



AAU SCHOOL OF COMMERCE

Marketing management department

**FACTORS INFLUENCING THE ADOPTION OF MOBILE BANKING
SERVICE: THE CASE OF SELECTED COMMERCIAL BANKS IN
ADDIS ABABA, ETHIOPIA**

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ADVISOR

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APPROVAL SHEET

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SERVICE: THE CASE OF SELECTED COMMERCIAL BANKS IN ADDIS
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DECLARATION

I, Samuel Derbew declare that this research work entitled as “**Factor influencing adoption of mobile banking service; the case of selected commercial banks in Addis Ababa, Ethiopia**”, is the outcome of my own effort and study and that all sources of materials used for the study have been duly acknowledged. I have produced it independently except for the guidance and suggestion of the research advisor. This study has not been submitted for any degree in any University. It is offered for the partial fulfillment of the degree of MA in Marketing Management.

By: Samuel Derbew

Signature: _____

Date: 27/06/2019 G.C

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Acronyms

PU - Perceived Usefulness

PEOU - Perceived Ease of Use

DOI - Diffusion of Innovation

HTML - Hyper Text Mark-up Language

TRA - Theory of Reason Action

UMTS - Universal Mobile Telecommunication System

BI - behavioral Intention

SIM - Subscriber Identity Module

M-Banking - Mobile Banking

NBE - National Bank of Ethiopia

CBE - Commercial Bank of Ethiopia

WAP - Wireless Application Protocol

TAM - Technology Acceptance Model

Abstract

*This study is aimed to investigate Factor influencing adoption of mobile banking service in case of commercial banks in Ethiopia. By taking the research objectives and questions into considerations, only quantitative research approach and both descriptive and explanatory research design was used. The study was delimited to convenience and purposive sampling techniques. Quantitative data are collected using a structured questionnaire which has been developed and distributed to a sample of 384 Mobile banking users. With a response rate of 89.7%, 332 questionnaires have been returned and were valid for data analysis. The quantitative data was analyzed by using descriptive and inferential analysis. The findings of descriptive statistics have shown that, the mean score of Mobile banking adoption variables i.e. perceived usefulness, perceived ease of use, security and privacy, self-efficacy and facilitating condition (in terms of bank support) have been 4.03, 4.17, 3.17, 4.03, 2.60, respectively. All selected dimensions of independent variables have a significant correlation with the dependent variable “mobile banking adoption” with 95% confidence level & at 0.05 p-value, by scoring a Pearson Correlation Coefficient “R-value” value of 0.744**, 0.616**, 0.717**, 0.719**, 0.705**, respectively. In this case relatively perceived usefulness had a higher strong relationship with mobile banking adoption. Likewise, the empirical findings of the multiple regression indicated that the predictor variables perceived usefulness ($\beta=0.191$; $P<.05$); perceived ease of use ($\beta= 0.303$; $P<.05$); Security and privacy ($\beta= 0.047$; $P<.05$); Self-efficacy ($\beta= 0.117$; $P<.05$), Bank support ($\beta= 0.029$; $P<.05$); have a positive and significant effect on adoption of mobile banking. These findings are beneficial for commercial banks in Ethiopia to identify factors that influence the adoption of mobile banking service. The study recommends banks should focus on offering a mobile banking service that is easy to understand and use. Likewise, there should be More studies on mobile banking adoption to be conducted in other areas of the country to find out if there could be any similarities.*

Key words: Perceived usefulness, perceived ease of use, security and privacy, self-efficacy, facilitating condition (bank support), mobile banking adoption.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Globalization is a political, social, cultural and economic phenomenon that is revolutionizing the way we live. In particular, the convergence of computer and telecommunications technologies has totally changed the way we receive, store, transmit and share information. The rapid diffusion of the Internet created a new host of opportunities for business worldwide (Nehmzow, 1997).

The electronic technology is playing a major role for the world in a numerous variety of business activities. Rapid development of internet and information technology has also affected the banking industry world widely in different form. Banks seek always to achieve competitive advantage to be first in market; so, they keep looking for new technology which can improve the bank services. For this mater “A clear and emerging new channel in the space of banking and payments is mobile.” (Vanessa, 2012, abstract).

According to Petrova K. (2002) M-banking can be defined as the ability to conduct bank transactions via a mobile device, or more broadly to conduct financial transactions via a mobile terminal. This definition is a suitable working one as it includes not only basic services such as bank account statements and funds transfer but also electronic payment options as well as information based financial services (e.g. alerts on account limit or account balance, access to stock broking). M-banking is an invaluable and powerful tool driving development, supporting growth, promoting innovation, and enhancing competitiveness (Nath, R. 2001).

Mobile Banking has gained non-negligible relevance for banks today. Developments in the banking sector which is increased competition on account of technological developments coupled with the process of globalization have produced new challenges for banks. Mobile Banking presents an opportunity for banks to retain their existing, technology-savvy customer base by offering value-added and innovative services. It might even help attracting new customers (Krueger, 2001).

Further, Mobile Banking presents a chance to generate additional revenues. Though many of such people argue that internet and other technology-based transaction is not safe, not practical and would lead to fraud, a lot of people think it safer, flexible in time and can be done anywhere and anytime (Chowdhury and Ahmmad 2011). Cost and availability are the other factors which might influence the adoption of mobile banking. Thus, it is necessary to have an in-depth analysis for the mobile banking service provider to identify the factors influencing the adoption of mobile banking. A clear understanding of these factors will enable mobile banking service providers to develop suitable marketing strategies, business models, processes, awareness programmers and pilot projects (GSMA 2009).

As of end September 2017, the number of banks operating in Ethiopia remained at 18, of which 16 were private banks. These banks opened 204 new branches during the first quarter of 2017/18 thereby increasing the total number of bank branches to 4,461. Therefore, currently one branch serves 21,6511 people on average. Of the total bank branches, about 34.4 percent were located in Addis Ababa. Private banks accounted for about 67.5 percent of the total bank branches in the country. (NBE quarterly bulletin, 2017/2018, vol. 34). Currently there are six commercial banks that commenced M-banking service, albeit the M-banking regulation directive was issued in January 2013. In spite of these, mobile banking is a very recent phenomenon in Ethiopia and only six of the eighteen commercial banks have started mobile banking.

1.2 Statement of the problem

Although mobile banking yields enormous benefits, some scholars found that mobile banking adoption among banks customers remains small (Donner and Tellez, 2008 and Laukkanen, 2007). Despite the fact that numerous mobile banking adoption studies have been investigated by Luam and Lin (2005), Mattila(2003) and Zhou(2010), most of them were conducted in countries such as Korea (Chung and Kwon, 2009), Singapore (Riquelmeand Rios, 2010), Brazil (Laukkanen 2010), Taiwan (Luam and Lin, 2005), and China (Wang 2010). Only a few numbers of studies have been undertaken in developing countries.

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. For instance,

Commercial Bank of Ethiopia, has around 1.7 million users as of June 30, 2018 (CBE, website). Kenya stands out in several respects, according to the Safaricom's half year results for 2017-2018, M-PESA was reported to have 21 million active customers (CNBC KENYA, 2018). M-PESA started operating in Kenya in 2007, and has taken the lead in terms of innovation for providing more inclusive access to finance for a large part of the population (KARIUKI NYAGA, 2014).

When we look at the growth in mobile phone penetration in Africa in general and particularly in Ethiopia it is moving up at higher rate. In Ethiopia the number of mobile phone subscribers has now reached, more than 51 million as of March 2017 as per the 2017/2018 kpmg survey report. Based on the research article entitled "Mobile Banking in Ethiopia: Challenges and Prospects" that is published on the quarterly NBE Bulletin of Birritu Number 119, of February 2015, the mobile banking development in Ethiopia is at its starting stage. Currently mobile banking practice in Ethiopia can be considered as accessing the core banking system within the bank. Hence, only a customer of a given bank can access some banking services via his/her mobile phone. Looking past research studies, it is evident that not much research has been carried out in Ethiopia regarding factors that influence the adoption of adoption of mobile banking. Traditional branch-based retail banking remains the most widespread method for conducting banking transactions in Ethiopia. Internet technology is rapidly changing the way personal financial services are being designed and delivered. Now most of the commercial banks in Ethiopia are trying to introduce internet based electronic banking systems to improve their operations and to reduce costs. Despite all their efforts aimed at developing better and easier internet banking systems, these systems remain largely unnoticed by the customers and certainly is seriously under-used in spite of their availability.

Even though some of the commercial banks in Ethiopia start introducing mobile banking service, the acceptance of this technology is very low. Coupled with the low number of undertaken researches in the adoption of mobile banking service in Ethiopia there is a need to carry out this research in order to help financial institutions understand the factors affecting the adoption of mobile banking service. Also, most of the research studies are based on TRA (theory of reasoned action) and TAM (Technology acceptance model) theories, which consist of two constructs; perceived ease of use and perceived usefulness which are not sufficient to explain factors affecting adoption of M-Banking. there is a need to adopt more theories in this study such as innovation diffusion theory, the revised unified theory of use and acceptance of technology and Extension of

Technology Acceptance Model (ETAM) in order to include more variables. Finally, based on the issues stated on the problem statement, this research has been undertaken to study factors influencing the adoption of mobile banking services in Ethiopia.

This study varies from pervious related studies in such a way that it tries to study whether there is a statistical significant difference in demographic factors which are Gender, Age and Education while considering Adoption of mobile banking service.

1.3 Research Question

1.3.1 Main Question

- What are the different factors that influence adoption of mobile banking in the case of commercial banks in Addis Ababa, Ethiopia?

1.3.2 Specific Question

- How Does perceived usefulness affect customer adoption of mobile banking?
- How Does perceived ease of use affect customer adoption of mobile banking?
- Dose security and privacy has an influence in adoption of mobile banking?
- How does self-efficacy affect customer adoption of mobile banking?
- How Dose facilitating conditions (bank support) influence customer adoption of mobile banking?
- Is there a significant difference in adoption of mobile banking while taking demographics (Gender, age and education) as a basis?

1.4 Research Objectives

1.4.1 Main Objectives

To identify different factors influencing the adoption of Mobile banking, in the case of commercial banks in Addis Ababa, Ethiopia.

1.4.2 Specific Objectives

The specific objectives include:

- To determine whether perceived usefulness have an effect on the adoption of mobile banking.
- To determine whether perceives ease of use have an influence on the adoption of mobile banking.
- To examine the influence of security and privacy on the adoption of mobile banking.
- To evaluate the effect of self-efficacy on the adoption of mobile banking.

- To determine whether facilitating conditions (in terms of bank support) have an effect on the adoption of mobile banking.
- To determine the existence of statistical difference in demographic factors (Gender, Age and education level) while considering Adoption of mobile banking service.

1.5 Significance of the Study

This research contributes to the financial services sector, in that it brings an understanding of consumer behavior with regards to the adoption of mobile banking services. It also contributes to active academic research and adds to the understanding of technology adoption and mobile banking services in the case of commercial banks' in Addis Ababa, Ethiopia.

In addition, it will assist players in the mobile banking market to understand the factors influencing adoption of mobile banking. Hence, it enables them to come up with better services than the existing ones and assist researchers and students in gaining an understanding of the current trends in mobile technologies and their impact. This study will also add to the foundation of knowledge being laid for research which related to mobile banking technologies.

1.6 Scope of the study

The scope of this study is geographically limited to Addis Ababa and this study used the banking industry to examine factors affecting the adoption of mobile banking service.

The study aims to cover the main constructs derived from the extension of TAM with the integration of bank support, security and privacy and self-efficacy. After critically reviewing the literature that pertain the developments in Ethiopia's mobile banking situation some important information gathered, which is the context of this study. The variables Perceived useful, perceived ease of use, self-efficacy, security and privacy and facilitating conditions (in terms of banks support) are considered to as factors which influence the adoption of mobile banking.

The study was based on TAM and integration of security and privacy, bank support and self-efficacy in predicting factors influencing adoption of mobile banking in Ethiopia, thus, further studies can be conducted in an attempt to explore other additional factors including Compatibility and perceived trust that have not been identified in the model but that might also have significant impact on adoption of mobile banking in Ethiopia. The researcher therefore believes there is further scope for research to be carried out on this topic.

1.7 Limitation of the study

No qualitative research was carried out. The researcher would have liked to have undertaken qualitative interviews after the survey which may have led to a deeper understanding of the factors influencing mobile banking adoption. The survey by its nature contains closed-ended questions allowing the researcher to collect quantitative data. The researcher would then conduct an interview using open ended questions to collect the narrative data. Due to time constraints it was not possible for the researcher to adopt this mixed method approach.

