65.7 million subscribers (ethio telecom, end of 2010 E.C.).

Mobile banking is defined in different ways by different writers but for this research project we use the definition by RajnishTiwari (2006). "Mobile Banking refers to provision and making available of bank-related financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customized information." According to the study conducted by Making Finance Work for Africa Partnership (MFWAP,2012), given the low density of physical access points like bank branches or ATMs, many Africans have few options, if any, for transferring money and accessing banking services.

Mobile Banking (M-Banking) refers to the delivery of banking services through mobile phones which can overcome the limitations of physical infrastructure. This creates an opportunity for banks to use the mobile technology in the banking services as an alternative channel of service delivery with lots of benefits for both the banks and their customers. Using mobile banking will improve the banking sectors accessibility for those who do not have access to banking service in a country usually called, the unbanked segments of the society. In this regard recently we have seen a progress in different banks in adopting the technologies such as branch networking, ATM and usage of mobile applications such as SMS notification of bank transactions.

Therefore, recognizing the importance of mobile technology in providing banking services to potential bank customers, the main purpose of this research is to understand factors that affect Customers' adoption of mobile banking in the case of NIB selected five branch customers.

1.2. Statement of the problem

Ethiopia like other developing countries is a country where the majority of its population is unbanked for various reasons among which one of the main reasons is low level of banks presence throughout the country. Ethiopia is not an exception in Sub-Saharan Africa. As, compared to other African countries like Kenya where the mobile banking services accessibility reach higher level, the level of adoption in Ethiopia is very low

When we look at the growth in mobile phone penetration in Africa in general and in Ethiopia in particular it is moving up at higher rate. In Ethiopia the number of mobile phone subscribers has now reached more than 65.7 million in Ethiopia as of July 07, 2018 as per unpublished annual performance report of ethio telecom. The challenges we have seen previously in providing access to banking services in Sub-Saharan Africa in general and Ethiopia in particular can be addressed by using mobile phone and mobile banking technology as witnessed empirically in the neighboring country Kenya. Hence, mobile banking is an opportunity for the banks in Ethiopia to address the potential market in the country where access to banking services is very low.

Various researches have been conducted in Africa to identify factors that affect mobile banking adoption such as: N.G. Karama, (2014), N.Solomon et al, (2014), and R. A. Oluoch, (2012). As result of their research they identified different factors as determinant factors in the adoption of mobile banking like perceived usefulness, perceived ease of use, perceived risk and trust.

According to the library and internet search I conducted about mobile banking adoption in Ethiopia, except some researches in the general electronic banking in Ethiopia (Senait, 2007) to identify the challenges of e-banking, I could not find research work conducted specifically with regard to mobile banking and some researchers has done on about mobile banking adoption in the case of CBE. However, it is a gap in the case of private commercial banks.. Hence, this research paper tried to fill research gap in the area about factors that affect the adoption of mobile Banking technology in private commercial banks specifically Nib International Bank. By identifying different factors as determinant factors in the adoption of Mobile banking like perceived usefulness, perceived ease of use, perceived risk and trust.

1.3. Objective of the Study

1.3.1. General objective

The general purpose of this study is to identify factors which affect adoption of m-banking in the case of Nib International Bank.

1.3.2. Specific Objectives

- i. To understand the relationship between customers perception of usefulness of mobile banking and adoption of mobile banking technology,
- ii. To understand the relationship between customers perception of ease of use of mobile banking and adoption of mobile banking technology,
- iii. To understand the relationship between customer's perceptions of risk of mobile banking and adoption of mobile banking technology,

1.4. Significance of the Study

The findings of this research project have the following importance to government, customers, Nib International Bank and other commercial banks will be benefited from this study. Because understanding the perception of customers with regard to the adoption of mobile banking technology will help the bank make informed decision in the provision of mobile banking to customers. As result it will be benefited from the huge potential banking market where the majority of whom are still not banked. Other commercial banks on the way to adopt mobile banking technology in their service delivery will also benefit from this study to design appropriate mobile banking adoption strategy.

1.5. Scope of the Study

This study mainly looks at mobile banking adoption from customers' perspective in five selected Nib International Bank branches, Main, Tana, Sholla, Abinet and Adarash branch. And the study is based on the technology acceptance model with additional variable perceived risk included on top of the basic variables in the model. And the findings of the study indicate the direction and degree of relationship

between mobile banking adoption and the independent variables in the model. Besides the finding will help to understand customers' perception about mobile banking adoption.

1.6. Limitation of the study

The study is conducted in selected five Addis Ababa branches of Nib International Bank and the branches are selected with purposive sampling technique. Besides the sample respondents are selected in convenient sampling method due to difficulty of accessing sample customers. This may limit the representative of the research work.

Chapter Two

2. Literature Review

2.1. Theoretical Literature Review

2.1.1. M-Banking Definition and Services

Mobile Banking is defined as “The availment of bank-related financial services via mobile devices. It comprises of services in the field of accounting, brokerage and financial information” (Tiwari et al, 2006). The offered services may include transaction facilities as well as other related services that cater primarily to informational needs revolving around financial activities. Mobile banking can offer specific services such as, account information, mini statements, checking of account history, alerts on account activity (passing of set thresholds) monitoring of term deposits, access to loan statements, access to card statements, mutual funds (equity statements, stop payment on cheque, ordering cheque books, balance checking in the account. According to Porteous (2006), M-Banking can be classified in to two transformational and Additive M-Banking the former is provisioning of banking services using mobile phone to reach Unbanked population where the latter is using mobile phone as an additional channel that is used to provide banking services to those already banked.

2.1.2. M- Banking Benefits

Mobile banking brings significant benefits to customers and banks in this regards R. Chandra, (2014) lists the following benefits:

1. Time saving: Instead of allocating time to walk into a bank, you can check account balances, schedule and receive payments, transfer money and organize your accounts when you're on the go.
2. Convenient: The ability to access bank accounts, make payments, and even track investments regardless of where you are can be a big advantage Do your banking at a time and place that suits you, instead of waiting in queues. Secure: Generally, good mobile banking applications have a security guarantee or send you a SMS verification code you need to input to authorize a payment for added security. Mobile banking is said to be even more secure than online/internet banking.

3. Easy access to your finances: with the introduction of mobile banking, you are able to access your financial information even beyond the working hours. It helps to avail banking services even by making a call to the bank.
4. Increased efficiency: mobile banking functions are functional, efficient and competitive. It also helps in decongesting the banking halls and reduces the amount of paperwork for both the banker and the customer fraud reduction: one very real advantage to implementing mobile banking. “Customers are being deputized in real time to watch their accounts.
5. It utilizes the mobile connectivity of telecom operators and therefore does not require an Internet connection.
6. You can check your account balance, review recent transaction, transfer funds, pay bills, locate ATMs, deposit cheques, manage investments, etc.
7. Mobile banking is available round the clock 24/7/365, it is easy and convenient and an ideal choice for accessing financial services for most mobile phone owners in the rural areas.

2.1.3. Short Message Service (SMS)

It is widely available and affordable M-banking channel for consumers. From the banks Perspective a simple application or set of API (application programming interface) can be used by the bank to generate short message to send to a customer’s mobile device or respond to customer’s request MMA (2009) like URL in a web short code is used as unique locator for communication between the bank and customers is applied by the bank.

Advantages of SMS

According to the MMA Mobile Banking an Overview (2009) short message service has the following advantages:

Advantages

- Easy to use
- Common messaging tool among consumers
- Work across all wireless operators
- Affordable for consumers
- Require no software installation

- Allows banks and financial institutions to provide real time information to customers and employees
- Stored messages can be accessed without a network connection In the same document MMA (2009) short message service does have the following

Disadvantages:

- Text only a limited to 140 – 160 character per message.
- Does not offer secure environment.

2.1.4. Mobile Web

Mobile web allows users to access web sites from their handsets and it is a channel for the delivery of web contents through the mobile handset. As result of the advancement in mobile

Handset devices in terms having web browsing feature as well as wider screen with high Resolution coupled with availability of mobile internet services with higher quality (broadband) And affordable services relative to what was before, use of mobile web for various services is growing across the various segments of consumers. Among those services use of mobile web for mobile banking is becoming popular in the banking business. Like SMS channel mobile web has its own advantages and disadvantages some of which are described below.

