ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE

Factors Affecting the Adoption of Mobile Money Services: In the case of tele birr

A Thesis Submitted to School of Graduate Studies of Addis Ababa University; in Partial Fulfilment of the Requirement for Degree of Masters of Marketing Management

By: Fanuel Tsegaye GSE/7781/11

Advisor: Dr. Tewodros Mesfin

June, 2022

Addis Ababa

Declaration

I declare that the thesis "Factors Affecting the Adoption of Mobile Money Services: in the Case of Tele Birr" is my original work, that it has never been submitted for a degree at another university, and that all sources used throughout the entire study have been fully acknowledged.

Affirmed by: Fanuel Tsegaye

Signature: _____

Date: _____

Statement of Certification

This is to confirm that the thesis "Factors Affecting the Adoption of Mobile Money Services: In the case of tele birr" was under taken by Fanuel Tsegaye for the partial fulfillment of degree of masters of Marketing Management at the Addis Ababa University. To the best of my knowledge, this is an original work that has not been submitted for credit at this or any other university.

Thesis Advisor: Dr. Tewodros Mesfin.

Signature:

Date:

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Acknowledgement

I would like to express my heartfelt gratitude to The Almighty God, Glory to him for his grace, protection, and guidance. I am grateful to my thesis advisor Dr. Tewodros for his support, in writing this thesis.

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Dedication

I dedicate this work to the memories of my late mother, **Addise Tsehayou**.

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Acronyms/Abbreviations

ICT	Information Communications Technology
NBE	National Bank of Ethiopia
SMS	Short Message Service
CBE	Commercial Bank of Ethiopia
GSM	Global System for Mobile Communication
MMS	Mobile Money Service
FI	Financial Inclusion
GPFI	Global Partnership for financial Inclusion
IDT	Innovation Diffusion Theory
PEOU	Perceived Ease of Use
PU	Perceived-Usefulness
PIN	Personal Identity Number
PR	Perceived-risk
PC	Perceived-cost
PT	Perceived-trust
TAM	Technology-Acceptance-Model
UTAUT	Unified Theory of Acceptance and Use of Technology
TPB	Theory of Planned-Behavior
USSD	Unstructured Supplementary Service Data
SPSS	Statistical Package for Social Science

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Abstract

The study adopted Technology acceptance model (TAM) and Unified Theory of Acceptance and Use of Technology (UATUT) as a research model. Perceived -Usefulness, perceived ease of use, Perceived -trust, Perceived -cost, Perceived -risk and social -influence were among the six independent variables included in the study. The study hypothesizes the above variables that are presumed to have an effect on the adoption of mobile money service. Quantitative research approach was used to answer the research questions. The data for this study was gathered through a questionnaire that was distributed to 330 people. Factor analysis was used to establish the construct validity of the measurement items, and reliability was established using Cronbach's alpha coefficient. Using SPSS 25 software, the collected data was analyzed by means of Pearson correlation and multiple regression methods. According to the findings of the study perceived-usefulness, perceived-ease of use, perceived -trust and social -influence were seen to have a significant effect on the adoption of mobile money services. On the other hand, perceived -cost and perceived risk were shown to have no effect on the service's adoption.

The insignificant effect is may be due to higher transaction cost customers face and transaction errors that may occur while using the service. Therefore, its recommended by the researcher that the service provider should work to upgrade the performance of the system and minimize transaction errors, applying higher security for protecting customer's privacy and consider a reasonable transaction cost to achieve higher level adoption of the service.

Key Words: Tele birr Mobile Money service, Adoption, Technology Acceptance Model

Chapter One-
Introduction

1.1. Background of the Study

The phrase "digital finance" refers to the impact of new technology on the financial services comprising different services such as payments, credit, savings, remittances, and insurance just to mention a few of the financial services that can now be accessed and delivered through digital channels (European Commission, 2020) (Alliance for Financial Inclusion, 2021).

While financial technological innovation is not new, investment in novel and innovative technologies has increased dramatically in recent years. It's now simple to communicate with a bank via mobile technology to make payments, transfer funds, and access other products utilizing a range of new technologies that weren't available only a few years ago– one of them being mobile money service (European Commission, 2020).