1.8 Organization of the study

This paper has five chapters. The first chapter consist background of the study, statement of the problem, research question, research objectives, significance of the study, scope of the study, limitation of the study and organization of the study. The second chapter deals with review of relevant literature, conceptual framework and research hypothesis. The third chapter also discusses the utilized methodology. In the fourth chapter, presentation, analysis, interpretation and summary of major findings were discussed. The last chapter consist of conclusion, recommendation and areas of future study.

CHAPTER TWO

LITERATURE REVIEW

2.2 Theoretical review

2.2.1 Mobile banking

The term 'mobile banking' is defined as 'the exploitation of mobile terminals, like mobile phones to connect with networks of a bank via the wireless application protocol (WPA)' (Zhou 2010). As the number of smartphones along with their users increase continuously, banks took the opportunity to make their services easier and developed the new service, the 'mobile banking'.

Using the mobile banking, banking transactions can take place in every place and time that is desired, given that there is access to the internet services. Thus, it can be said that mobile banking gives flexibility (more degrees of freedom) to banks' customers.

2.2.2 Perceived Usefulness

It is defined as the degree to which a person believes that using a particular technology will enhance his or her job performance. This idea derived from TAM model by Davis (1989) and is considered a significant factor affecting acceptance of an information system.

For the user of mobile banking this means: how useful does the user find the application, how can he improve his job tasks, decrease the time of doing his job and contributing to more accurate and efficient results.

2.2.3 Perceived Ease of Use

Perceived ease of use refers to the degree to which a person believes that using a particular application will be free of effort (Davis, 1989). Perceived usefulness and Perceived Ease of Use are significantly correlated with system usage as this has been proven by TAM application. Users believe that a given technology is useful but at the same time believe that the technology is too hard to use and the benefits of usage are outweighed by the effort of using the application (Davis and Arbor, 1989). If an online service is difficult to use, the customer is more likely to quit this service and chose another way of doing transactions that will be easier.

2.2.4 Self-efficacy

The component of self-efficacy is defined as the level of confidence a person has in his or her abilities to perform a task. If a person character or believes do not allow him to have confidence in his skills when using an application, this will probably have a reverse influence on technology usage.

The wide range of technological advances, the invention of Internet and evolvement of mobile banking requires individuals with willingness to adopt the new technological environment. Thus, when an individual is confident in his skills is more likely to be comfortable in using new technologies.

2.2.5 Facilitating conditions

Refers to the extent to which an individual believes that an organizational and technical infrastructure exists to support use of the system (Venkatesh 2003).

By capturing the concepts of perceived behavioral control (TPB/DTPB, C-TAM-TPB), facilitating conditions (MPCU), and compatibility such as work style (IDT), Venkatesh. [2003] defined facilitating conditions as the degree to which an individual believes that an organizational and technical infrastructure exists to support technology use. In UTAUT, Venkatesh. [2003] integrated 32 factors used in eight competing models into five constructs and empirically identified that behavioral intention and facilitating conditions were two direct determinants of adoption behavior. In the mobile banking adoption literature, Joshua and Koshy [2011] illustrated that the more convenient the access of respondents to computer and Internet, the more proficient their use of the computer and Internet, which results in a higher adoption rate of respondents using electronic banking.

2.2.5.1 Bank Support

Support by the bank to the users of Mobile banking is considered as an important factor influencing their behavior toward conducting online transactions. Customers need to know that their bank provides a well-educated help desk that will be able to guide and train them in case they need it. Problems may occur when using Internet banking and users might need bank support to complete their transactions. The issue for a bank is its clients to feel secure for their money transferred and confident for their bank superiority. It is important for the customers to contact directly with bankers when is required because this probably stimulate them more in using bank mobile services.

2.2.6 Security and Privacy

A common and widely recognized obstacle of mobile banking adoption has been the lack of security and privacy over the Web Sites and cellphones. (Bhimani, 1996; Quelch and Klein, 1996; Rhee and Riggins, 1997). Also, Sathye (1999) noted that security and privacy were significant major obstacles to the adoption of online banking in Australia. It should be noted that security issues are confronted by users and developers of internet security especially concerning e-banking, e-commerce and e-government.

It is expected that only people who perceive Mobile banking as a low risk activity would be available to use it. It also seems that users misunderstand the Internet technology and this leads to resistance on adopting it. Many users want to control the data that is collected through Internet.

2.2.7 Demographic Characteristics

Adopter categories give an insight for explaining the innovation diffusion rate and accordingly innovativeness of people (Rogers 1995). When the different aspects of early adopters are examined, it is claimed by Rogers that “relatively earlier adopters in a social system are no different from later adopters in age” (Hoffmann 2011, p.44). On the other hand, Venkatesh& Morris (2000) state the different adoption behaviors of older and younger adopters. So, age is perceived as an influential factor in this dissertation. Another claim of Rogers is presented about the education level, occupations and status. It is stated that “the relatively early adopters have more years of formal education, are more likely to be literate, and have higher social status and occupations” (Hoffmann 2011, p.44). So, education level, occupation and income level have also considered as influential on adoption of mobile banking services in this research.

2.3 Review of relevant theories

2.3.1 The Unified Theory of Acceptance and Use of Technology (UTAUT) Model

Venkatesh (2003) proposed and tested a unified information technology acceptance and use research model, called the Unified Theory of Acceptance and Use of Technology (UTAUT). The model integrates significant elements across eight prominent user acceptance models and formulates a unique measure with core determinants of user behavioral intention and usage. In this model the original UTAUT aims to explain user intentions to use an IS and subsequent usage behavior. Furthermore, UTAUT model suggests that there are a set of factors that influence the intention of the individual user acceptance (Feras, Mohammad, 2012). Venkatesh 2003, pp 446,

in their research article theorized that, four constructs play a significant role as direct determinants of user acceptance and usage behavior: Performance expectancy, Effort expectancy, Social influence, and Facilitating conditions. Gender, age, experience, and voluntariness of use are said to mediate the impact of the four key constructs on usage intention and behavior. Venkatesh (2003).

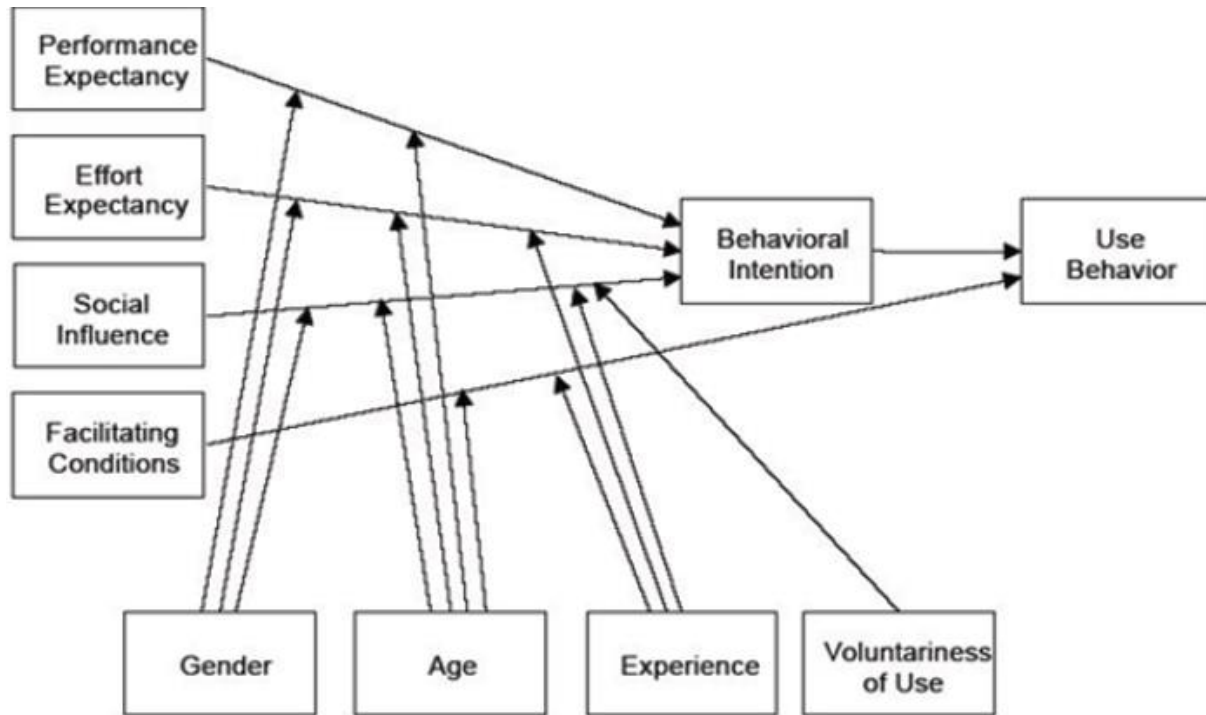


Figure 1. UTAUT model

2.3.2 Theory of Reasoned Action

Theory of Reasoned Action introduced by Ajzen & Fishbein in 1975, is a model that predicts and explains the behavior across a wide variety of domains. Development of TRA started in 1950s and the first research concerning TRA was published in 1967 (Ajzen & Fishbein). It is based on the assumption that consumers behave rationally and that they collect and evaluate systematically all of the available information. Furthermore, it is assumed that people take into account the effects of their possible actions and based on this reasoning make decision whether or not to take action (Ajzen & Fishbein, 1980).

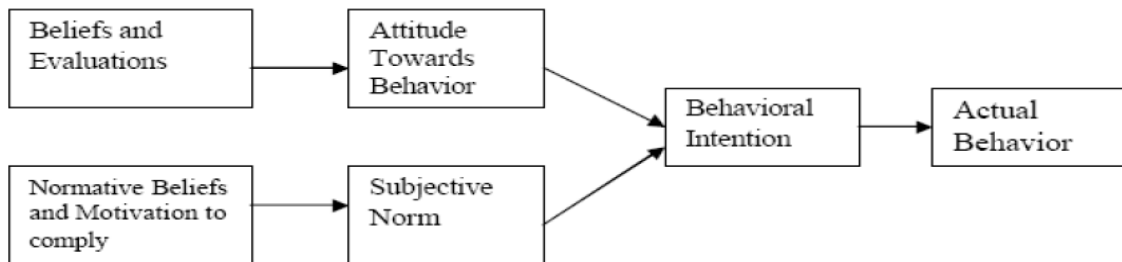


Figure 2. Theory of reasoned action

The conceptual framework of TRA is provided by the distinction between beliefs, attitudes, intentions and behaviors. According to TRA, Behavioral Intention (BI), Person’s Attitude (A) and Subjective Norms (SN) determine a person’s behavior.

2.3.3 Theory of Planned Behavior

The Theory of Planned Behavior adapted from Mathieson, identify that behavior is determined by intention while intention is predicted by three factors: attitude (A), Subjective Norms (SN), and Perceived Behavior Control (PBC).

Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) became the base of the Technology Acceptance Model (TAM), the most popular model in information systems theory.

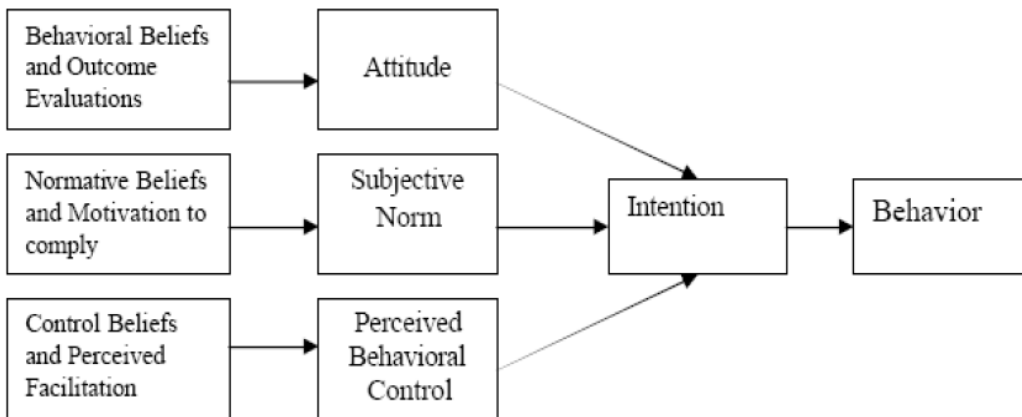


Figure 3. Theory of Planned Behavior

2.3.4 Technology Acceptance Model

One of the most utilized and influential model in studying information system acceptance is the Technology Acceptance Model or TAM (Davis 1989; Mathieson, 1991; Davis and Venkatesh, 1996; Gefen and Straub, 2000; Al-Gahntani, 2001). Although various articles for this model were written almost two decades ago, the model continues to be used extensively and the topic remains of high interest in the research area.