Advantages

- User experience of browsing the internet from mobile device is familiar and offers a rich experience,
- Allows users to access corporate applications
- Secure connections can be established on most of the mobile browsers

Disadvantages

- Many nonstandard variables including handsets, browsers, and operating systems
- Inconsistent user experience due to varying connection speeds and handset limitations
- Users need to have data plan which may be a barrier to adoption among price sensitive demographics

- No off line (out of the coverage) capability

2.1.5. Mobile Client Applications

Mobile client applications are a rapidly developing segment of the global mobile market. Mobile

Client applications are common on most mobile phones today and are key to providing user Interfaces for basic telephony and messaging services as well as for more advanced and entertaining experiences. It has evolved to give a user access to services that require richer, faster

And not necessarily connected user experiences. In this respect mobile applications are distinctly different from browsing the mobile web. The combination of a client application on the handset and server component enables many benefits including access to all banking functionalities strong authentication and encryption of sensitive data and the ability for customization and Branding. From the financial services and applications point of view mobile client applications has variety of advantages and disadvantages.

Advantages

- Offers organizations more control over the user experience with a rich user interface capability
- Ability to work even when there is no connection to the wireless network
- Secure access can be established with applications
- Support for access to corporate customs applications
- Most applications also provide the ability to provide remote wipe- out of information when device is lost or stolen.

M-banking Technology Adoption models

Adoption: is defined as the act or process of beginning to use something new or different (M.

Webster). Technology adoption is thus the process of beginning to use new technology or different technology by customers, organizations etc. As result of the dynamism of the information and communications technology innovative technological products are released. And the growth of nations, organizations and individuals is highly dependent on how best they adopt the technology in their operations. In order to understand how people can accept or adopt technology various models are developed and used. Some technology acceptance models include

1. The Theory of Reasoned Action (TRA)
 2. Theory of planned Behavior (TPB)
 3. Innovations Diffusion Theory
 4. Technology Acceptance Model (TAM)
- 1. The Theory of Reasoned Action (TRA)**

According to The Theory of Reasoned Action (TRA), beliefs influence attitude and social norms which in turn shape a behavioral intention guiding or even dictating an individual's behavior Ajzen and Fishbein (1980); Leach, Hennessy and Fishbein(1994). Intention is the cognitive representation of a person's readiness to perform a given behavior, and it is considered to be the immediate antecedent of behavior.

2. Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) is proposed as an extension of the Theory of Reasoned Action (which was related to voluntary behavior), because of the limitations of TRA in dealing with behaviors over which people have incomplete Volitional/autonomous control.

3. Innovations Diffusions Theory

The Innovation Diffusion Theory has been used to study a variety of innovations. Rogers Identifies five attributes of an innovation that influence the adoption and acceptance behavior: Relative advantage, complexity, compatibility, trial ability, and observe-ability.

4. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was developed from TRA by Davis (Davis 1985).He proposed that systems use is a response that can be explained or predicted by user's motivation which in turn is directly influenced by an external stimulus consisting of the actual systems features and capabilities.

Davis in his conceptual model suggests that users' motivation can be explained by three factors: Perceived ease of use, Perceived Usefulness, and Attitude toward Using the System. According to the model a potential user's overall attitude towards using a given system is hypothesized to be a major determinant of whether or not he actually uses it. Attitude towards using, in turn, is a function of two major beliefs: perceived usefulness and perceived ease of use perceived ease of use has causal effect on perceived usefulness. Design Features directly influence perceived usefulness and perceived ease of use and design features is an external variable hence it affects the attitude and behavior indirectly through perceived usefulness and perceived ease of use.

According to Davis (1985):

- **Use:** refers to an individual's actual direct usage of the given system in the context of his or her job.
- **Attitude:** refers to the degree of evaluative affect that an individual associates with using the target system in his or her job
- **Perceived usefulness:** is defined as the degree to which an individual believes that using a particular system would enhance his or her job performance.
- **Perceived ease of use:** is defined as the degree to which an individual believes that using a particular system would be free of physical and mental effort. Perceived ease of use is hypothesized to have a significant direct effect on perceived usefulness, since all else being equal a system which is easier to use will result in increased job performance (i.e., greater usefulness) for the user.

2.2. Empirical Literature Review

According to the research conducted by N.G. Karma, 2014 about key factors affecting Mobile banking adoption among Bank customers in Sudan, customers of banks in Sudan will be more likely to adopt m-banking service if they find it easy to be used with no much required efforts Also; they will intend to use the service if the bank was trustable and provides them Confidentiality and protection for their information.

In another study conducted by R.A. Oluoch (2012) in Kenya the findings regarding factors which affect the adoption of M-banking in Kenya in the case of Nakuru Municipality "perceived usefulness is the

most important significant factor affecting the adoption of M-banking technology perceived risk hinders majority of bank customers from adopting mobile banking Mobile banking service providers should ensure security measures are enforced”. In a similar study conducted in Tanzania by A.R. Ishengoma (2011), adoption of mobile Banking technology by customers is highly influenced by perceived value of the technology to the customers “the intention to use M-Banking service was brought forward by the perceived value of the M-Banking services, most were registered because of the belief in M-Banking that enabled them to access financial services in an easy way Also, the level of education, age and sex were determinants of usage behavior of the M-Banking system.” Mobile banking service allows customers to manage their accounts with ease. (Mols, Bukh, &Neilsen, 1999) stated that the diffusion of electronic banking is more determined by customer acceptance than by seller offerings. Not enough is known regarding how customers perceive and evaluate electronically delivered services. Lee and Lin (2005) have also recently highlighted the need for further research to measure the influence of e-service on customer-perceived service quality and satisfaction (Ibrahim et al, 2006).

Karma (2014) in his study to identify key factors affecting the adoption of mobile banking adoption among bank customers in Sudan uses Technology acceptance model, however, like others researches it includes additional variables beyond the two original independent variables of TAM i.e., perceived usefulness and perceived ease of use. As result Karma added two additional important variables in the model as determinant variable these are perceived trust and perceived risk.

In similar study conducted in Kenya to examine factors affecting the adoption of mobile banking technology in Kenya by (R.A. Oluoch, 2015) uses TAM as conceptual framework with perceived risk as an added variable.