(Jack & Suri, 2011) referred Mobile money or mobile money service as a digital financial service which is a broad alternate financial technology tool that gives individuals **access** to financial services such as transactions and payments performed from or with a mobile device instead of using traditional financial alternatives like cash, credit/debit cards, or checks. Mobile money has sparked interest in part because it is largely seen as a viable means of providing financial services to millions of individuals throughout the world (Donovan, 2012).

The widespread use of mobile money accounts has opened up new opportunities to better serve women, the poor, and other traditionally underserved groups. Indeed, there are some early signs that mobile money accounts might be helping to close the gender gap and also helping to reduce the gaps between richer and poorer in account ownership (Demirgüç-Kunt, et al., 2018).

Mobile money systems can help emerging economies gain better access to financial services. Several of these systems have been developed in Africa specifically to support the unbanked in accessing financial services. The most popular mobile money system is the one led by mobile network operators (MNOs), in which mobile money customers do not need to be linked to a traditional bank account but instead conduct banking transactions through their MNOs (Kanobe, 2017).

Mobile money can be a much faster, less expensive, and safer way to transfer money rather than a bank or post office transfer. It offers the opportunity for unbanked poor people who are either illiterate and lack access to formal banks or are intimidated by their rules and schedules (Yunus, et al., 2016).

For more than a decade, Sub-Saharan Africa has been at the frontline of the mobile money industry, and continued to account for the majority of growth in 2020. (43 per cent of all new accounts). By the end of the year, the region had 548 million registered accounts, with over 150 million of them active monthly. Although absolute growth was highest in West and East Africa, Southern Africa grew the fastest at 24 per cent year on year (GSM Association, 2021).

Tele birr is newly introduced mobile money service developed by Huawei that is owned and was launched by Ethio-telecom, the only mobile network operator in Ethiopia. It is the only Mobile network operator (MNO)-provider led type of service in Ethiopia and it is a relatively new digital financial service compared to the rest of the mobile money services in the country.

Various studies have been conducted around the world to identify the factors affecting the adoption of digital financial services and results have varied. For instance, the findings of a study conducted by (Yan, et al., 2021) showed that users' intentions to adopt mobile financial service platforms are strongly influenced by social-influence, perceived-trust, and perceived- value, whereas, perceived-risk, performance-expectancy, and effort-expectancy were observed to influence users' perceived value

of the mobile financial service platforms. According to the findings of another study by (Lema, 2014), mobile financial services adoption was influenced by perceived -usefulness, perceived -cost, and social -influence. The adoption of the services was shown to be unaffected by perceived ease-of-use, perceived risk, or perceived trust.

Furthermore, a study in by (NOREEN & GHAZALIZ, 2021) revealed that security -risk, privacy -risk, and financial -risk are three aspects of perceived -risk that have a major influence on mobile money service adoption in Pakistan, according to their study. Mobile money service adoption in the country was also considered to be affected by perceived-trust. According to (Chitungo & Munongo, 2013) research findings, perceived -usefulness, perceived ease of use, relative advantage, personal innovativeness, and societal norms all have a substantial impact on a user's attitude, influencing their inclination to utilize a mobile financial service. whilst the service's adoption was deterred by Perceived risks and costs.

1.2. Statement of Problem

The banking and financial industry has been reshaped by technological advancements over the last decade, and it has become one of the leading sectors in implementing new technology in consumer markets. Mobile communication technologies now provide consumers with a means of additional benefits, such as functional banking transactions and the ability to access banks at any time and from anywhere (Maitai, 2016). Mobile money transactions around the world will change the worlds of finance and mobile. It will improve people's lives by making them more convenient, raise the standard of living for the unbanked population, and stimulate economic development.

The use of mobile money transfer is a rapidly growing industry that has significantly influenced financial transactions all over the world (Maitai, 2016). One of the key factors in the current rise of mobile financial services is the use of mobile phone technology for easy access to financial services.

Mobile money services are now available throughout much of the world. Consumer acceptance of new technology, particularly technology associated with money, requires the development of trust in society to provide the service as required.