TAM has been tested in many studies (Davis, 1989; Mathieson, 1991; Adams , 1992; Segars and Grover, 1993; Taylor and Todd, 1995) and its ability to explain attitude toward using an information system is better than other model’s (TRA and TPB) (Mathieson, 1991). Adopting constructs from the Theory of Reasoned Action and the Theory of Planned Behavior the original TAM (Davis, 1989) addresses the reasons why users accept or reject particular pieces of information technology and identifies perceived usefulness and (PU) and perceived ease of use (PEOU) as major determinants of intention to use technology. A third construct, attitude, was included as a mediating factor between these two determinants and behavioral intent. According to Davis perceived usefulness was defined as “the degree to which a person believes that using a particular system would enhance his or her job performance” whereas perceived ease of use was defined as “the degree to which a person believes that using a particular system would be free of effort”. The TAM model supports that these two beliefs are the major determinants of computer usage.

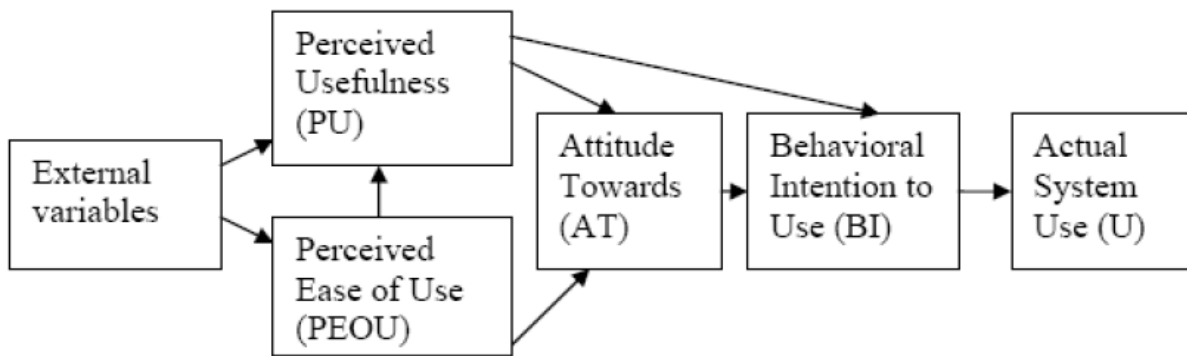


Figure 4. The original technology acceptance model

The main idea of the theory as shown in Figure 4 was that perceived usefulness and perceived ease of use influence user's willingness to use information system either directly or mediating via attitude towards and behavior, leading to actual usage of the technology. Attitude Towards (AT) and Behavioral Intention (BI) are common with the Theory of Reasoned Action. Perceived Ease of Use (PEOU) and Perceived Usefulness have a strong direct influence on AT while Perceived Usefulness (PU) has a strong direct influence on AT and BI. Davis (1989) conducted numerous experiments to validate TAM by using PEOU and PU as two independent variables and system usage as the dependent variable. He found that PEOU and PU were significantly correlated with actual system usage and also that PU had a greater correlation with system usage than PEOU. This result was explained by arguing that regardless of how easy the technology was to use if it was not perceived as beneficial or did not help job performance, ease of use was considered irrelevant by the user. So, the first priority for the users is usefulness followed by ease of use.

The original TAM was revised by Davis and Venkatesh (1991) excluding attitude construct from the model. The empirical studies proved that intention to use technology is only partly mediated by attitude. On the other hand, Perceived Usefulness and Perceived Ease of Use continued to be significant to intention, with PU showing a stronger influence on technology acceptance than PEOU, and with PEOU being a significant determinant of perceived usefulness.

With the development of research in technology usage, Davis and Venkatesh added multiple variables to the TAM trying to show their effect on perceived usefulness and perceived ease of use. Therefore, examined the effect of computer self-efficacy and objective usability on perceived usefulness (1996) and in another research examined the effect of other antecedents on perceived ease of use (2000). These antecedents included: perceptions of external control such as availability

of support staff; computer anxiety, fear of or apprehension toward information technology; computer playfulness; the desire to explore the technology and perceived enjoyment. The results of these studies were not clear, sometimes the above variables influenced the two major determinants of technology usage and sometimes not.

2.3.5 TAM 2

Although TAM has been tested widely with different samples in different situations and proved to be a valid model explaining information system acceptance many extensions to the original TAM have been proposed (e.g. Venkatesh and Speier, 1999; Venkatesh and Davis, 2000; Venkatesh, 2003; Henderson and Divett, 2003; Lu, 2003). Recently Venkatesh and Davis (2000) extended the original TAM by introducing a new model referred to, as TAM2 trying to identify how external variables influencing perceived usefulness and intention. These external variables included *subjective norm*, the degree of influence of others on user decision towards technology; *image*, the user desire of been favorable to others; *job relevance*, the degree to which the technology was applicable; *output quality*, the performance of technology when doing a specified job; and *result demonstrability*, the production of tangible results. *Experience* and *voluntariness* were tested as moderating factors of subjective norm.

The TAM2 was tested both in voluntary and involuntary environments and the results across studies revealed that subjective norm; image, job relevance and result demonstrability were significant determinants of perceived usefulness. Additionally, was shown that subjective norm, perceived usefulness and perceived ease of use were direct determinants of intention to use. Both models, original TAM and TAM2 support that perceived ease of use is a significant determinant of perceived usefulness. The only two-way relationship shown to be significant was between output quality and job relevance while the two-way relationship between subjective norm and experience and subjective norm and voluntariness were not significant to intention (Venkatesh and Davis, 2000).

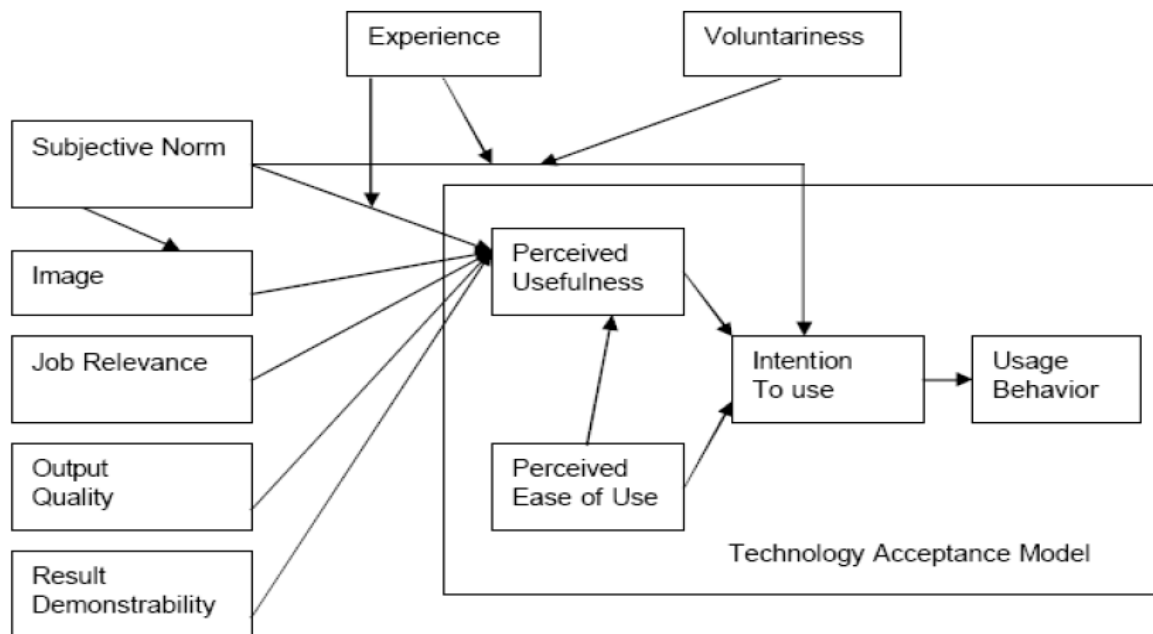


Figure 5. TAM2 – Extension of the technology acceptance model

2.4 Empirical review

Luarn and Lin [2005] employed the extended technology acceptance model (TAM) to explore human behavioral intention to use mobile banking. They collected 180 respondents in Taiwan and discovered that perceived self-efficacy, financial cost, credibility, easy-of-use and usefulness had positive effects on the behavioral intention to use mobile banking. Likewise, due to the parsimony and predictive power of TAM, Amin [2008] used an extended TAM containing five constructs - perceived usefulness, perceived ease-of-use, perceived credibility, the amount of information, and normative pressure - to explore the adoption of mobile banking. They gathered 158 valid questionnaires in Malaysia and supported that perceived ease-of-use markedly influenced perceived usefulness and credibility, and human intentions to adopt mobile banking was significantly affected by perceived usefulness, perceived ease-of-use, perceived credibility, the amount of information, and normative pressure.

Drawing from the theory of innovation resistance proposed by Ram and Sheth [1989], Laukkanen [2007] summarized 18 factors into five barriers, namely Usage, Value, Risk, Tradition, and Image barriers. The theory of innovation resistance, adapted from the psychology and the IDT of Rogers [Rogers 2003], aims to explain why customers resist innovations even though these innovations were considered necessary and desirable. Through investigating 1525 usable respondents from a

large Scandinavian bank, Laukkanen[2007] uncovered that the value and usage barriers were the most intense barriers to mobile banking adoption, while tradition barriers (such as preferring to chat with the teller and patronizing the banking office) were not an obstacle to mobile banking adoption.

Based on TAM and TPB research structure, Sripalawat [2011] collected 195 respondents and found subject norms to be the most influential factor, perceived usefulness to be the second influential factor, and self-efficacy to be the third influential factor in mobile banking adoption. Based on the extended TAM and through collecting 325 valid responses from MBA students in India, Dasgupta [2011] first employed the exploratory factor analysis to identify seven antecedents to behavioral intention toward the adoption of mobile banking. Thereafter, they utilized the regression technique to examine the effects of these antecedents on behavioral intention. Their empirical results supported six of seven antecedents, except for risk. The six antecedents were perceived image, perceived usefulness, perceived ease-of-use, perceived value, self-efficacy, perceived credibility, and tradition, which significantly influenced the behavioral intent to use mobile banking. Recently by using interpretive structure modeling and mapping of mobile banking influences in India, Ketkar [2012] systematically plotted key mobile banking barriers and enablers on the two-dimensional map. By treating driving power of enablers as positive and that of barriers as negative, their work identified “facility to get quick updates”, “time and cost saving”, “reach of telecom distribution” and “need for telecoms to improve customer retention” as the crucial drivers for the adoption of mobile banking.

2.5 Conceptual Framework

This paper aims to ascertain what factors considerably influence people to adopt mobile banking. Therefore, some important constructs selected from mobile banking literature are taken into the research structure. Based on revising different scholarly literature review the following proposed model is adopted. Thus Figure 6 shows the proposed model in which examine the relationship between dependent and independent variable.

In the context of this framework, Adoption of mobile banking is the dependent variable while the independent variables comprise Perceived Usefulness, Perceived Ease of Use, Security and Privacy, Self-Efficacy and Facilitating condition (in terms of bank support).

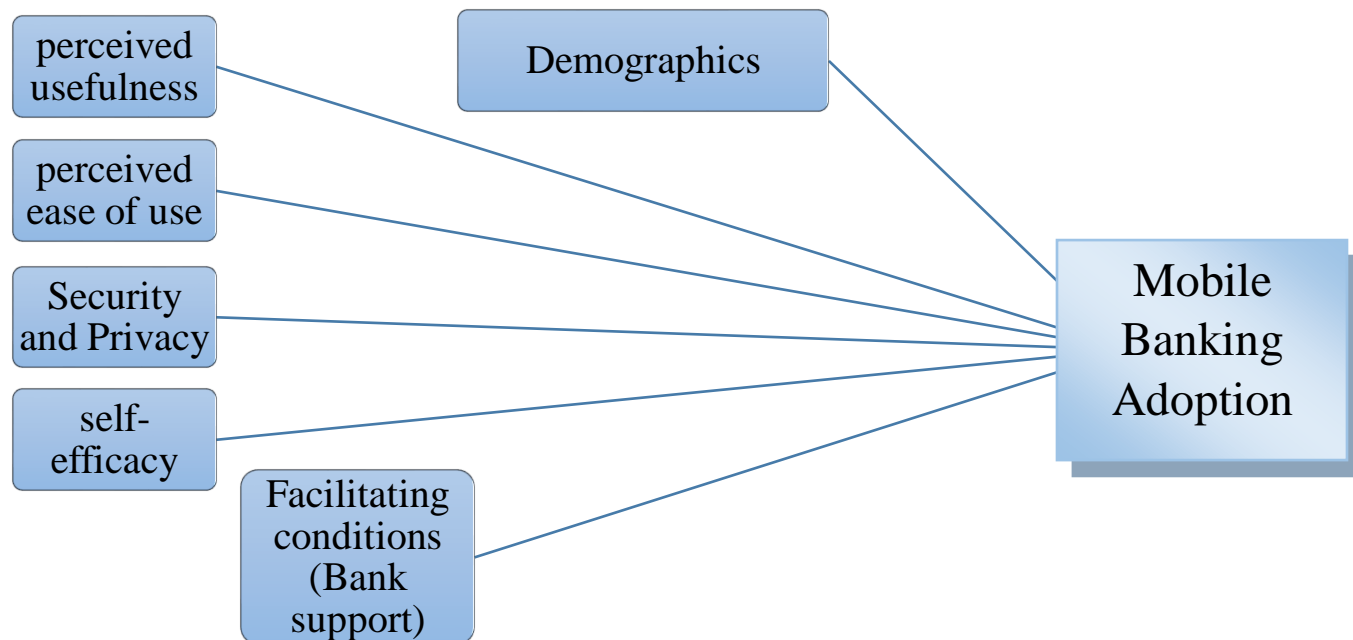


Figure 6. conceptual model

Source: Davis (1989) and integration of Security and privacy, bank support and self-efficacy

2.6 Research Hypotheses

In line with the stated research questions and objectives in chapter one, the theoretical and empirical works reviewed in the second chapter and the conceptual framework provided in the above figure, the research proposed the following hypotheses to be tested with the aim of finding factors that influence the effectiveness of mobile banking adoption.