2.3. Conceptual Framework

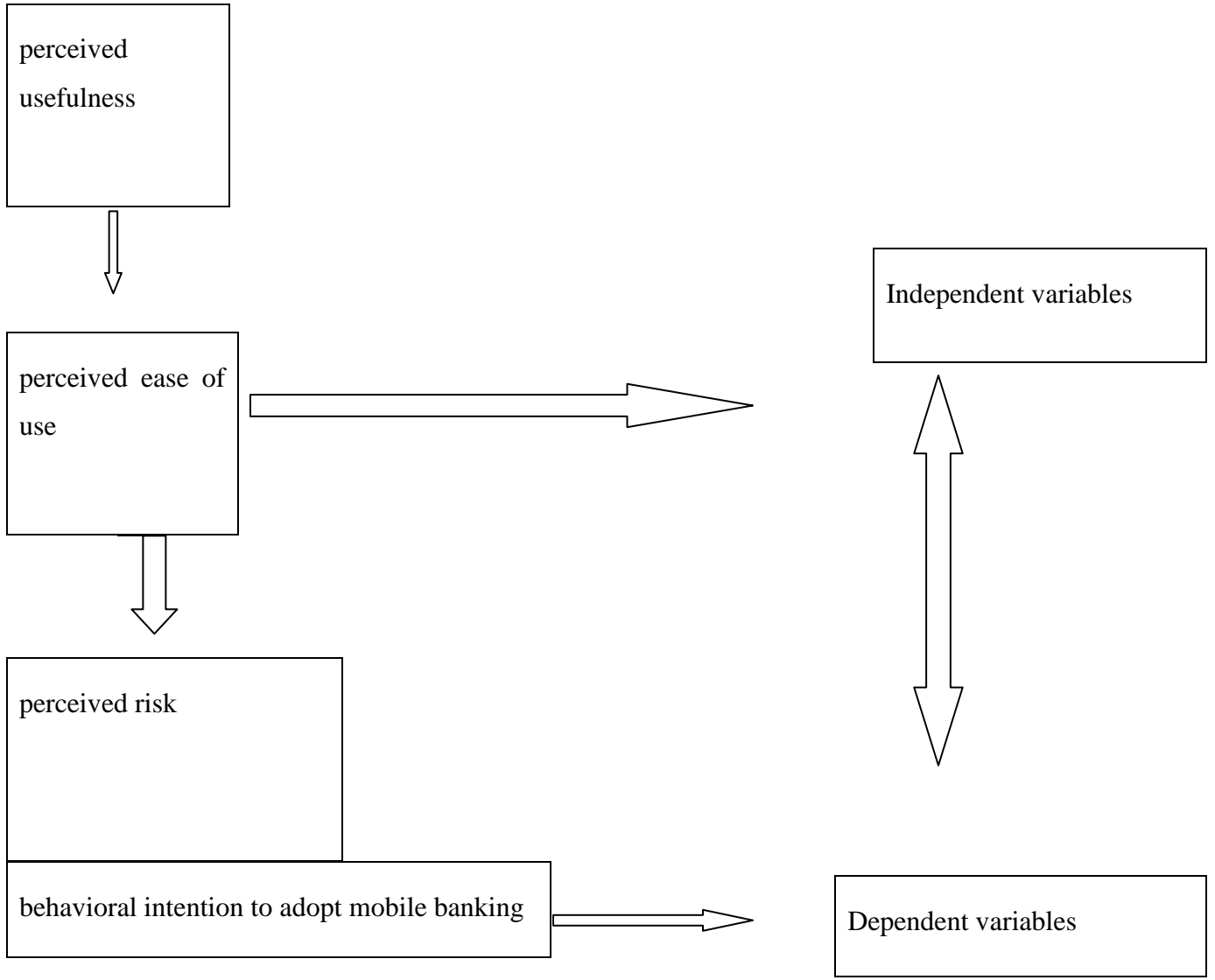
In this research paper since the variables of interest are highly technology related and technology related conceptual frameworks is used. Despite the growing interest by organizations to use technology in their business, user acceptance of the technology becomes a problem. The user technology acceptance has become main research topic in the last three decades. And various researchers develop various technology acceptance models and theories and among this technology acceptance model is one of the most important model.

Technology acceptance model is an information system theory that models how users come to accept and use a technology. According to Chuttur (2009) “Although many models have been proposed to explain and predict the use of a system, the technology acceptance model has been the only one which has captured the most attention of Information Systems Community”. In related research Masinge (2010) stated that TAM has been extensively tested and validated and is widely accepted model, which can be modified and extended using other theories and constructs.

Based on the previous literature and better explanation of the model in relation to technology acceptance both theoretically and empirically this research project will use refined Technology acceptance model Davis (1989) and Venkatesh (1996) which mediating effect of attitude could be excluded as empirical evidence found that the attitude element did not fully mediate the effect of perceived usefulness on intention to use. However, as the many empirical research shows the two independent variables perceived ease of use and perceived usefulness are not enough to explain mobile bank adoption behavior of customers. As result many researcher include other factors on top of the basic perceived usefulness and perceived ease of use such as perceived risk, trust, relative advantage etc. In this research paper like other research works reviewed in the empirical literature review Karma (2014) and Oluoch (2015) additional variable namely perceived risk in addition to basic perceived usefulness and perceived ease of use will be added.

Therefore, the three independent variables such as perceived usefulness perceived ease of use and perceived risk are included as an independent variables in the model. The dependent variable of the model is behavioral intention to adopt mobile banking.

Figure: 1 **Conceptual Framework**



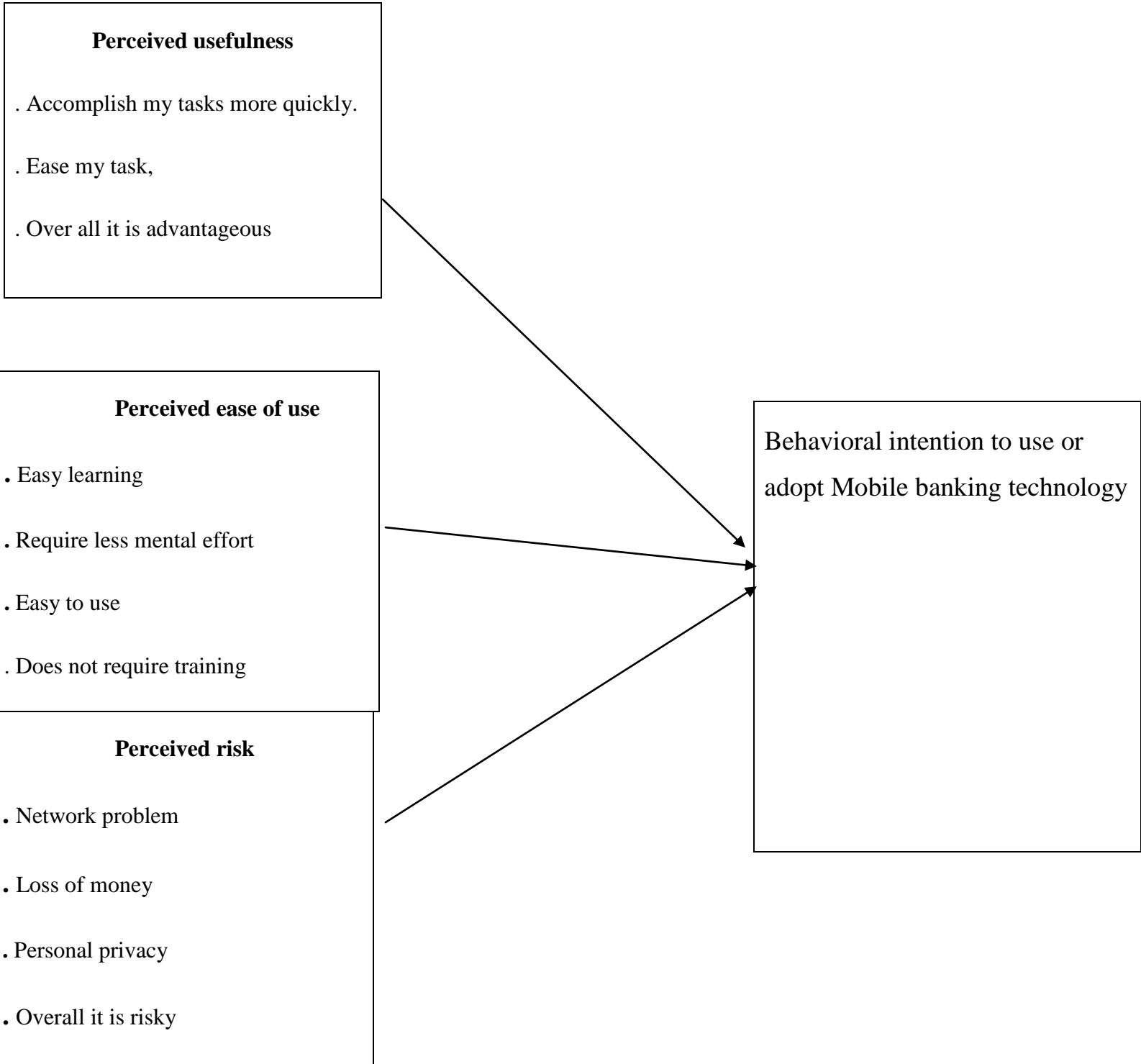


Figure 2: Conceptual Framework Adopted for the Research from TAM (Davis, 1989 and Venkatesh, 1996) with Perceived Risk as an Additional Factor by the Researcher

Note to the Conceptual Model Adopted:

□ External factors such as design features as mediating factors of perceived usefulness, perceived ease of use and perceived risk are excluded in the research models since these external variables are exogenous to the model. In addition to that the technology acceptance models tries to analyze for a given technology how will perceived usefulness, perceived ease of use affect users intention to adopt mobile banking technology within the model.