Despite widespread awareness, mobile money services are not seen as financial tools but rather as a substitute for transmitting money to users and non-users. According to (Abdinoor, 2017), the relative advantage (perceived benefit), ease of use, usefulness, and the cost effect of mobile money services seen as the factors holding back acceptance and adoption of mobile money services.

Adoption of mobile money service is rapidly increasing in Ethiopia. As of December 2020, the four most prominent and leading Mobile Money services in Ethiopia are: CBE Birr (provided by the state-owned Commercial Bank of Ethiopia) with above 3 Million registered customers, M-BIRR (provided by six MFIs) Above 2.2 Million registered customers, Hello Cash (provided by three banks and one MFI) Above 1.3 Million registered customers, and Amole Mobile Money (provided by Dashen Bank S.C.) with 1.9 Million registered users (GSM Association, 2021).

Tele birr on the other hand, is a relatively new digital financial service compared to the rest of the mobile money services in Ethiopia and it is the only Mobile Network Operator (MNO)- provider led type of service in the country while the other services are backed by banks or micro finance institutions. However, it has already surpassed the rest in number of customers.

According to Ethio telecom's 2021/22 half year performance report, total customers of tele birr reached 13.1 Million with active customers' rate of 79.8%, 15.6 million transaction counts with an amount of 5.1 billion ETB and 100,000 USD remittance. However, 62% of customers used tele birr for Airtime pop-up and 12% of customers used tele birr to buy packages (Telecom, 2022). Based on the above report, its presumed that, even though subscriber number is higher compared to the rest of MMS, customers are using very limited portion of available services on tele birr.

It is crucial for mobile money service providers to understand the aspects that affect people's willingness to adopt or accept mobile money services. If mobile money service providers have a clear understanding of these elements, they will be able to build suitable marketing strategies, business models, processes, awareness initiatives, and pilot projects.

The result of researches conducted in different parts of the world at different times revealed different findings in relation to the factors affecting the adoption of mobile financial services. For example, a study conducted by (Matiwos, 2018) indicated that effort -expectancy, perceived -usefulness, perceived ease of use, perceived -cost, and mobile phone experience are all significant variables influencing mobile banking adoption, whereas performance -expectations, perceived -risk, and perceived -trust have a little or insignificant impact over the adoption of mobile banking service. Moreover, (Chitungo & Munongo, 2013) conducted a study in rural Zimbabwe and their finding revealed that the extended technology acceptance model (TAM) can predict consumer intention to use mobile banking.

Using the Technology Acceptance Model (TAM) as a research framework, this study aims to identify the factors affecting customer's intension to adopt tele birr mobile money service.(Viswanath & Davis, 1996) stressed that the user's attitude toward and acceptance of a new information system has a substantial effect on the successful information system adoption.

As tele birr is newly introduced system, no adequate research has been done yet to identify driving factors for adoption of the service. Thus, this study will have significant practicality in informing decision makers to provide recommendations for further improvements.

1.3. Research questions

The main research question is, what are the driving factors that affect or determine the adoption of mobile money service?

Eventually, this research will answer the following sub-questions:

- How does perceived usefulness affect the adoption of mobile money service?
- How does perceived ease of use affect the adoption of mobile money service?
- How does Perceived -trust affect the adoption of mobile money service?
- How does Perceived -risk affect the adoption of mobile money service?
- How does Perceived -cost affect the adoption of mobile money service?
- How does social -influence affect the adoption of mobile money service?

1.4. Objectives of the Study

1.4.1. General Objective

The general objective of the study is to determine and analyze the leading factors that affect the adoption of mobile money service, particularly tele birr mobile money service.

1.4.2. Specific objective

- To assess how Perceived usefulness, affect the adoption of mobile money service.
- To assess how perceived ease of use affect the adoption of mobile money service.
- To assess how Perceived -trust, affect the adoption of mobile money service.
- To assess how Perceived -risk, affect the adoption of mobile money service.
- To assess how Perceived -cost, affect the adoption of mobile money service.
- To assess how social -influence, affect the adoption of mobile money service.