H1: Perceived Usefulness has a positive impact on mobile banking adoption in Ethiopia.

H2: Perceived Ease of Use has a positive impact on mobile banking adoption in Ethiopia.

H3: There is a positive relationship between (Security and Privacy) and mobile banking adoption.

H4: Self-efficacy has a positive impact on mobile banking adoption in Ethiopia.

H5: Facilitating condition (In terms of Bank support) has a positive effect on mobile banking adoption in Ethiopia.

H6: There is a significant difference in adoption of mobile banking while taking demographics (Gender, age and education) as a basis.

Chapter Three

Research Methodology

3.1 Research Approach

Basically, there are three types of research approach; the first one is Qualitative research which involves studies that do not attempt to quantify their results through statistical summary or analysis. In qualitative research data are often in the form of descriptions not in numbers. The other one is Quantitative research, which engages in systematic and scientific investigation of quantitative properties and phenomenon and their relationships. The objective of quantitative research is to develop and employ mathematical models, theories and hypothesis pertaining to natural phenomena. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of an attribute (Abiy, 2009). The third one is mixed type which consisted of both qualitative and quantitative approach.

This particular research pursued quantitative research approach hence it involves hypothesis testing and other quantitative methods.

3.2 Research Design

The nature of this research was both descriptive and explanatory type. The descriptive method is used to study the general characteristics of respondents and their intention of adopting mobile banking service. Kothari (2004) describes as, descriptive research studies are those studies which are concerned with describing the characteristics of a particular individual, or of a group. explanatory is used to study the relationship between the independent and dependent variable. Kothari (2004) further discussed as, explanatory analysis studies, the joint variation of two or more variables for determining the amount of correlation between two or more variables.

This research also employed a causal research design which involves studying variations in the dependent and independent variables, without any intervention of the researcher. Causality refers to the relationship between events where one set of events, the effects is a direct consequence of another set of events, which is the causes (Bobbie, 1990).

3.3 Population and Sample

A population can be defined as all people or items (unit of analysis) with the characteristics that one wishes to study. The unit of analysis may be a person, individual, organization, country, object, or any other entity that researchers wish to draw scientific inferences about (Kelley, Clark, Brown, & Sitzia, 2003). Accordingly, the target populations of the study were the customer of three commercial banks (Commercial bank of Ethiopia, Awash bank and Dashen bank) that are located in Addis Ababa City.

3.4 Sample Size

To undertake this consumer survey, the sample size for the study must be defined first. An estimation of appropriate sample size was calculated by using a formula stated below in this paragraph. In order to determine the sample size, a judgment about the confidence level and the maximum allowance for random sampling error should be determined. An estimation of the expected proportion of success must also be considered (Kothari, 2004). In this case, a more conservative proportion of success (p) which is 50% was selected together with a level of confidence of 95% (z), a sampling error no greater than 5% (e). **This resulted in a sample size of 384 people for the study.**

$$n = \frac{z^2 \cdot p \cdot q}{e^2}$$

n = Sample size
e = Acceptable error
p = Proportion of success
q = Proportion of failure
z = Standard variant at a given confidence level

Adopted from Kothari (2004)

Stratified random sampling suggests the assignment of samples from each stratum should be proportional to a certain criteria (usually the stratum's representation in the total population), this work followed a disproportionate stratified sampling, which is a stratified sampling procedure in which the number of elements sampled from each stratum is not proportional to their representation in the total population. This study followed the "disproportionate allocation for between strata analyses" and assigned equal number of sample sizes of 192 respondent customers to each bank type.

Table 1. Sample Breakdown

Type of bank	Banks	Sample size
Public Bank	Commercial bank of Ethiopia	192
Private Banks	Awash Bank	96
	Dashen Bank	96
	Total sample size	384

Source: Own computation, Microsoft Excel (2016)

3.5 Sampling Techniques

A non-probability sampling technique, convenience sampling, was used. As Anol (2012) stated convenience sampling techniques is a technique in which a sample is drawn from that part of the population that is close to hand, readily available, or convenient. The following two reasons can be put forward in favor of using convenience Sampling: first one is since There is no complete listing of our target population or no formal sampling frame. And the second was, it can give a better result within a small budget and time constraints. (Farhana& Islam, 2012).

The researcher selected, commercial bank of Ethiopia, Awash bank and Dashen bank using a purposive sampling technique to draw the sample from. Purposive sampling enables an initial understanding of the situation. It produces a sample where the included groups are selected according to specific characteristics that are considered to be important. With such a sample, group differences can be compared and contrasted and a range of experiences can be summarized.

3.6 Data Sources and Types

In this study both secondary and primary data were used. Secondary sources that are going to be used in this research include books, journal articles, reports, research paper, and various e-documents that help assist the preparation of this study. On the other hand, the primary source of data was responses collected from customers of the three commercial banks who have registered to use mobile banking service.

3.7 Data Collection Procedures

Fin (1995) identifies four types of primary data collecting methods: self-administered questionnaires; interviews; structured record reviews; and structured observations. For this study primary data was collected using structured questionnaire, because

- This method is easy to standardize and produce results that are easy to summarize, compare and generalize.
- It is easy to use with large sample by fitting diverse experience into predetermined response categories. Third,
- it contributes to reliability by promoting greater consistency; since every respondent is asked the same questions.

The questionnaire has two parts, the first part focuses mainly about the personal profiles of sample respondents such as age, gender, income, education status etc. Whereas part two of the questionnaire is going to deal with different factors based on TAM and the three added variables. Closed ended questionnaires were used for the study.

3.8 Data Analysis

This study employed customer survey to gather data and the quantitative evaluation of customer's attitudes and behaviors (on five-point scale) was used to examine the relationships of factors under the conceptual frame work. Descriptive analysis was used to analyze the demographic data of the sample. Mean, standard deviation and frequency percentages were used to summarize sample population characteristics obtained through the questionnaire. The inferential (cause and effect) analysis is conducted using SPSS software.

3.9 Reliability and Validity

3.9.1 Reliability

As per Kothari (2004), we can say a measuring instrument is reliable if it provides consistent results. Reliability is conducted to assess data quality. That is, answers to a reliable survey differs because respondents have different opinions, not because the survey is confusing or has multiple interpretations.

The study used Cronbach's alpha to assess the reliability of the variables. According to Field (2005) and Tan &Teo, (2000), Cronbach's alphas of the sub-scales ranged from 0.690 to 0.985 which indicate an acceptable internal consistency and reliability measures for the questionnaire meaning that if the results exceed the minimum alpha of 0.690, the constructs measures are reliable. In this study the measure is going to be taken as reliable when the Cronbach's alpha value is found to be 0.7 or above.

3.9.2 Validity

According to Kothari (2004), validity is the most critical criterion that indicates the degree to which an instrument measures what it is supposed to measure. Validity can also be thought of as utility. In other words, validity is the extent to which differences found with a measuring instrument reflect true differences among those being tested. the researcher strongly asked recognized experts give their opinion on the validity of the questionnaire items to measure the variables.

3.10 Ethical Consideration

In order to keep the confidentiality of the data given by respondents, the respondents are not going to be required to write their name and assured that their responses were treated in strict confidentiality. Furthermore, the student researcher tried avoiding misleading or deceptive statements in the questionnaire. Lastly, the questionnaires were distributed only to voluntary participants.

Chapter Four

Data analysis and Interpretation

4.1 Introduction

This chapter is dedicated to describe the major findings and analysis of sample population based the data gathered from respondents. The information obtained from the respondents then summarized and analyzed using SPSS. Both descriptive (frequency percentages, mean and standard deviation) and inferential statistics (correlation and multiple regressions) were used to analyze the data.

4.2 The Questionnaire Response Rate

The questionnaires were physically distributed to mobile banking users of the three banks in Addis Ababa region. From the total of 384 questionnaires 370 were collected and the remaining 14 (3.6%) were not responded. The nominal response rate of the collected questionnaires was (96.3%); however, out of these due to incompleteness and missing values only 332 (89.7%) were usable for further analyses and the remaining 24 (7.23%) were discarded. According to Rubin & Babbie (2010), a response rate of 70% is “very good” for further assessment. Therefore, in this case response rate of 89.7% is significant.

Table 2. Questionnaire Response Rate

Sample Size	384
Collected	370
Remain uncollected	14
Discarded	24
Usable	332
Response rate	89.7%

Source: Own Survey Result, 2019

4.3 Reliability test

The sample size of this study was 384 which are considered to be large. Large samples help to reduce random error which arises from variation in the difference between the sample value and the value of the population. Here reliability was measured using Cronbach’s Alpha and the overall reliability is 0.934 which is higher than the minimum alpha value set as acceptable (i.e. 0.60). If

the Cronbach's alpha is greater than 0.60, the reliability is satisfactory (K.Malhotra, 1996). The Cronbach's alpha result of each item used in the questionnaire is shown on the following table

Table 3. Cronbach's Alpha Test for Reliability

Factors	No. Items	Cronbach's alpha
Perceived Usefulness	4	0.807
Perceived Ease of use	4	0.769
Security and Privacy	4	0.865
Self-Efficacy	4	0.695
Bank support	4	0.784
Adoption of mobile banking	5	0.815
Overall reliability	25	0.934

Source: Own Survey Result, 2019

4.4 Demographic Characteristics

This subsection contains paragraphs summarize demographic characteristics of respondents of this study. It reveals the contents about - the gender, age, income, work status, how often respondents use mobile banking, educational level and type of bank used (public or private) of the participants of this research.

4.4.1 Gender of Respondent

The respondent's gender profile indicates, as shown in the table 4 below, the majority of the respondents were male which accounts 69 percent of the sample respondents whereas female respondents account for 31 percent of the sample respondents.

Table 4. Gender of respondent

		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	229	69.0	69.0	69.0
	Female	103	31.0	31.0	100.0
	Total	332	100.0	100.0	

Source: SPSS result, 2019

4.4.2 Age of Respondent

The highest percentage of respondents were between the ages of 26 and 30 years (41.6%), the second largest age group was between 31 and 40 years (28.9%), the third largest group was between 41 and 50 years (15.7%), and the smallest group was over 51 years (5.7%).

Table 5. Age of respondent

		Age group			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 - 25	27	8.1	8.1	8.1
	26 - 30	138	41.6	41.6	49.7
	31 - 40	96	28.9	28.9	78.6
	41 - 50	52	15.7	15.7	94.3
	Above 51	19	5.7	5.7	100.0
	Total	332	100.0	100.0	

Source: SPSS result, 2019

4.4.3 Education Level of Respondent

Education level attained by respondents as indicated by the table 6 below majority of the respondents were first degree holders which is 60.5 percent of the total respondents which is followed by Master's degree holders' 32.8 percent.

Table 6. Education level of respondent

		Education level			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary Education	9	2.7	2.7	2.7
	Diploma	13	3.9	3.9	6.6
	University degree or college graduate	201	60.5	60.5	67.2
	Master's Degree	109	32.8	32.8	100.0
	Total	332	100.0	100.0	

Source: SPSS result, 2019

4.4.4 Work status of Respondent

Table 7 below depicts about the work status of the respondents, most of them are employed which is 80.7 percent of the total respondents. And 3.6 percent are un-employed as can be seen from the table 7 below also students take 11.1% of the total respondents.