□ And refined technology acceptance model by Davis (1989), and Venkatesh (1996) suggest that the mediating effect of attitude could be excluded as empirical evidence found that the attitude element did not fully mediate the effect of perceived usefulness on intention to use. Other researches reviewed in the paper Karma (2014), Oluoch (2015) also excluded attitude towards using the system as mediating variable toward the behavioral intention to adopt mobile banking technology. In this research work also attitude towards using the system is excluded based on the empirical findings from previous research Davis (1989) and Venkatesh (1996).

□ Actual system use is variable outside the model as can be seen from figure four of the TAM model. Besides the actual usage of the mobile banking technology is affected through behavioral intention to adopt mobile banking technology which is included in the model.

□ On top of the basic Technology Acceptance Model variables i.e., perceived usefulness, perceived ease of use many researchers include additional variables as an independent variables in technology adoption among these perceived risk is included in previous research works by Karma (2014), Oluoch (2015). Since risk perception by potential users of a technology may influence the users' intention to use the technology. In this research work like the previous research works perceived risk is believed to affect users' intention to adopt the technology in Ethiopia since the technology is at early stage in Ethiopia. For instance perceived risk related to network problems, loss of money as result of operation mobile banking, personal privacy etc. is critical risk factors in Ethiopia like other developing countries.

□ Accomplishment of task more quickly, eases my task, and overall it is advantageous are factors that make up the variable perceived usefulness.

□ Easy learning, require less mental effort, easy to use and does not require training are factors that make up the variable perceived ease of use.

□ Network problem, loss of money, personal privacy, overall it is risky are factors that make up the variable perceived risk. Besides the perceived risks are connected to the dependent variable in broken line since the variable is an added variable on top of the basic TAM model.

Chapter Three

3. Research Design and Methodology

3.1. Research design/approach

The data analysis of this research paper is based on descriptive statistics such as frequency, percentage, mean and standard deviation. The descriptive statistics used mainly to understand the customers' profiles and the perception of customers towards the usefulness ease of use and risk of mobile banking adoption which is help us to answer the research questions related to customers' perception. The current study is adopting mixed methods approach. Mixed method approach focuses on collecting, analyzing and mixing both quantitative and qualitative data in a single study or series of studies. The decisive argument here is that the use of both quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach achieves alone. Mixed method research involves both collecting and analyzing quantitative and qualitative data by using both primary data like a well structured questionnaire of selected NIB International Bank and secondary data will be collected by using different journals, E-payment report analysis of the bank, and review of previous research from various websites.

3.2. Sampling/ Target population

Currently there are more than 19 banking institutions in Ethiopia, both private and public which are in operation. Only Nib International Bank S.C considered in this study, the researcher selected five branches using Purposive sampling technique and respondents are selected in convenient sampling method due to difficulty of accessing sample customers, which means the selection of the branches was made in a way that the researcher could get sufficient data regarding Mobile-banking. These branches selected or considered in this study because of their establishment age among other branches and the number of mobile banking users more than any other branches

3.3. Target Population and Sample size

The population of interest for this research is Nib International Bank selected branches customers. The sampling design applied for the research is two level sampling. Initially Purposive sampling is used to select bank branches based on the size of the branches and their level of business activities. The reason behind such sampling design is to get higher number of customers in a single place within short period of time. Sample size for the study is determined using the formula described below as stated used by Israel G.P. (1992) and used by Olouch (2012). According to the Planning and Strategy department, the total active saving account customers in the above mentioned branches are 82,133. From this population using the formula stated below sample size required for the study is 425 bank customers 85 questionnaires are distributed for each five branches.

Accordingly: Main, Tana, Sholla, Abinet and Adarash branches are selected using purposive sampling. Then convenience sampling is used to select sample respondents from selected branches by way of approaching customers visiting the branch banks with the help of branch managers and their staffs.

Variables	$n= N/(1 + N(E^2))$
N	82,133
E	0.05
n	425

N= the total population

n sample size

E= the level of precision

$$n= N/(1 + N(E^2))$$

3.4. Data Type and Source

The study conducted by collecting data from both primary and secondary sources. Primary data will be collected from the respondents based on a structurally designed questionnaire. It includes closed ended questions .And also, in order to address the research objectives properly and effectively the researcher gathered data based on the questionnaire generated from the conceptual model adopted for the research project, namely Technology Acceptance Model (TAM). Data types for the research is personal profile of sample customers, their perception about mobile banking usefulness, ease of use and risk associated with the adoption of mobile banking. Hence, the main source of data for this research is Nib International Bank S.C. of the selected five different branch customers.

3.5. Method of Data analysis

To analyze the data the researcher was used descriptive analysis to transform raw data into a form that are easy to interpret and to calculate frequency distribution, percentage distribution and mean and also used inferential statistics. The data gathered through questionnaires were analyzed and presented in the tables by using SPSS version 20 software.

3.6. Research Reliability and Validity

For the reliability & validity of this study, the researcher uses (SPSS) 20 to calculate Cronbach's alpha in order to determine how reliable the instrument/questionnaire is over the data collected. In addition scientific articles, journals and books are used to guarantee the reliability and validity of the data. The large part is, statically analysis tools like SPSS computer program and MS-Excel office application is also used to analysis obtained data in order to increase the validity.

3.7. Ethical Considerations

The purpose of the study is to explain the respondents and information given treated as confidential. In addition, at the time of data collection the researcher gives respect to the participants and asks permission about their voluntariness for response. The researchers also ethically consider not to put the participants at risk and not to act against the human rights of the country. Research permit will be acquired and consent from all the participants is obtained.

Chapter Four

4. Data Analysis and Discussion

4.1. Introduction

In this section analysis and discussion of the data gathered based on the research methodology designed for the research is conducted.

Statistics such as: mean, standard deviation and regression analysis to perform data analysis is used.

In order to make the data analysis data was collected using questionnaire designed and prepared both in English and Amharic. From the 425 questionnaires distributed 368 questionnaires are returned or 86.6 percent return.

In the following topics various demographic variables such as age, gender, income, education status, etc. of the sample respondents are analyzed. Then after data related to adoption factors of mobile banking as per conceptual model: perceived usefulness (PU), perceived risk (PR), perceived ease of use are analyzed and discussed using exploratory research design.

4.2 Demographic Profile of Respondents

4.2.1. Gender of Respondents

The respondent's gender profile indicates, as shown in the table two below, the majority of the respondents are male which accounts 71.7 percent of the sample respondents whereas female respondents account for 28.3 percent of the sample respondents. This shows that women lag behind men in using banking services which may also affect adoption of mobile banking adoption since the base for mobile banking adoption in the bank led model of m-banking is bank customers.

Table 1: Gender of respondents

Gender	Frequency	Percent
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Male	264	71.7
Female	104	28.3
Total	368	100

Table 1: Gender of Respondents (Source: Research Data, 2019)

4.2.2. Age of Respondents

The age of majority of the respondents as shown from table three is between 30-39 years of age numerically 44.8 percent. Whereas 32.1 percent falls between the ages of 40-49 that means more than 90 percent of the customers are within the age of 30 - 49 years. The fact that the majority of the respondents are young and adult implies it is an opportunity for mobile banking adoption in the coming periods.

Age category	Frequency	Percent	Cumulative percent
18 – 29	44	12.0	12.0
30 – 39	185	44.8	56.8
40 – 49	118	32.1	88.9
50 – 59	41	11.1	100.0
Above			
Total	368	100	

Table 2: Age of Respondents (Source: Research Data, 2019)

4.2.3. Education Level Attained

Education level attained by respondents as indicated by the table four below majority of the respondents were first degree holders which is 49.7 percent of the total respondents which is followed by TVET/diploma holders 35.1 percent. That means most of NIB selected branches customers have higher educational status which is an opportunity to NIB to provide advanced services such as m-banking since ease of use of the service will be better.

Educational level	Frequency	Percent	Cumulative percent
Secondary education	19	5.2	5.2
Tvet/Diploma	129	35.1	40.2
First degree	183	49.7	89.9
Master's degree	37	10.1	100.0
PhD			
Total	368	100.0	

Table 3: Education Level of Respondents (Source: Research Data, 2019)

4.2.4. Work Status of Respondents

Looking at the table five below about the work status of the respondents, most of them are employed which is above 69.3 percent of the total respondents. And 12 percent are self employed as can be seen from the table below.