1.5. Significance of the research

The rate of adoption of mobile money services varies from one place to another. Mobile money users vary by their individual and socio-economic characteristics. Data and research on mobile money service adoption are critical for measuring and evaluating financial inclusion programs. Therefore, it is believed that this study might reflect the depth of outreach of financial service and how clients use financial services, such as the regularity and duration of the financial product/service over time.

The result of this study may be used to elevate awareness of the role of mobile money services in improving financial services access. This research may contribute more to the literature on mobile money service adoption and could be a convenient input for researchers who are willing to do further researches in this area of study. Since scientifically collected, analyzed and documented data is a vital input for higher level management to make a better decision, this study will be a decent input data for policy makers and decision makers.

1.6. Scope and limitations of the study

This study will investigate factors that affect the adoption of mobile money service and concentrate on and confined only to tele birr mobile money service i.e. the newly introduced mobile network operator (MNO)-provider led type of service. Other mobile money services backed by banks and microfinance institutions will not be considered for this study. Moreover, the study is only limited to users/customers that are based in Addis Ababa. As a study that will be conducted on mobile money service, it is limited by the lack of previous research work conducted in the local circumstances and will rely mostly on relevant literature, research results from other countries, experiences from technology providers and regulatory frameworks.

1.7. Organization of the study

The research is structured in to five main chapters and each main chapter has its sub section. The first chapter covers the research's overall introduction, which includes the study's background, problem statement, research objectives, research questions, relevance, and scope. Chapter two shows literature reviews; various literatures are elaborated in detail on the research area. Chapter three is research methodologies, to answer what kind of data collection method is used, what are the sampling methods and what kind of data analysis method will be used. Chapter four presents about data analysis and discussion of results. Finally, the fifth chapter will be the summary, conclusions, and recommendations section.

Chapter Two
Review of Related Literature

2.1. Theoretical Literature Review

2.1.1. Digital Finance

Mobile money or mobile money service also referred to as digital financial service is broadly an alternate financial technology tool that gives individuals access to financial services such as transactions and payments performed from or via a mobile device instead of using traditional financial alternatives like cash, credit/debit cards, or checks (Jack & Suri, 2011).

The main idea of mobile money is that it is an electronic money that is primarily digital, has mobility and portability qualities. It differs from other forms of electronic payment (such as credit cards, debit cards, smart cards, and so on) in that it can mimic the basic characteristics of traditional money, such as liquidity and acceptance (Cernev, et al., 2011).

According to (Gencer, 2011) mobile money services can be grouped into three major categories. (1) Mobile finance which include savings, credit and insurance, (2) Mobile banking which encompass transactional services (e.g., bill payments, transfers and remittances) and informational services (e.g., account balance and transaction history) and (3) Mobile payments which is comprised of payments made in combinations to and/or from person, business and government.

2.1.2. Stakeholders in Mobile Money Services

The mobile money ecosystem utilizes the following list of key stakeholders with different roles for its successful implementation in a country.

1. Regulatory agency – is usually the country's central bank that develops the framework, establishes policies and guidelines, and grants licenses related to

mobile money services. It also oversees the operation of the services. The National Bank of Ethiopia (NBE) is the regulatory agency in the case of Ethiopia (NBE, Directive No. ONPS/01/2020, 2020).

2. Telecom service providers – also known as mobile network operator. They provide the telecom infrastructure for mobile money services such as the network coverage, SIM cards, and telecom channels (SMS, voice, USSD, internet, etc.) to send and receive transaction/payment information (GSM Association, 2021).

3. Owner/ Operator – of the mobile money service which typically will either be a mobile network operator or a financial institution (bank or microfinance institution) that is granted a license from the regulatory agency to provide mobile money services (Lal & Sachdev, 2015).

4. Bank Account Operator – Money flowing through a mobile money service must typically be held in a regulated account of some sort. In many situations, even when the service is provided by a non-bank, a regulated bank is commonly used as a back-end provider to hold customer funds as a custodian. These funds typically cannot be intermediated by the bank or the mobile money operator, and are also remote from the bankruptcy of the mobile money operator (Lal & Sachdev, 2015).