Table 7. Work Status of respondent

		Work Status			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed	268	80.7	80.7	80.7
	un-Employed	12	3.6	3.6	84.3
	A student	37	11.1	11.1	95.5
	House Wife	6	1.8	1.8	97.3
	Retired	9	2.7	2.7	100.0
	Total	332	100.0	100.0	

Source: SPSS result, 2019

4.4.5 Monthly Income of Respondent

Referring to the table 8 below among the sample respondent's 56.9 percent earn monthly income between 2,000-3,999 birr. Whereas 18.1 percent of the respondents earn monthly income between 2,000-3,999 birr.

Table 8. Monthly Income of Respondent

		Income source			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No income	45	13.6	13.6	13.6
	100 - 1,999	8	2.4	2.4	16.0
	2,000 - 3,999	60	18.1	18.1	34.0
	4,000 - 8,999	189	56.9	56.9	91.0
	9,000 - 14,999	24	7.2	7.2	98.2
	15,000 - 25,000	6	1.8	1.8	100.0
	Total	332	100.0	100.0	

Source: SPSS result, 2019

4.4.6 In Which Bank Do you have an account

Table 9 stated below indicates that out of 332 respondents 190 were using mobile banking service of commercial bank of Ethiopia. Also, out of 332 respondents 57 were using mobile bank service of dashen bank and finally out of 332 respondents 85 were using mobile banking service of awash bank.

Table 9. In which bank do you have an account?

		Which bank do you have an account			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Commercial bank of Ethiopia	190	57.2	57.2	57.2
	Awash bank	57	17.2	17.2	74.4
	Dashen bank	85	25.6	25.6	100.0
	Total	332	100.0	100.0	

Source: SPSS result, 2019

4.4.7 Years of using mobile banking service

As the below table 10 indicates the highest number of years people using mobile banking is 2 years which accounts 58% following 3 years having a percentage of 22.6%, the table also indicates that there is a missing value of 7 which is resulted due to leaving the question without filling or it may result from improper filling.

Table 10. Years of using mobile banking

How many years have you been using mobile banking service?				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Year	57	17.2	17.5
	2 Years	193	58.1	59.4
	3 Years	75	22.6	100.0
	Total	325	97.9	100.0
Missing	99	7	2.1	
Total		332	100.0	

Source: SPSS result, 2019

4.5 Descriptive Analysis

Table 11. Descriptive Statistics on mobile banking adoption

Items	Mean	Std.Deviation
Perceived usefulness		
Using mobile banking enables me to utilize banking services more quickly	4.03	0.92
Using mobile banking improves my performance		
Mobile banking increases my productivity		
Using mobile banking services is cost efficient		
Perceived ease of use		
Learning to use mobile banking is easy for me	4.17	0.841
I find it easy to do what I want to do by having a mobile banking		

I find mobile banking flexible to interact with		
My interaction with mobile banking is clear and understandable		
Security and Privacy		
Using Mobile banking is financially secure		
I trust in the ability of an online bank to protect my privacy		
I am not worried about the security of mobile banking.	3.17	0.750
Matters of security have no influence on using Mobile banking services		
Self-Efficacy		
I have confidence in my self		
I feel confident about using Mobile banking	4.03	0.632
I feel comfortable when using new technologies		
I am very skilled at conducting electronic transactions.		
Facilitating Conditions (Bank Support)		
It is important for me to have someone to help out in the bank in case of a problem when using mobile banking	2.60	0.151
I think my bank is able to help me quickly in technical and non-technical issues related to mobile banking		

I think the bank provides sufficient training and guides to use mobile banking		
I am satisfied with the personal service I get from the bank related to mobile banking		
Adoption of mobile banking		
I find that mobile banking helps my day to day activity		
I intend to use mobile banking to perform financial transactions		
I use electronic fund transfer to transact large amounts of money	4.20	1.310
I will strongly recommend others to use mobile banking.		
I will frequently use mobile banking in the future		

Source: SPSS result, 2019

With the objectives of interpretation of the above descriptive data, the researcher adopted measurement scale intervals or range from Poonlar Btawee, 1987 as cited by Hailu Demissie (2013). Based on Btawee, mean scores ranging from 4.51 to 5.00 consider as “Strongly agree”, 3.51- 4.50 as “Mostly agree”, 2.71-3.50 as “moderately agree”, 1.51-2.70 as “fairly agree” and 1.00-1.50 as “Disagree”.

The mean score of Perceived usefulness and perceived ease of use are relatively close to the mostly agree side (4.03 and 4.17). It proposes that users perceived more convenient and easier to work with cell phone devices for implementing their banking transactions rather than other devices. Also, this result supports the findings from Luarn & Lin (2005) study.

Security and Privacy variable mean score; it’s close to Moderately agree (3.17). It means that the respondents who are users of mobile banking service relatively feel indecision whether this service is risky or not. However, as Cruz et al. (2010); Koenig-Lewis et al. (2010) and Riquelme & Rios (2010) emphasized that risk factor has significantly influenced on adoption of mobile banking.

As the result shows respondents are agree to bank support (2.60) on a lesser degree. It can be interpreted that people were getting a highly variable bank support form bank professional that are located in different branches. Adoption variable mean score is close to mostly agree section (about 4.20). As expectation, bank customers are willing to adopt and suggest mobile banking to their environment.

Based on these parameters, as it has shown in the above table 11, all the research variables fall in the category of range between 2.6 to 4.20 which means respondents have a good opinion (agree) on that mobile banking adoption factors have an impact on the actual mobile banking adoption. Likewise, all variables scored relatively low scales of standard deviation which tells us that the data are narrowly spread. This means that, the respondents have a close opinion regarding each variable of the research.

4.6 Correlation analysis

To establish the relationship between the independent (perceived usefulness, perceived ease of use, security and privacy, self-efficacy and facilitating conditions (bank support)) and the dependent variable adoption of mobile banking. The researcher used Pearson's' product moment correlation as shown in Table 12.

Table 12 revealed that there is a strong positive correlation between all the independent variables (perceived usefulness, perceived ease of use, security and privacy, self-efficacy and facilitating conditions (bank support)) and adoption of Mobile banking. To mention the values, perceived usefulness leading with $r = 0.744$ followed by and Self-efficacy with $r = 0.719$ and Security and Privacy with $r = 0.717$ also Bank support with $r = 0.705$ and the final Perceived ease of use with $r = 0.616$. The positive correlation implies that there is a significant association between the independent variables and adoption of Mobile banking implying an increase in any of the independent variables will course a positive increase in adoption of Mobile banking and vice versa.

Table 12. Pearson Correlation Matrix

		Correlations					
		Perceived Usefulness	perceived ease of use	Security and Privacy	Self-Efficacy	Bank Support	Adoption of mobile banking
Perceived Usefulness	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	241					
perceived ease of use	Pearson Correlation	.440**	1				
	Sig. (2-tailed)	.000					
	N	241	291				
Security and Privacy	Pearson Correlation	.236*	.244**	1			
	Sig. (2-tailed)	.037	.000				
	N	237	287	289			
Self-Efficacy	Pearson Correlation	.171**	.379**	.071	1		
	Sig. (2-tailed)	.008	.000	.231			
	N	238	288	289	290		
Bank Support	Pearson Correlation	.569**	.319**	.217**	.178**	1	
	Sig. (2-tailed)	.000	.000	.000	.002		
	N	238	288	289	290	290	
Adoption of mobile banking	Pearson Correlation	.744**	.616**	.717**	.719**	.705**	1
	Sig. (2-tailed)	.000	.000	.001	.000	.001	
	N	215	265	263	264	264	267

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

* . Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS result, 2019

4.7 Regression analysis

Multiple regression testing was performed to investigate the relationship between the single dependent variable and the independent variables. Multiple regression enables the researcher to establish the overall fit of the model and the relative contribution of each of the predictors to the

total variance explained in the model (Laerd Statistics, 2015). This regression analysis was then used to test the hypotheses postulated in this research.

4.7.1 Test of Multicollinearity

Multicollinearity is a state of very high intercorrelations or inter-associations among the independent variables. It is therefore a type of disturbance in the data, and if present in the data the statistical inferences made about the data may not be reliable.

Table 13. Collinearity Statistics

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Perceived Usefulness	.530	1.886
	perceived ease of use	.556	1.797
	Security and Privacy	.445	1.058
	Self-Efficacy	.319	1.088
	Bank Support	.369	1.301

a. Dependent Variable: Adoption of mobile banking

Source: SPSS result, 2019

As observed from table 13 above, the values of Variance Inflation Factor (VIF) for all independent variables or factors are less than 10 (Gareth James, 2013). Hence, there is no multicollinearity among independent variables. Therefore, it is possible to use multiple regressions analysis.

4.7.2 Normality of the Error Term Distribution

Normal distribution is detected based on skewness and kurtosis statistics. Skewness is a measure on the asymmetry of a distribution. Whereas, kurtosis measures the extent to which observations cluster around a central point. The acceptable range for normality for both statistics is between -1. and +1. Therefore, as depicted in table 14 below, all variables values of Kurtosis and Skewness are almost within the acceptable range for normality (-1.0 to +1.0).

Table 14. Normality of Distribution

	Descriptive Statistics				
	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Perceived Usefulness	241	-.137	.157	-.208	.312
perceived ease of use	291	-.400	.143	.365	.285
Security and Privacy	289	.307	.143	.326	.286
Self-Efficacy	290	-.340	.143	.187	.285
Bank Support	290	-.110	.143	.289	.285
Adoption of mobile banking	267	-.307	.149	.309	.297
Valid N (listwise)	211				

Source: SPSS result, 2019

4.7.3 Multiple Linear Regression Analysis

In the model summary Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variables, from the findings as shown in the table 15. the value of adjusted R squared was 0.720 an indication that there was variation of 72% on the adoption of Mobile banking is due to changes in (perceived usefulness, perceived ease of use, security and privacy, self-efficacy and facilitating conditions (bank support)) at 95% confidence level. R is the correlation coefficient which measures the association between the study variables and the dependent variable. From the findings shown in the table 15 below there was a strong positive association ($r = 0.889$) between the study variables and dependent variable.

Table 15. Model summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.889 ^a	.739	.720	.33235

a. Predictors: (Constant), Bank Support, Security and Privacy, Self-Efficacy, perceived ease of use, Perceived Usefulness

Source: SPSS result, 2019

4.8 The Analysis of Variance (ANOVA)

To determine whether the overall regression model was a good fit for the collected data, an ANOVA analysis was done. The analysis was intended to investigate whether the variation in the independent variables explain the observed variance in the adoption of Mobile banking. The

ANOVA results indicate that the independent variables significantly explain the dependent variable which is adoption of mobile banking. The output in this case is presented in the table 16 below.

Table 16. Model summary - Anova

ANOVA ^a						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	24.02	2	15.113	52.862	.000 ^b
	Residual	91.19	349	0.847		
	Total	115.21	351			

a. Dependent Variable: Adoption of mobile banking

b. Predictors: (Constant), Bank Support, Security and Privacy, Self-Efficacy, perceived ease of use, Perceived Usefulness

Source: SPSS result, 2019

The result show that the regression model has a less than 0.001 likelihood of giving a wrong prediction. Hence the regression model has a confidence level of 95%.

4.9 Validating the proposed Hypotheses

4.9.1 The regression model

The regression model is used establish the relationship between the independent variable and the dependent variable.

Table 17. Summary of coefficients

Coefficients ^a						
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.566	.380		15.737	.000
	Perceived Usefulness	.382	.080	.191	2.282	.004
	perceived ease of use	.272	.073	.303	3.705	.000
	Security and Privacy	.162	.064	.047	.753	.003
	Self-Efficacy	.150	.081	.117	1.839	.001
	Bank Support	.226	.062	.029	3.414	.001

a. Dependent Variable: Adoption of mobile banking

Source: SPSS result, 2019

It can be noted that the independent variables were all significant at 95% confidence level. The model was obtained as:

$$Y = 0.566 + 0.191X_1 + 0.303X_2 + 0.047X_3 + 0.117X_4 + 0.029X_5 + e$$

According to the regression equation established, taking all other factors constant that is perceived usefulness, perceived ease of use, security and privacy, self-efficacy and facilitating conditions (bank support) constant at zero, the adoption of mobile banking will be 0.566.