This is a good opportunity for m-banking adoptions because those who are employed have time constraint since most of them are at work place when the bank branches are operational (have less time freedom). Hence, m-banking will give them time saving advantage by enabling customers to make

banking transactions and payments such as payment of utilities and other bills, money transfer etc. without traveling to the bank branches.

Work status	Frequency	Percent	Cumulative percent
Employed	255	69.3	69.3
House wife	32	8.7	78.0
Self-employed	44	12.0	89.9
Unemployed	37	10.1	100.0
Total	368	100.0	

Table 4: Work Status of Respondents (Source: Research Data, 2019)

4.2.5. Monthly Income Level in Ethiopian Birr

Referring to the table six below among the sample respondents 34.8percent earn monthly income between 1000-1999 birr. Whereas 19.0 percent of the respondents earn monthly income above 10,000.00 birr. Hence most of the customers in the selected branches have income between 1000–1999 and above 10,000.00 this implies the mobile banking transaction constraint is the income of the 34.8 percent of the respondents, but also following the 34.8 percent of respondents there are sample customers have disposable income to make economic transactions using mobile banking which are the respondents income level above 10,000.00 ETB.

Monthly income	Frequency	Percent	Cumulative percent
No income	36	9.8	9.8
1 – 999			
1000 –1999	128	34.8	44.6

2000 –3999	36	9.8	54.3
4000 –5999	32	8.7	63.0
6000 – 9999	66	17.9	81.0
Above 10000	70	19.0	100.0
Total	368	100	

Table 5: Monthly Income of Respondents in ETB (Source: Research Data, 2019)

4.2.6. Time to Get to the Nearest Bank

Among the sample respondents 73.4 percent need less than 20 minutes to access their bank branch physically as shown in table seven below. And 26.6 percent of the respondents replied that it will take them less than 45 minutes to access their bank branch and get banking services.

This shows us that the selected branch customers have better access to bank branches and their outlets thanks to the aggressive branch expansions by NIB. However, this can be a negative factor to mobile banking expansion because the availability of branches can solve the customers need for any transaction.

Time to get nearest bank	Frequency	Percent	Cumulative percent
Less than 20 minutes	270	73.4	73.4
Less than 45 minutes	98	26.6	100.0
More than 1 hour			
Total	368	100	

Table 6: Time to Get to the Nearest Bank of Respondents (Source: Research Data, 2019)

4.2.7. Do you find using MB more convenient than the branch based services

With regard to MB convenience than branch based service as shown below in table eight 77.4 percent of the sample respondents replied that they prefer MB than going to branch which means they have awareness in usefulness of MB. And the rest 22.6 sample respondents replied that branch based services are more preferable. This will lead as to raise another question it is a good opportunity for the bank most of the respondents answered that MB is preferable but why the bank can't take advantage on this customer's perception and it raises a question why 22.6 percent respondents is not preferring MB.

MB convenience	Frequency	Percent	Cumulative percent
Yes	285	77.4	77.4
No	83	22.6	100
Total	368		

Table 7: Do you find using MB more convenient than the branch based services (Source: Research Data, 2019)

4.2.8. Awareness of the Existence of Mobile Banking

The sample respondents' response with regard to the awareness of customers about the existence of mobile banking services as stated below in table nine, 94.8 percent of respondents are aware of the existence of mobile banking service in those branches whereas only 5.2 percent of the respondents lack of awareness about the existence of mobile banking service. This implies that most NIB customers in selected branches know the existence of m-banking but this does not mean that customers have adequate information about m-banking as can be referred from table ten which says that among those who respond that they know the existence of the services they need additional information about its usefulness, ease of use and risk.

Mobile banking awareness	Frequency	Percent	Cumulative percent
Yes	349	94.8	94.8
No	19	5.2	100.0
Total	368	100.0	

Table 8: Awareness of the Existence of M- Banking of Respondents (Source: Research data2019)

4.2.9. Usage Status of M- Banking

In terms of usage of mobile banking services the respondents reply indicate that among respondents who have cell phone ownership 48.1 percent of respondents' use mobile banking as can be seen from the table ten below. Whereas 16.6 percent do not use mobile banking services but they will use if they find out that the service is affordable, easier to use and less risk in the same table. And 35.3 percent of respondents replied that they totally not interested to use mobile banking service. In general 51.9 of the sample respondents do not use mobile banking as per the data from table ten below.

The finding implies that customers do not have adequate information about the usefulness, ease of use and risk related factors of mobile banking, because as can be seen from the finding 16.6percent are willing to use the service but needs further detailed information and understanding about the service. This shows us NIB specifically selected branches needs to work hard to make customers understand m-banking advantages in detail.

Mobile banking adaption	Frequency	Percent	Cumulative percent
Yes	177	48.1	48.1
No, but I will use if affordable, easier to	61	16.6	64.7

use and less risky			
Not interested	130	35.3	100.0
Total	368	100.0	

Table 9: Usage Status of M- Banking of Respondents (source Research Data, 2019)

4.2.10. Mobile Banking Service in Use

Among sample respondents who adopt mobile banking service 34.0 percent respond that they use check account balance service provided by NIB as shown below in table eleven. In the same table the lowest used services are money transfer 14.1 and make payment and other information services are not in use. Unfortunately 51.9 percent of respondents believe that mobile banking services provided by the NIB are not applicable to their needs. As can be seen the finding m-banking services the frequently used services are money transfer and account balance checking which are the traditional banking services and this implies that new services such payment using mobile banking needs to be pushed so that customers will exploit the benefit of m-banking services by effecting payment wherever they are without incurring transportation and time cost.

Mobile banking services	Frequency	Percent	Cumulative percent
Check account balance	125	34.0	34.0
Transfer money	52	14.1	48.1
Make payment			
Other information			
Not applicable	191	51.9	100.0

2. using MB would make it easier for me to carry out my tasks

	Frequency	Percent	Cumulative percent
Strongly disagree	19	5.2	5.2
Disagree	36	9.8	14.9
Neutral	199	54.1	69.0
Agree	86	23.4	92.4
Strongly agree	28	7.6	100.0
Total	368	100.0	

Table 12 Descriptive Statistics on using MB would make it easier for me to carry out my tasks

As we can see in table 12: most of the respondents are responded neutral this shows us the current MB users in NIB are not well informed about its usefulness, 54.1 percent of them responded neutral.

3. overall using MB is advantageous

Strongly disagree	47	12.8	12.8
Disagree	36	9.8	22.6
Neutral	122	33.2	55.7
Agree	122	33.2	88.9
Strongly agree	41	11.1	100.0
Total	368	100.0	12.8

Table 13 Descriptive Statistics on overall using MB is advantageous

The above table 13 shows us most of the respondents pick neutral and agree in a same frequency and percentage but based on the table this is a very low awareness on MB.

Table 14 Perceived Usefulness (PU) of M-Banking

	Number	Mean	Standard deviation
Using MB enablemetoaccomplishmytasksmorequickly	368	3.2799	.96558
UsingMBwouldmakeiteasierformetocarryoutmytasks	368	3.1848	.90025
OverallusingMBisadvantageous	368	3.2011	1.16151

Mean score < 3.39 was considered as low, 3.40 – 3.79 was considered as moderate and > 3.8 was considered as high as illustrated by comparison bases of mean of score of five point likert scale instrument (Zaidaton&Bagheri, 2009).

According to the table there is a gap of creating awareness through the customers in NIB as we can see in the table. This is a red light on MB expansion

4.2.12. Perceived Ease of Use (PEU) of M-Banking

A five point likert scale is used to measure respondents’ response concerning the perceived usefulness of mobile banking. Where: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree,5 = strongly agree

1. Learning to use MB would be easy

	Frequency	Percent	Cumulative percent
strongly disagree	169	45.9	45.9
Disagree	48	13.0	59.0
Neutral	13	3.5	62.5
Agree	123	33.4	95.9
strongly agree	15	4.1	100.0
Total	368	100.0	

Table 15 learning to use MB would be easy (Source: Research Data, 2019)

As we can see in the above table most of the MB users and non-users think that MB is sophisticated and believes that it is not easy to learn how to use.

2. Interaction with MB does not require a lot of mental effort

	Frequency	Percent	Cumulative percent
strongly disagree	157	42.7	42.7
Disagree	60	16.3	59.0
Neutral	34	9.2	68.2
Agree	98	26.6	94.8
strongly agree	19	5.2	100.0
Total	368	100.0	

Table 16: Interaction with MB does not require a lot of mental effort(Source: Research Data,2019)

As the table shows us most of them think that the MB is not user friendly and it requires a lot of mental efforts. This has a negative impact on MB expansion users must interact with MB easily.

3. It is easy to use MB to accomplish my banking task

	Frequency	Percent	Cumulative percent
strongly disagree	19	5.2	5.2
Disagree	48	13.0	18.2
Neutral	183	49.7	67.9
Agree	86	23.4	91.3
strongly agree	32	8.7	100.0
Total	368	100.0	

Table 17: Interaction with MB does not require a lot of mental effort (Source: Research Data, 2019)

The table shows as most of them responded neutral this means they do not prefer MB than going to branches physically and they are not using it at all

4. Using MB does not require training

	Frequency	Percent	Cumulative percent
strongly disagree	182	49.5	49.5
Disagree	80	21.7	71.2
Neutral	21	5.7	76.9
Agree	66	17.9	94.8
strongly agree	19	5.2	100.0
Total			

Table 18: Using MB does not require training (Source: Research Data, 2019)

Same as other tables this table 18 shows us most of the respondents think that MB requires training. This raises a question that NIB is not facilitating an adequate short training during activating the MB application.

	Mean	Standard deviation
LearningtouseMBwouldbeeasy	2.3668	1.43855
InteractionwithMBdoesnotrequirementaleffort	2.3533	1.38901
ItiseasytouseMBtoaccomplishmytask	3.1739	.94374
Using MB does not require training	2.0761	1.31629

Table 18: Perceived ease of use (Source: Research Data, 2019)

Most of the respondents responded above 3.39 mean score it shows a very low response on using of mobile banking according to user operational capability.

4.2.13. Perceived risk

1. MB may not perform because of network problem

	Frequency	Percent	Cumulative percent
Disagree	10	2.7	2.7
Neutral	228	62.0	64.7
Agree	95	25.8	90.5
strongly agree	35	9.5	100.0
Total	368	100.0	

Table 19: MB may not perform because of network problem (Source: Research Data, 2019)

As the table indicates us most of the respondents responded neutral, this shows us they have no information on using of MB network problem or they are not using MB at all.

2. When transferring money through MB I am afraid committing posting errors

	Frequency	Percent	Cumulative percent
Disagree	22	6.0	6.0
Neutral	46	12.5	18.5
Agree	169	45.9	64.4
strongly agree	96	26.1	90.5
Total	35	9.5	100.0

Table 20: when transferring money through MB I am afraid committing posting errors (Source: Research Data, 2019)

The table shows us most of the population agreed on they are afraid of committing posting errors and this is one of barriers to the expansion of MB

3. I feel not safe providing my personal information on MB

	Frequency	Percent	Cumulative percent
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strongly disagree	50	13.6	13.6
Disagree	103	28.0	41.6
Neutral	21	5.7	47.3
Agree	11	3.0	50.3
strongly agree	183	49.7	100.0
Total	368	100.0	13.6

Table 21: I feel not safe providing my personal information on MB (Source: Research Data, 2019)

4. Overall using MB is risky

	Frequency	Percent	Cumulative percent
strongly disagree	44	12.0	12.0
Disagree	87	23.6	35.6
Neutral	21	5.7	41.3
Agree			100.0
strongly agree	216	58.7	
Total	368	100	

Table 22: Overall using MB is risky (Source: Research Data, 2019)

As table 22 indicates us most of the MB users think that MB is very risky and this affects the NIB MB expansion plan.

4.2.14. Perceived risk

	Mean	Standard deviation
Mbmaynotperformbecauseofnetworkproblem	3.4212	.69978
IfeelnotsafeprovidingmypersonalinformationonMB	3.4728	1.62048
WhentransferringmoneythroughMBamafraidcommittingpostingerrors	3.2065	.98255
OverallusingMBisrisky	3.6984	1.60680

Table 23 Perceived risk (Source: Research Data, 2019)

This shows us all variables are moderate mean score, as it indicates most of them are not using MB by its risk for that reason they responded being neutral.

5. Relationship between Perceived Usefulness (PU) and Mobile Banking Adoption

In order to examine the relationship between perceived usefulness and intention to adopt mobile banking, regression analysis is used. And for this research model binary logistic regression is an appropriate model because the nature of the dependent variable response is binary (only two responses). Simple regression analysis is applied to test the first hypothesis (single variable case) with relationship of perceived usefulness as independent variable and mobile banking adoption as dependent variable. The result of the regression is indicated in the table fifteen below.

Table 24: Regression analysis of Mobile Banking adoption and Perceived usefulness (Source: Research Data, 2019)

Variables in the Equation	B	S.E	WALD	DF	SIG	EXP(B)
PU	0.352	.165	4.568	1	.033	1.422
CONSTANT	-1.903	.691	7.573	1	.006	.149

As shown in table 24 above the probability of the Wald statistics is 0.033 less than or equal to the level of significance of 0.05. Thus, the null hypothesis that the b coefficient for perceived usefulness is equal to zero is rejected. Besides the Wald statistics results implies the overall the model is fit. And the coefficient of perceived usefulness is 0.352 which is positive that means perceived usefulness and mobile banking adoption has positive relationship. And the standard error figure tells us there are no numeric problems in the data.

The finding of this research is consistent with past studies conducted on the relationship of m-banking with perceived usefulness (R.A. Oluoch, 2012, N. Solomon et al, 204). And commercial banks specifically NIB will be able to attract customers to mobile banking services if they can work on improving the perception of customers towards the usefulness of mobile banking.

6. Relationship between Perceived Ease of Use (PEU) and Mobile Banking Adoption

Table 25: Regression analysis of Mobile Banking adoption and Perceived ease of use (Source: Research Data, 2019)

Variables in the Equation	B	SE	WALD	DF	SIG	EXP(B)
PEU	-1.003	.176	7.064	1	.008	1.598
Constant	-2.280	.701	10.573	1	.001	.102

As shown in table 25 above the probability of the Wald statistics is 0.008 less than or equal to the level of significance of 0.05. Thus the null hypothesis that the b coefficient for perceived ease of use is equal to zero is rejected. Besides the Wald statistics results implies the overall the model is fit. But the coefficient of perceived usefulness is -1.003 which is negative that means perceived ease of use and mobile banking adoption has negative relationship. And the standard error figure tells us there are no numeric problems in the data since it is less than 2.

In this case the finding is not consistent with past studies conducted on the relationship of m-banking with perceived ease of use (Karma, 2014; R.A. Oluoch, 2012, N. Solomon et al, 204). Therefore, customers who perceive mobile banking is not easy to use will likely adopt mobile banking technology.

Hence, commercial banks like NIB shall work towards making customers perceive mobile banking easy to use. This is due to the fact technology to be adopted needs to be perceived as easy to use by the user as hypnotized by, and tested by TAM (Davis, 1985).

7. Relationship between Perceived Risk (PR) and Mobile Banking Adoption

Table 26: Regression analysis of Mobile Banking adoption and Perceived Risk (Source: Research Data, 2019)

Variables in the Equation	B	SE	WALD	DF	SIG	EXP(B)
PR	-.354	.159	4.927	1	.026	.702
Constant	.666	.516	1.664	1	.197	1.946

In the Table 26 above the probability of the Wald statistics is 0.026 which is less than the level of significance of 0.05. Thus the null hypothesis that the b coefficient for perceived risk is equal to zero is rejected. Besides the Wald statistics results implies the overall the model is fit. Whereas the coefficient of perceived risk is negative 0.354 hence, perceived risk and mobile banking adoption has negative relationship. And the standard error figure tells us there are no numeric problems in the data since it is less than 2.

The result is of h is consistent with past studies conducted on the relationship of m-banking with perceived risk (Karma, 2014; R.A. Oluoch, 2012,). Therefore, customers who perceive mobile banking as risky are afraid of adopting the technology. Hence, commercial banks specifically NIB shall work towards minimizing the risk factors specifically network problem in the case of NIB to reduce the risk perception of customers towards the technology and increase the probability of mobile technology adoption by customers.