4.9.2 Hypothesis Test Results

The proposed hypotheses in the model perceived usefulness, perceived ease of use, security and privacy, self-efficacy and facilitating conditions (bank support) and mobile banking adoption were tested by applying the results from the multiple regression analysis. Results suggest that perceived ease of use as the highest contributing variable in the model ($B = .303$). Hypotheses test results are presented in Table 18. Applying the results of the multiple regression analysis from Table 17 to test the hypothesis suggests the following:

Multiple regression results reported in Table 17 can be used to test if perceived usefulness affects adoption of mobile banking, $B = .191$, $p = .004$. Thus, **H1 (Perceived usefulness have a positive impact on Mobile banking adoption) is supported.**

Multiple regression results reported in Table 17 can be used to test if perceived ease of use affects adoption of mobile banking, $B = .303$, $p = .000$. Thus, **H2 (Perceived ease of use will have a positive impact on Mobile banking adoption) is supported.**

When multiple regression results in Table 17 are used to test if there is a positive relationship between (Security and Privacy) and Mobile banking adoption, $B = .047$, $p = .003$. Thus **H3 (There is a positive relationship between (Security and Privacy) and mobile banking adoption.) is supported.**

Multiple regression results reported in Table 17 can be used to test if self-efficacy affects adoption of mobile banking, $B = .117$, $p = .001$. Thus, **H4 (Self-efficacy has a positive impact on mobile banking adoption in Ethiopia.) is supported.**

Multiple regression results reported in Table 17 can be used to test if facilitating condition in terms of bank support affects adoption of mobile banking, $B = .029$, $p = .001$. Thus, **H5 (Facilitating**

condition in terms of Bank support has a positive effect on mobile banking adoption in Ethiopia.) is supported.

Table 18. Summary of Hypothesis Testing

No.	Hypothesis	β	P	Results
H1	Perceived Usefulness has a positive impact on mobile banking adoption in Ethiopia.	.191	.004	Accepted
H2	Perceived Ease of Use has a positive impact on mobile banking adoption in Ethiopia.	.303	.000	Accepted
H3	There is a positive relationship between (Security and Privacy) and mobile banking adoption.	.047	.003	Accepted
H4	Self-efficacy has a positive impact on mobile banking adoption in Ethiopia.	.117	0.01	Accepted
H5	Facilitating condition (In terms of Bank support) has a positive effect on mobile banking adoption in Ethiopia.	.029	.001	Accepted

Source: SPSS result, 2019

4.9.3 Effect of demographics on mobile banking adoption

4.9.3.1 Mobile banking adoption and Gender

The study included 330 valid responses of whom 228 were male and 102 were female. The case summary is displayed in Table 19.

Table 19. Case processing summary of Mobile banking adoption and Gender

		Case Processing Summary					
		Cases					
		Valid		Missing		Total	
Male or female?		N	Percent	N	Percent	N	Percent
Adoption of mobile banking	Male	228	99.0%	1	1.0%	229	100.0%
	Female	102	99.0%	1	1.0%	103	100.0%

Source: SPSS result, 2019

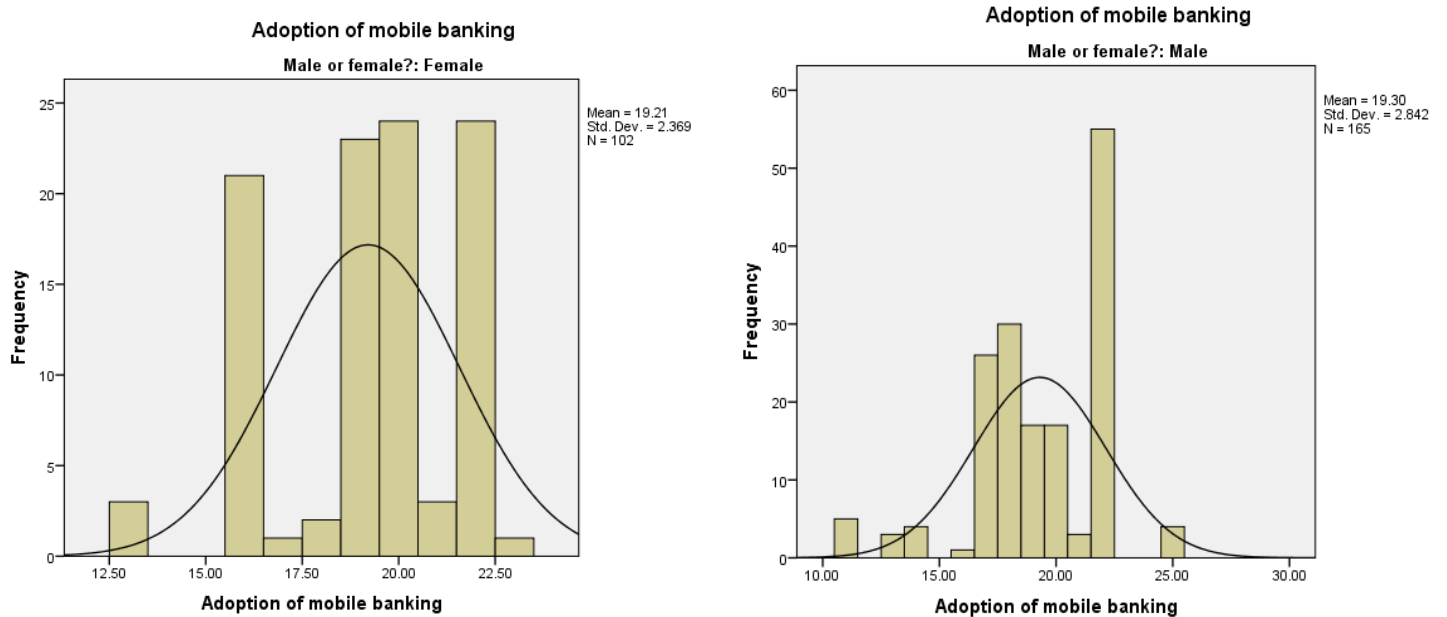


Figure 7. Female and male Adoption of mobile banking

Histograms of the mobile banking adoption distribution levels of both male and female respondents are presented in Figure 7. The horizontal axis represents mobile banking adoption, while the vertical axis indicates the number of respondents that answered the behavioral intention scale. All associated descriptive statistics related to male and female samples can be found in Appendix II.

Normality test results are presented in Table 20. The Shapiro-Wilk’s test has been relied upon to test the hypothesis that the distribution is normal or that there is an absence of normality in both the male and female sample distributions. The null hypothesis associated with the test assumes the normality of the sample tested. If the assumption of normality has been violated, then the “Sig” value $p < .05$ level, and if it is not violated if $p > .05$. Rejecting the null hypothesis means that the data's distribution is not equal to a normal distribution (Laerd Statistics, 2015).

Table 20. Test of Normality (Gender vs Adoption of mobile banking)

		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
Male or female?		Statistic	Df	Sig.	Statistic	Df	Sig.
Adoption of mobile banking	Male	.187	165	.000	.897	165	.000
	Female	.201	102	.000	.891	102	.000

a. Lilliefors Significance Correction
 Source: SPSS result, 2019

The mobile banking adoption scores were not normally distributed for males or females, as assessed by Shapiro-Wilk's test ($p < .001$). The results indicate a significant deviation from normality in both cases (MALE = .897, $df = 165$, $p < .001$), (FEMALE = .891, $df = 102$, $p < .001$).

The existence of this difference in normality requires a Mann-Whitney U test to be run to test if there is a significant difference between the levels of mobile banking adoption between males and females. The Mann Whitney U test is a rank-based nonparametric test that enables researchers to identify differences between two groups on a dependent variable (Laerd Statistics, 2015b). The results of the Mann-Whitney U test are depicted in Table 21. A Mann-Whitney U test was run to determine if there were differences in mobile banking adoption scores between males and females. Median mobile banking adoption scores for males (mean rank = 135.64) and females (mean rank = 131.35). hence, it was found that while considering mobile banking adoption as a basis male and female are **not significantly statistically different**, $U = 8145$, $z = -.449$, $p = .654$.

Table 21. Mann-Whitney U Test

		Ranks			
		Male or female?	N	Mean Rank	Sum of Ranks
Adoption of mobile banking		Male	228	135.64	22380.00
		Female	102	131.35	13398.00
		Total	330		

Test Statistics ^a	
	Adoption of mobile banking
Mann-Whitney U	8145.000
Wilcoxon W	13398.000
Z	-.449
Asymp. Sig. (2-tailed)	.654

a. Grouping Variable: Male or female?

Source: SPSS result, 2019

4.9.3.2 Mobile banking adoption and Age

The case summary for mobile banking adoption and age categories is displayed in Table 22. The research included 331 valid responses of whom 27 were in the 18-25 age category, 137 in the 26-

30 age category, 96 in the 31-40 age category, 52 in the 41-50 age category with 19 respondents in the 51 or older age category.

Table 22. Case processing summary of Mobile banking and Age

		Case Processing Summary					
		Cases					
		Valid		Missing		Total	
Age group		N	Percent	N	Percent	N	Percent
Adoption of mobile banking	18 – 25	27	100.0%	0	0.0%	27	100.0%
	26 – 30	137	99.0%	1	1.0%	138	100.0%
	31 – 40	96	100.0%	0	0.0%	96	100.0%
	41 – 50	52	100.0%	0	0.0%	52	100.0%
	Above 51	19	100.0%	0	0.0%	19	100.0%

Source: SPSS result, 2019

Figure 8 illustrate histograms of the mobile banking adoption distribution levels by age category. The horizontal axis represents mobile banking adoption, while the vertical axis indicates the number of respondents that answered on the mobile banking adoption scale. All associated descriptive statistics related to age sample distributions can be found in Appendix II.

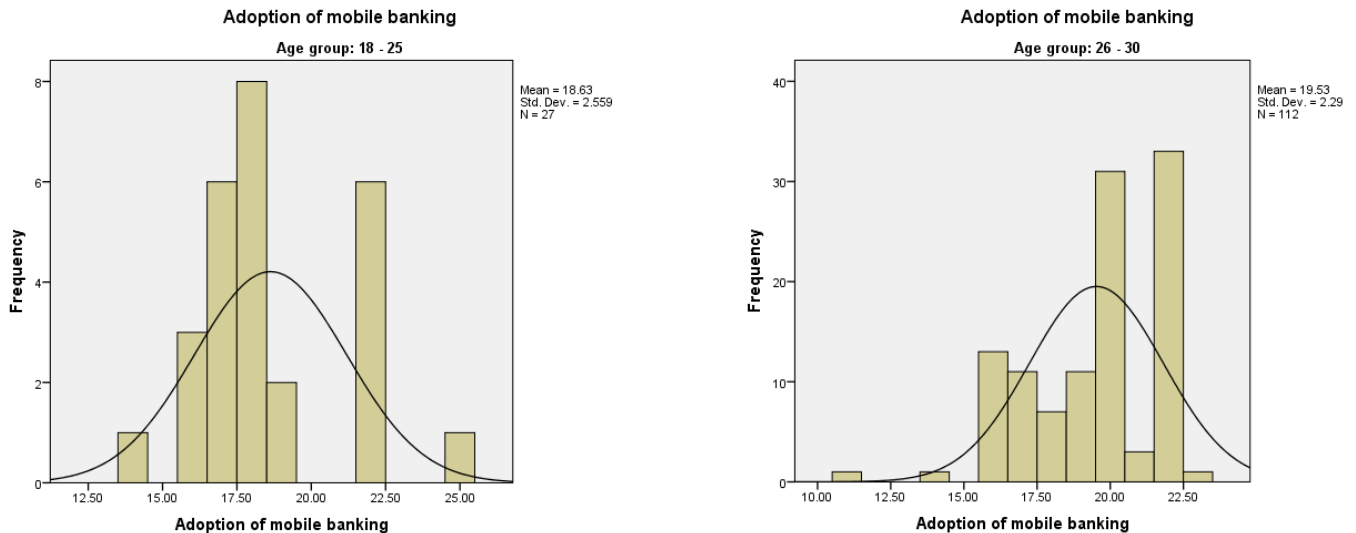


Figure 8. Adoption of mobile banking for age group 18 -25 and 226-30

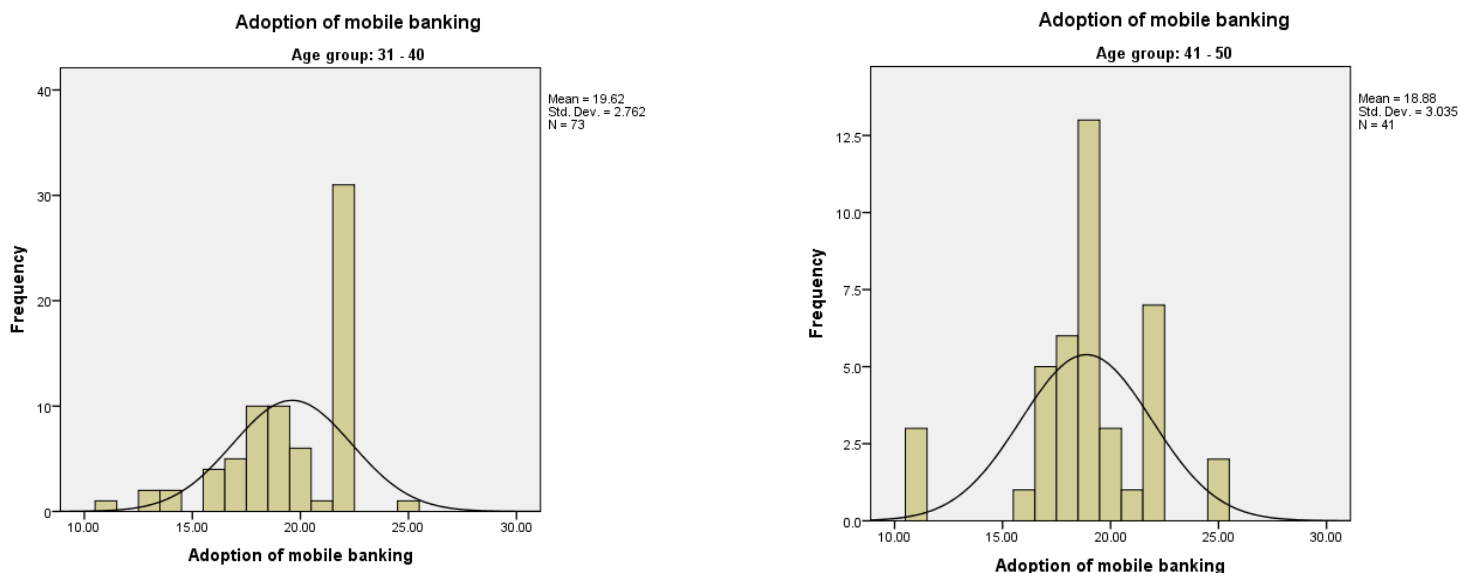


Figure 9. Adoption of mobile banking for age group 31-40 and 41-50

Table 23. Test of Normality (Education level vs Adoption of mobile banking)