B- This is the coefficient for the constant (also called the ‘‘intercept’’) in the null model And these are the values for regression equation for predicting the dependent variable from the independent variable. S.E. - This is the standard error around the coefficient for the constant. WALD&SIG- This is the Wald chi-square test that tests the null hypothesis that the constant equals 0. This hypothesis is rejected

because the p value (listed in the column called “SIG”) is smaller than the critical p-value of .05(or .01). Df - this is the degrees of freedom because there is only one predictor in the model namely the constant. Exp (B) - This is the Wald chi-square test s that null hypothesis that the constant equals 0. Chi-square and Sig – This is the Chi-square statistics and its significance level.

8. Relationship among Perceived Usefulness (PU), Perceived Ease of Usefulness (PEU), Perceived Risk (PR) and Mobile Banking Adoption

Table 27: Regression analysis of Mobile Banking adoption with Perceived usefulness, Perceived ease of use and Perceived Risk (Source: Research Data, 2019)

Variables in the Equation	BE	SE	WALD	DF	SIG	EXP(B)
PU	.245	.175	1.971	1	.160	1.278
PEU	-.233	.190	3.542	1	.060	1.429
PR	-.340	.160	4.526	1	.033	.711
CONSTANT	-1.768	.990	3.188	1	.074	.171

Table 28: Over All Relationship between Independent and Dependent Variables

OMNIBUS TESTS OF MODEL COEFFICIENTS				
		CHI SQUARE	DF	SIG
STEP 1	STEP	13.660	3	.003
	BLOCK	13.660	3	.003
	MODEL	13.660	3	.003

P = 0.003 < 0.005 the level of significance

In addition to the single variable regression analysis multiple regression analysis is applied in this research to test if all independent variables do not affect adoption of mobile banking technology. And as shown from table 27 above perceived usefulness has positive relationship with adoption of mobile banking technology perceived ease of use and perceived risk has negative relationship with adoption of mobile banking technology. Omnibus test is applied to gauge the model fitness and as result the model chi square is 13.66 (table 28) which means statistically significant at P=0.003 < 0.005 the level of

significance. Hence, the overall relationship between independent and dependent variables is supported in the model. The finding of this research is not similar to other developing countries like Kenya and Sudan as can be referred from the empirical review (Karma, 2014; R.A. Oluoch, 2012,) in part two of this research.

To sum up the finding of research and its implication perceived usefulness affect mobile banking adoption positively, perceived ease of use and perceived risk affect mobile banking adoption negatively. An improvement in the perception of customers about its usefulness, ease of use will increase the probability of mobile banking adoption. And activities which will reduce customers' perception about the riskiness of mobile banking will lead to better probability of customers' adoption of mobile banking.

Chapter Five

5. Summary Conclusion and Recommendation

5.1. Summary and Conclusion

The research paper uses refined TAM model with additional variable perceived risk to understand customers' perception of the factors that affect adoption of mobile bank technology in the case of NIB selected five branch customers and following are the summary of the findings of the research and its implication.

The responses of the sample respondents indicate most of the respondents 94.8 percent of the respondents are aware of the existence of mobile banking. On the other hand even if most of the respondents are aware of the existence of mobile banking service only 48.1 percent of respondents use mobile banking services. Whereas, 16.6 percent of sample respondents do not use mobile banking but they are ready to use it if they found out that the service is perceived as useful, easy to use and free of risk. These indicates that even if people are aware of the existence of mobile technology significant number of customers among the sample respondents do not have adequate information about its usefulness, ease of use and risk.

The main objectives of this research are to understand the relationship of perceived usefulness, perceived ease of use and perceived risk independently and together with mobile banking technology adoption. The first objective of this research work is to understand the relationship between perceived use of mobile banking and adoption of mobile banking technology. The finding of the research shows that perceived usefulness has positive relationship with mobile banking adoption and customers also perceive mobile banking as useful but more frequency they responded moderate this is not enough but a hope for the bank if they work hard on creating awareness on mobile banking usefulness in detail. And if mobile technology is perceived as useful then based on the empirical evidences about research model used in this paper and potential customer are ready adopt the technology.

The second objective of this research is to understand the relationship between perceived ease of use of mobile banking and adoption of mobile banking technology. The finding of the research shows that perceived ease of use has negative relationship with mobile banking adoption and customers perceive mobile banking is not easy to use. But if mobile technology is perceived as easy to use then based on

empirical evidences about the research model used in this paper potential customer are ready to adopt the technology.

The third objective of this research work is to understand the relationship of between perceived risk of mobile banking and adoption of mobile banking technology. The finding of the research shows that perceived risk of mobile banking has negative relationship with mobile banking adoption. The source of customers' perceived risk of mobile banking as per the finding of the research is being afraid of committing errors while posting. However, other risk factors considered in the research work are not perceived as risky in the use of mobile banking. And if mobile technology is perceived as risky then potential customers will be refrained from adopting the technology.

The multiple regression analysis conducted in the research shows as perceived usefulness has positive relationship with mobile banking technology adoption whereas perceived ease of use and perceived risk has negative relationship with mobile banking technology adoption but perceived risk is not significant.

4.2. Recommendation

- NIB shall deploy reliable network infrastructure and system to ensure mobile banking services operate smoothly so that it can reduce the perceived risk by customers regarding mobile banking technology.
- Ethio telecom as mobile network service provider shall give special attention to mobile banking technology from its side to provide reliable network to commercial banks specifically NIB as the customers perceive the mobile network risky to adopt mobile banking.
- NIB and its selected five branches in particular shall promote mobile banking services to its customers using various promotional tools appropriate to the target market so that it can increase the awareness and perception of potential customers about the technology's usefulness, ease of use as well as its risk.
- NIB shall broaden the service portfolio under mobile banking technology to make the service more useful and as well to be perceived useful in the minds of its customers.

□ NIB shall produce user guide for mobile banking services using various means such as booklets, flyers, and in electronic means such as website based electronic documents to make use of mobile banking easier for existing and potential customers.

□ And finally although, this research is conducted based on the case of NIB Customers the researcher believes that the finding and the recommendation of the research can be applied to other commercial banks taking in to account the specific context of the organizations.

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JULY, 2019

Appendix

St. Mary's University School of Graduate Studies

Factors Affecting Adoption of Mobile Banking: in the case of Nib International Bank S.C.

Dear Participants; The questionnaire is to collect data for Factors Affecting Adoption of Mobile Banking: in the case of Nib International Bank S.C. The information that you offer me with the questionnaire will be used as primary data which I am conducting as a partial requirement of Masters of Business Administration. With sincerity I would like to extend my deep appreciation to you for the willingness and cooperation in undertaking this valuable research. I ask your kind cooperation in answering the questions as truthfully as possible and your response will be highly confidential. Yours sincerely thank you for your assistance

By: BekaluTibebe Mobile--251910350517 Advisor: Hailemariam Kebde (PhD)

2019

ADDIS ABABA

	User Demographics	Categories	Mark Applicable with Cross (X)
1	Gender	Male	
		Female	
2	Age	18 -29	
		30 -39	
		40 -49	
		50 -59	
		Above 59	
3	Highest Level of Education Attained	Secondary Education	
		TVET/Diploma	
		First Degree	
		Master's De	
		PHD	
4	Work Status	Employed/Working	
		House Wife	
		Student	
		Self Employed	
		Unemployed	
		Pensioner/Retired	
5	Monthly Income Level in Ethiopian Birr	No Income	
		Between: 1 - 999	
		Between: 1000 - 1999	
		Between: 2000 - 3999	

		Between: 4000 - 5999	
		Between: 6000 - 9999	
		Above: 10000	
6	Do you find using MB more convenient than the branch based services?	Yes	
		No	
7	Time to get to the nearest bank	Less than 20 minutes	
		Less than 45 minutes	
		More than 1 hour	
8	Are you aware of the existence of Mobile Banking	Yes	
		No	
9	If yes to question number 8 Do you use Mobile Banking?	Yes	
		No, But I will use if affordable, easier to use, and less risky	
		Not interested	
10	If yes to question number 9 what do you Use mobile banking for?	Check Account Balance	
		Transfer Money	
		Pay bill	
		Others	
		Not Applicable	