		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
Age group		Statistic	df	Sig.	Statistic	df	Sig.
Adoption of mobile banking	18 – 25	.264	27	.000	.886	27	.000
	26 – 30	.189	112	.000	.890	112	.000
	31 – 40	.244	73	.000	.870	73	.000
	41 – 50	.170	41	.004	.884	41	.000
	Above 51	.226	14	.051	.857	14	.000

a. Lilliefors Significance Correction

Source: SPSS result, 2019

Normality test results are presented in Table 23. The Shapiro-Wilk's test has been relied upon to test the hypothesis that the distribution is normal or that there is an absence of normality in all age category distributions. The null hypothesis associated with the test assumes that normality of the sample tested. Mobile banking adoption scores were not normally distributed for all age groups as assessed by Shapiro-Wilk's test ($p < .05$). The results indicate a statistically significant deviation from normality in all age categories, (18-25years = .886, $df = 27$, $p < .001$, 26-30years = .890, $df = 112$, $p < .001$, 31-40years = .870, $df = 73$, $p < .001$, 41-50years = .884, $df = 36$, $p < .001$, +51years = .857, $df = 11$, $p > .001$).

The existence of significant deviations from normality requires a Kruskal-Wallis H test to be run to test if there is a significant difference between the levels of the mobile banking adoption examined between age groups.

Table 24. Kruskal Wallis Test

		Ranks	
	Age group	N	Mean Rank
Adoption of mobile banking	18 – 25	27	106.65
	26 – 30	112	141.05
	31 – 40	73	146.29
	41 – 50	41	122.72
	Above 51	14	99.32
	Total	267	

Test Statistics ^{a,b}	
	Adoption of mobile banking
Chi-Square	10.238
Df	4
Asymp. Sig.	.037

a. Kruskal Wallis Test

b. Grouping Variable: Age group

Source: SPSS result, 2019

A Kruskal-Wallis H test was conducted to determine if there were differences in mobile banking adoption scores between groups in the age categories: 18-25 years (n = 27), 26-30 years (n = 112), 31-40 years (n = 73), 41-50 years (n = 41) and above 51 (n = 14) age groups. The distributions of mobile banking adoption score were **statistically significantly different** between groups, $\chi^2(4) = 10.238, p = .037$.

4.9.3.3 Mobile banking adoption and Education

The study included 331 valid responses of which 8 make up the Secondary education, 13 in the Diploma category, 201 in the University degree (college graduate) category, and 109 in the Master’s Degree category. The case summary is displayed in Table 25.

Table 25. Case processing summary of Mobile banking and Education

		Case Processing Summary					
		Cases					
		Valid		Missing		Total	
	Education level	N	Percent	N	Percent	N	Percent
Adoption of mobile banking	Secondary Education	8	88.9%	1	11.1%	9	100.0%
	Diploma	13	100.0%	0	0.0%	13	100.0%
	University degree or college graduate	201	100.0%	0	0.0%	201	100.0%
	Master’s Degree	109	100.0%	0	0.0%	109	100.0%

Source: SPSS result, 2019

Figure 10 and 11 illustrate histograms of the mobile banking adoption distribution levels by education level groupings. The horizontal axis represents mobile banking adoption, while the vertical axis indicates the number of respondents that answered the mobile banking adoption scale. All associated descriptive statistics related to education level sample distributions can be found in Appendix II.

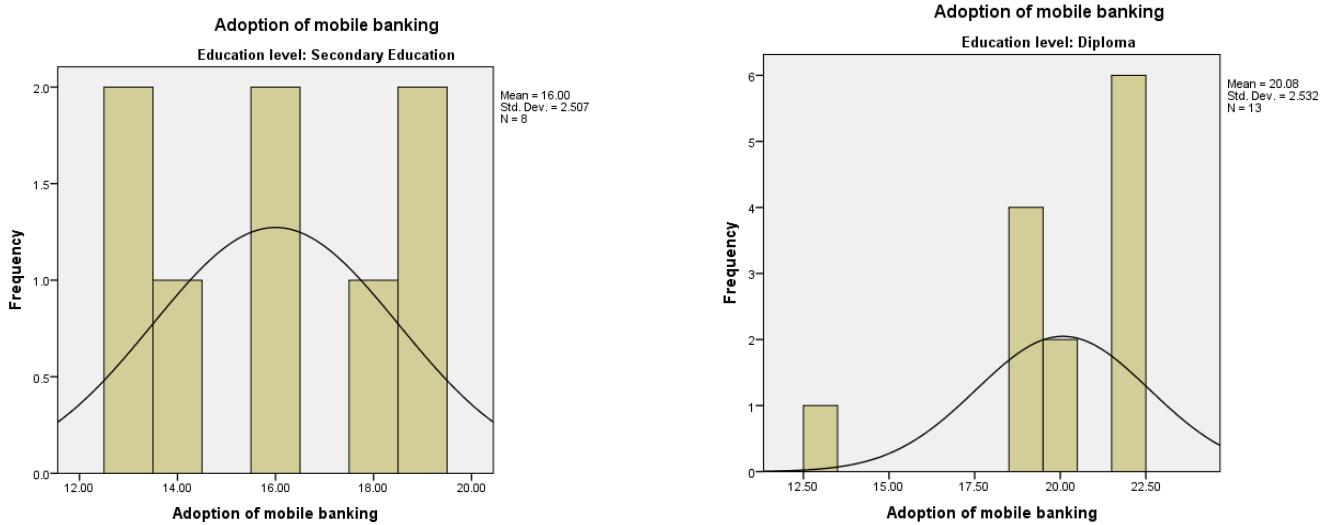


Figure 10. Adoption of mobile banking - secondary education and diploma respondents

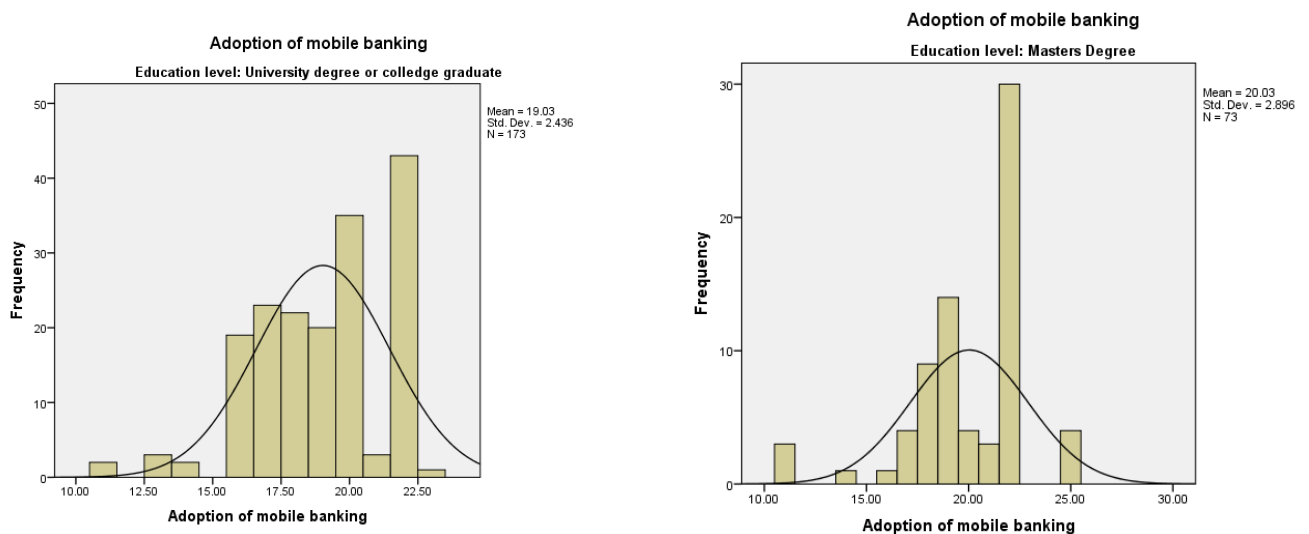


Figure 11. Adoption of mobile banking - university degree and Master's degree respondents

Table 26. Test of Normality (Education level vs Adoption of mobile banking)

Education level		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Adoption of mobile banking	Secondary Education	.162	8	.200*	.882	8	.000
	Diploma	.258	13	.018	.730	13	.000
	University degree or college graduate	.143	173	.000	.919	173	.000
	Master's Degree	.218	73	.000	.858	73	.000

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Source: SPSS result, 2019

Results of the Shapiro-Wilk’s test for normality are presented in Table 26. The Shapiro-Wilk test has been relied upon to test the hypothesis that the distribution is normal or that there is an absence of normality in each age categories sample distributions. The null hypothesis associated with the test assumes that normality of the sample tested. Behavioral Intention scores were found not normally distributed for all education level groupings, as assessed by Shapiro-Wilk's test ($p < .005$). The results indicate a significant deviation from normality in all education level groupings (Secondary Education = .882, $df = 8$, $p = .196$, Diploma = .730, $df = 13$, $p = .001$, University degree or college graduate = .919, $df = 173$, $p = .000$, Master’s Degrees = .858, $df = 73$, $p = .000$).

The existence of this difference in normality requires a Kruskal-Wallis H test to be run to test if there is a statistically significant difference between the levels of mobile banking adoption between education level groupings. The Kruskal-Wallis H test, tests for differences in mean ranks of more than two groups to identify if they are significantly different.

Table 27. Kruskal Wallis Test

Ranks		
Education level	N	Mean Rank
Secondary Education	8	49.63
Diploma	13	163.58
University degree or college graduate	173	125.58
Master's Degree	73	157.95
Total	267	

Test Statistics ^{a,b}	
	Adoption of mobile banking
Chi-Square	21.309
Df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: Education level

Source: SPSS result, 2019

A Kruskal-Wallis H test was run to determine if there were differences in Mobile banking adoption score between five groups of participants in different age categories: “Secondary Education” (n = 8) , “Diploma” (n = 13), “University degree or college graduate” (n = 173), “Master’s Degree” (n = 73) education level groups. The distributions of Mobile banking Adoption score were **statistically significantly different** between groups, $\chi^2(3) = 21.309$, $p < 0.001$.

Chapter Five

Conclusion and Recommendation

5.1 Conclusion

Nowadays one of the major concerns for financial institutions and commercial banks is to provide better and secured services to the customers. Due to close competition between commercial banks they have been trying to offer safe and secure services in order to keep competitive advantage in the market. Furthermore, technology is the basic competitive advantage for financial organizations and is inevitable to stop growing. If there was not innovation in information technology services for banking system, they could not achieve what they have achieved today. With this concern, managers seek to have better understanding of what consumers expect and to find out which specification of behavior effect on intention to use mobile banking services.

This research has examined the factors that influence adoption of mobile banking in Addis ababa, Ethiopia. The Technology Acceptance Model was used as the main theoretical framework including new variables derived from previous mobile banking studies. From a total of 384 respondents, 332 respondents were properly filled and returned back. The factors developed in the primary model were Perceived Usefulness, Perceived Ease of Use, Self-Efficacy, Security and Privacy, Facilitating Condition (Bank Support).

The aim of this research study was to examine the factors of mobile banking that influence the adoption of mobile banking and develop a model based on TAM and integration of security and privacy, bank support and self-efficacy. Scale reliability, correlation and multiple regression tests was undertaken to develop a conceptual model. This was then tested for its predictive validity and compared to actual results from the survey instrument. The proposed model was then used to test if hypotheses set forth in the research study were supported by the results.

Results of empirical testing suggests the importance of perceived ease of use ($B = .303$) as an influencing factor on consumers mobile banking adoption in Ethiopia. Perceived usefulness ($B = .191$), Self-Efficacy ($B = .117$), Bank support ($B = .029$), Security and Privacy ($B = .047$).

The research study found that consumers are more likely to adopt mobile banking if it is useful, easy and secure to undertake banking transactions. The easier mobile banking service offered is perceived to be, the more likely it is to be adopted. Banks need to try and illustrate how mobile

banking has the potential to be useful to consumers, making their product useful to the consumer and creating an easy to use product gives them the advantage in attracting more customers who require the offered service. If banks can demonstrate mobile banking's usefulness to both existing and potential customers, adoption rates are likely to increase. Therefore, banks need to identify which services the consumer perceives as useful and design mobile banking services that meet consumer needs.

Regarding demographic factors, the findings revealed that, customers with age ranging from 26-30 were the majority users of mobile banking services, most of them are using mobile banking service for two years.

5.2 Recommendation

Based on the above conclusion, the study had the following recommendations to banks.

1. Study results reveal that mobile banking adoption is influenced highly by perceived ease of use and perceived usefulness; this indicates important opportunity for banks in Ethiopia as such the study recommends that banks in Ethiopia should increase their efforts towards offering a mobile banking service that is easy and useful which makes the customers not to exert any additional and unnecessary effort to figure out how to use the service to undertake a certain activity.
2. Banks should give high attention to the security and privacy issues of Mobile banking technology so as to ensure a high mobile banking adoption rate. More specifically, they should be capable of ascertaining customers that any transaction performed online is going to be secured and authenticated until it has been transferred to the right beneficiary.
3. Majority of the bank customers are aware of mobile banking technology and they do not use it, it shows there is a strong disapproving attitude among the bank customers and therefore there is need to sensitize them on its use. Since majority of the bank customers who have adopted the mobile banking technology have used it for less than three years, it shows the technology is new and it requires promotion and continues awareness creation.
4. According to the study, banks should also give a high attention to empowering their staff through training. In order to give a consistent support to customers who require any kind of knowledge regarding mobile banking service, the staffs are needed to develop their skills toward the current and forthcoming technology of mobile banking service.

5.3 Areas for future research

The study identifies the following as areas for further studies:

- The study focused on factors influencing adoption of Mobile banking in Addis Ababa, Ethiopia as a case study, it would be impractical to generalize the findings to the other banks across the country because there are about more financial institutions and their branches in Ethiopia. Thus, it would be useful if other researches are conducted in other Banks and cities as well so as to study customers 'opinions and attitudes on what factors can significantly influence mobile banking adoption.
- In addition to the above, a little study has been conducted in Ethiopia especially with the use of qualitative research techniques to solicit information on customers 'opinions and attitudes regarding factors influencing adoption of mobile banking. Thus, more qualitative research is therefore recommended for future studies.
- The study was based on TAM with integration of security and privacy, bank support and self-efficacy in predicting factors influencing adoption of mobile banking in Ethiopia, thus, further studies can be conducted in an attempt to explore other additional factors that have not been identified in the model but that might also have significant impact on adoption of mobile banking in Ethiopia.

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Appendix I

ADDIS ABABA UNIVERSITY
SCHOOL OF COMMERCE
MARKETING MANAGEMENT PROGRAM

Dear respondents,

This questionnaire is designed to collect information on the “Factor influencing adoption of mobile banking service – case of commercial banks in Addis Ababa Ethiopia” for educational purposes. The information is solicited for the partial fulfillment of a Master of Arts Degree in Marketing Management at Addis Ababa University School of Commerce. All the information you provide will be kept confidential and used only for academic purpose. thank you in advance for you time and kind cooperation.

Part -1 General Information

Please put an “X “mark of your choice on the space provided.

1. Gender?

Male Female

2. Age group?

18 - 25 26 – 30 31 – 40 41 – 50 Above 51

3. Education Level

- No formal education
- Secondary education
- Diploma
- University degree / college graduate
- Master’s Degree
- PhD

4. Income per month (Etb)?

No Income sources

100 – 1,999

2,000 – 3,999

4,000 – 8,999

9,000 – 14,999

15,000 – 25,000

Above 25,000

5. Work status?

Employed un-Employed A student Military House wife retired

6. Which bank's service are you currently using?

Commercial bank of Ethiopia Dashen Bank Awash bank

7. How many years have you been using mobile banking service?

1 2 3

8. Which service do you use in your mobile banking?

Balance inquiry

View mini-statements

Fund transfer

Merchant payment

Currency conversion

Cash withdrawal

Other services

None of those

Part II – Basic Information

Please put “X “in the space provided on the appropriate response category against each question where 1= Strongly Disagree (SD). 2= Disagree (D). 3= Neutral (N). 4= Agree (A). 5= Strongly Agree (SA).

S.N	Factors influencing adoption of mobile banking service	Statements	scales				
			1	2	3	4	5
			SD	D	N	A	SA
1.	Perceived usefulness	1. Using mobile banking enables me to utilize banking services more quickly					
		2. Using mobile banking improves my performance					
		3. Mobile banking increases my productivity					
		4. Using mobile banking services is cost efficient					
2.	Perceived ease of use	1. Learning to use mobile banking is easy for me					
		2. I find it easy to do what I want to do by having a mobile banking					
		3. I find mobile banking flexible to interact with					
		4. My interaction with mobile banking is clear and understandable					
3.	Security and Privacy	1. Using Mobile banking is financially secure					
		2. I trust in the ability of an online bank to protect my privacy					
		3. I am not worried about the security of mobile banking.					
		4. Matters of security have no influence on using Mobile banking services					
4.	Self-Efficacy	1. I have confidence in my self					
		2. I feel confident about using Mobile banking					
		3. I feel comfortable when using new technologies					

			scales				
			1	2	3	4	5
			SD	D	N	A	SA
		4. I am very skilled at conducting electronic transactions.					
5.	Facilitating Conditions (Bank Support)	1. It is important for me to have someone to help out in the bank in case of a problem when using mobile banking					
		2. I think my bank is able to help me quickly in technical and non-technical issues related to mobile banking					
		3. I think the bank provides sufficient training and guides to use mobile banking					
		4. I am satisfied with the personal service I get from the bank related to mobile banking					
6.	Adoption of mobile banking	1. I find that mobile banking helps my day to day activity					
		2. I intend to use mobile banking to perform financial transactions					
		3. I use electronic fund transfer to transact large amounts of money					
		4. I will strongly recommend others to use mobile banking.					
		5. I will frequently use mobile banking in the future					

Thank you

Appendix II

Descriptive Statistics Demographics

a. Mobile banking adoption and Gender

Descriptives					
	Male or female?		Statistic	Std. Error	
Adoption of mobile banking		Mean	19.2970	.22123	
		95% Confidence Interval for Mean			
			Lower Bound	18.8601	
			Upper Bound	19.7338	
		5% Trimmed Mean	19.4815		
		Median	19.0000		
		Variance	8.076		
		Male	Std. Deviation	2.84181	
			Minimum	11.00	
			Maximum	25.00	
			Range	14.00	
			Interquartile Range	4.00	
			Skewness	-.744	.189
			Kurtosis	.793	.376
			Mean	19.2059	.23453
			95% Confidence Interval for Mean		
				Lower Bound	18.7406
				Upper Bound	19.6711
			5% Trimmed Mean	19.3159	
			Median	20.0000	
		Variance	5.611		
	Female	Std. Deviation	2.36868		
		Minimum	13.00		
		Maximum	23.00		
		Range	10.00		
		Interquartile Range	3.50		
		Skewness	-.620	.239	
		Kurtosis	-.285	.474	

b. Mobile banking adoption and Age group

Descriptives						
	Age group		Statistic	Std. Error		
Adoption of mobile banking	18 - 25	Mean	18.6296	.49253		
		95% Confidence Interval for Mean	Lower Bound	17.6172		
			Upper Bound	19.6420		
		5% Trimmed Mean		18.5473		
		Median		18.0000		
		Variance		6.550		
		Std. Deviation		2.55927		
		Minimum		14.00		
		Maximum		25.00		
		Range		11.00		
		Interquartile Range		5.00		
		Skewness		.760	.448	
		Kurtosis		.085	.872	
		26 - 30	Mean		19.5268	.21635
			95% Confidence Interval for Mean	Lower Bound	19.0981	
			Upper Bound	19.9555		
	5% Trimmed Mean			19.6448		
	Median			20.0000		
	Variance			5.243		
	Std. Deviation			2.28965		
	Minimum			11.00		
	Maximum			23.00		
	Range			12.00		
	31 - 40	Interquartile Range		4.00		
		Skewness		-.771	.228	
Kurtosis			.416	.453		
Mean			19.6164	.32327		
95% Confidence Interval for Mean		Lower Bound	18.9720			
		Upper Bound	20.2609			
Mean			20.2609			

		5% Trimmed Mean	19.8265	
		Median	20.0000	
		Variance	7.629	
		Std. Deviation	2.76199	
		Minimum	11.00	
		Maximum	25.00	
		Range	14.00	
		Interquartile Range	4.00	
		Skewness	-.893	.281
		Kurtosis	.546	.555
		Mean	18.8780	.47395
		95% Confidence Interval for Lower Bound	17.9202	
		Mean Upper Bound	19.8359	
		5% Trimmed Mean	18.9797	
		Median	19.0000	
		Variance	9.210	
	41 - 50	Std. Deviation	3.03476	
		Minimum	11.00	
		Maximum	25.00	
		Range	14.00	
		Interquartile Range	2.50	
		Skewness	-.792	.369
		Kurtosis	1.963	.724
		Mean	17.6429	.91151
		95% Confidence Interval for Lower Bound	15.6737	
		Mean Upper Bound	19.6121	
		5% Trimmed Mean	17.6587	
		Median	19.0000	
		Variance	11.632	
	Above 51	Std. Deviation	3.41055	
		Minimum	13.00	
		Maximum	22.00	
		Range	9.00	
		Interquartile Range	7.25	
		Skewness	-.403	.597
		Kurtosis	-1.346	1.154

c. Education Level and Mobile banking adoption

				Descriptives		
		Education level			Statistic	Std. Error
Adoption of mobile banking	Secondary Education	Mean			16.0000	.88641
			Lower		13.9040	
		95% Confidence Interval for	Bound			
		Mean	Upper		18.0960	
			Bound			
		5% Trimmed Mean			16.0000	
		Median			16.0000	
		Variance			6.286	
		Std. Deviation			2.50713	
		Minimum			13.00	
		Maximum			19.00	
		Range			6.00	
		Interquartile Range			5.50	
		Skewness			.000	.752
	Kurtosis			-1.811	1.481	
	Diploma	Mean			20.0769	.70221
			Lower		18.5469	
		95% Confidence Interval for	Bound			
		Mean	Upper		21.6069	
			Bound			
5% Trimmed Mean				20.3632		
Median				20.0000		
Variance				6.410		
Std. Deviation				2.53185		
Minimum				13.00		
Maximum				22.00		
Range				9.00		
Interquartile Range				3.00		
Skewness				-4.922	.616	

	Kurtosis		8.782	1.191
	Mean		19.0289	.18522
		Lower	18.6633	
	95% Confidence Interval for	Bound		
	Mean	Upper	19.3945	
		Bound		
	5% Trimmed Mean		19.1734	
	Median		19.0000	
University degree or college graduate	Variance		5.935	
	Std. Deviation		2.43623	
	Minimum		11.00	
	Maximum		23.00	
	Range		12.00	
	Interquartile Range		5.00	
	Skewness		-.588	.185
	Kurtosis		.236	.367
	Mean		20.0274	.33898
		Lower	19.3517	
	95% Confidence Interval for	Bound		
	Mean	Upper	20.7031	
		Bound		
	5% Trimmed Mean		20.2230	
	Median		21.0000	
Master's Degree	Variance		8.388	
	Std. Deviation		2.89623	
	Minimum		11.00	
	Maximum		25.00	
	Range		14.00	
	Interquartile Range		3.50	
	Skewness		-6.157	.281
	Kurtosis		5.216	.555