Section II: Five Point Likert's Scale

Please complete the following questionnaire on scale of 1 to 5. 1-strongly disagree, 2-disagree, 3-neutral, 4-agree, and 5-strongly agree

1. What is your statement on Statement on perceived usefulness (PU)

No	Construct	strongly disagree	disagree	neutral	agree	strongly Agree
11	Using Mobile Banking would enable me to accomplish my tasks more Quickly					
12	Using Mobile Banking would make it easier for me to carry out my tasks					
13	Overall using mobile banking is Advantageous					

2. What is your statement on perceived ease of use (PEU)

No	Construct	strongly disagree	disagree	neutral	agree	strongly Agree
14	Learning to use mobile banking would be easy					
15	Interaction with mobile banking does not require a lot of mental effort					
16	It is easy to use mobile banking to accomplish my banking task					
17	Using mobile banking does not require training					

3. What is your statement on perceived risk

No	Construct	strongly disagree	disagree	neutral	agree	strongly
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		disagree				Agree
18	Mobile banking may not perform well because of network problem					
19	When transferring money through mobile banking I am afraid I will Lose money due carless mistakes such as wrong input of account number and wrong input of amount of money					
20	I would not feel totally safe providing personal privacy information over mobile banking					
21	Overall using mobile Banking is risky					

Thank you Very Much!!!

ቅድስት ማርያም ዩኒቨርሲቲ

ማኔጅምንት የትምርት ክፍሉ-ኤግዝኩቲቭ ማህተር ስልፍቢ ዝነስኢድ ሚንስትራ ስነ

ይህ መጠይቅ የተዘጋጀው በንብ እንተርናቨናል ባንክ የደንበኞች የሞባይል ባንክ አገልግሎትን ለመጠቀም በደንበኞች እየታከን ገርተፅ የሚፈጥሩ ምክንያቶችን ለመረዳት የምደረግ ጥናት ነው። ጥናቱ ለምሳሌ ከደንበኞች አካባቢ ቅድስት ማርያም ዩኒቨርሲቲ ኤግዝኩቲቭ ማህተር ስልፍቢ ዝነስኢድ ሚንስትራ ስነ መሪ ቅተ ማሪነው። እርስዎ የሚሰጡን መረጃ ለጥናት ብቻ የሚወልድ መሆኑንና የመረጃው ምስጢር ጥራት የተጠበቀ መሆኑን ማረጋገጥ እፈልጋለሁ። በመሆኑም ድግዜዎን በመስጠት ለምስጢርን መረጃ እጅግ እናመሰግናለን።

እባክዎን መልስዎን በቀኝ በኩል ባለው ክፍል ያንዳንዱ ጥያቄ ትይዩ በታዎች (X) ምልክት በመሙላት ይግለፁ። እንዲሁም ስምዎን መግለፅ አያስፈልግም።

ክፍሉ I: አጠቃላይ መረጃዎች

No.	አጠቃላይ መረጃዎች	አማራጮች	(X)
1	ጾታ	ወንድ	
		ሴት	
2	ዕድሜ	18 -29	
		30 -39	
		40 -49	
		50 -59	
		59 በሊይ	
3	የትምህርት ደረጃ	ሁለተኛ ደረጃ	
		ድጥሎማ	
		መጀመሪያ ደረጃ	
		ሁለተኛ ደረጃ	
		ዶክተሬት	
4	የስራ ሁኔታ	ተቀጣሪ	
		ተማሪ	
		የግል ስራ	
		ስራ ፊላማ	
		ጡረተኛ	
5	ወር የላው	ገብ የላው	
		ከብር: 1-999	
		ከብር: 1000 - 2999	

		ከብር:3000 - 6999	
		ከብር:7000 - 14999	
		ከብር:15000 - 19999	
		ከብር20000በላይ	
6	በአቅረቢያዎ ወዳለው የባንክ ቅርንጫፍ ለመሄድ ምን ያህል ጊዜ ወስድቶታል?	ከ20 ደቂቃ በታች	
		ከ45 ደቂቃ በታች	
		ከአንድ ሰዓት በላይ	
7	የሞባይል አገልግሎት ተጠቃሚ ነዎት?	አዎ	
		አይደለሁም	
8	የንብረት ለውጥ ለመገኘት የሞባይል ባንክ አገልግሎት እንደምስጥ ያውቃለ?	አውቃለሁ	
		አላውቅም	
9	የንብረት ለውጥ ለመገኘት የሞባይል ባንክ አገልግሎት ተጠቃሚ ነዎት?	አዎ	
		አይደለሁም ነገር ግን የአገልግሎት ክፍያው ተመጣጣኝ ከሆነ እንዲሁም ለመጠቀም ቀላል ከሆነ ለመጠቀም ዝግጁ ነኝ	
		ፍላጎት የለኝም	
10	የንብረት ለውጥ ለመገኘት የሞባይል ባንክ አገልግሎት ተጠቃሚ ከሆኑ የትኞቹን አገልግሎቶች ይጠቀማሉ?	የባንክ ሂሳብ ምን ለማወቅ	
		ገንዘብ ለማስተላለፍ	
		ክፍያ ለመፈጸም	
		ሌሎች	

ክፍል II: የሞባይል ባንክ አገልግሎት ጠቀሜታ፣ አጠቃቀምና ስጋቶችን በተመለከተ

እባክዎትን የሚከተሉትን ጥያቄዎች በሰንጠረዥ ለመልስ በተዘጋጀው ክፍት ቦታ የ“X” ምልክት በመሙላት መልስዎን ያስቀምጡ

4. ስለ አገልግሎቱ ጠቃሚነት ምን ያስባሉ?

ተ.ቁ.	ጥያቄ	በፍጹም አልሰማም	አልሰማም	ገለልተኛ ነኝ	እስማማለሁ	ፍጹም እስማማለሁ
12	የሞባይል ባንክ አገልግሎት ጠቀም ስራ የንብቅል ጥፍና ለማከናወን ይረዳኛል					
13	የሞባይል ባንክ አገልግሎት ጠቀም ስራ የንጥል ልጅ ልጅ ልጅ					
14	በአጠቃላይ የሞባይል ባንክ አገልግሎት ጠቃሚ ነው					

1. ስለ አገልግሎቱ አጠቃቀም ቀላልነት ምን ያስባሉ?

ተ.ቁ.	ጥያቄ	በፍጹም አልሰማም	አልሰማም	ገለልተኛ ነኝ	እስማማለሁ	ፍጹም እስማማለሁ
16	የሞባይል ባንክ አገልግሎት ለመጠቀም በቀላሉ ለመረዳት ይቻላል					
17	የሞባይል ባንክ አገልግሎት ለመጠቀም ብዙ ማሳብ አይከፈልኝም					
18	የባንክ አገልግሎት ለመጠቀም የሞባይል ባንክ ቀላል ነው					
19	የሞባይል ባንክ አገልግሎት ለመጠቀም ስልጠና አይፈልግም					



2. የሞባይልባንክአገልግሎትበተመለከተየሚሰማዎትሰጋት

ተ.ቁ.	ጥያቄ	በፍፁም አልሰማም	አልሰማም	ገለልተኛ ነኝ	እሰማለሁ	ፍፁም እሰማለሁ
20	የሞባይልባንክአገልግሎትበኔትዎርክችግርምከኒያት በአግባቡአይሰራም					
21	በሞባይልባንክአገልግሎትገንዘብሰጥሰተላልፍበስህተትየተሳሳተመረጃለምሳሌየተሳሳተገንዘብመጠንወይምመሰልመረጃዎችከሞላሁችግርይፈጠርብኛልብየአሰጋለሁ					
22	የግልመረጃዎችንየሞባይልባንክአገልግሎት ለመጠቀምመስጠቴስጋትይፈጠርብኛል					
23	በአጠቃላይየሞባይልባንክአገልግሎትመጠቀምችግር ልኖረውይችላልየሚልሰጋትአለ					

ውድግዜዎትንመሰዋትአርገውመጠይቁንበመሙላትዎትበጣምአመሰግናለሁ!!!