5. Technology Service Provider (TSP) – is a financial technology (fintech) company that develops, provides, and supports the technology systems used for delivering mobile money services (GSM Association, 2021).

6. Customers – are individuals who use mobile money services. They are required to have a mobile phone, a SIM card, and a valid ID to register for a mobile money account or a SIM card in their own name (GSM Association, 2021).

7. Agents – are small and mid-size retail shops that sign an agency agreement with the owner/operator to facilitate provision of mobile money services to

customers at their location. Agents receive commission payments from the service providers (GSM Association, 2021).

8. Merchants are individuals or businesses engaged in the trade of goods and/or services that are registered for a mobile money business account and accept mobile money as remuneration (GSM Association, 2021).

2.1.3. Financial Inclusion and Mobile Money Service

Despite its name, the notion of financial inclusion (FI) first emerged in academic literatures in studies of the inverse - financial exclusion. As retail financial markets became more accessible in the 1980s, more consumers than ever before had access to a wide range of financial goods (Kempson & Whyley, 1999). In-fact, one of the earliest studies on the subject conducted by (Leyshon & Thrift, 1995) defines financial exclusion as "those processes that prevent poor and disadvantaged social groups from gaining access to the financial system". Alternatively, FI can be described as the procedures that reduce financial exclusion.

As discussed by (Sarma, 2008) and (Demirgüç-Kunt, et al., 2007), FI is the process of ensuring that people, particularly those who are financially disadvantaged, have simple access to and usage of financial services from legitimate financial institutions in a timely, appropriate, and inexpensive way.

In another definition by GPFI, FI is a condition in which all working-age individuals, including those who are currently unable to access formal financial services, have effective access to credit, savings, payments, and insurance offered by formal institutions (Global Partnership for Financial Inclusion, 2011).

Although having a national strategy for FI, i.e. National Financial Inclusion Strategy which was put out by the NBE in April 2017, Ethiopia doesn't have a country level definition for the term. However, it "promotes access and use of a range of suitable (quality and affordable) financial products and services provided by regulated

financial institutions for all individuals and enterprise, to promote economic growth, reduce poverty and achieve financial stability" (National Bank of Ethiopia, 2017).

Mobile money is a digital tool to perform banking and financial services using mobile phones. The easy accessibility to bank accounts through internet banking, direct debit and the use of electronic payment systems reduce in principle the demand for mobile money. However, mobile money services have developed in niche segments such as P2P transfers, pre-paid mobile money and mobile micro payment thanks to its convenience and easy usage (Gutierrez, 2014).

Because of its ability to facilitate financial transactions in a quick, safe, and timely manner, the introduction of mobile money transfer services in some parts of Africa has an accelerated development. This rapid growth means that the way consumers access and use telecommunication services is also changing. This transformation has proven that countries around the world have the opportunity to use information communication technology (ICT) to empower disadvantaged populations with information (Lemma, 2018).

Pioneering mobile payment platforms in the Philippines, South Africa, and Kenya have demonstrated the potential of mobile money services by collectively accruing an estimated ten million subscribers as of early 2008 (GSMAssociation, 2009).

2.1.4. Mobile Money in Ethiopian

This section of the literature review will focus on discussions pertinent to the development and current status of the mobile money ecosystem in Ethiopia. Mobile money is a relatively new phenomenon in Ethiopia and it is regulated and overseen by the central bank of the country – The National Bank of Ethiopia (NBE). The first of two mobile money regulations was issued in December 2012. It only allowed the already established financial institutions (i.e., banks and MFIs) to offer the service.

The second regulatory directive for mobile money services is issued in March, 2020 titled "Licensing and Authorization of Payment Instrument Issuers Directive No. ONPS/01/2020" to repeal and replace the first regulation.

Even prior to the first regulation, partly inspired by M-Pesa, a successful counterpart from neighboring Kenya, Frenchman Thierry Artaud and Irishman Jim Noctor founded M-Birr with investments from Finnfund, KfW-DEG and European Investment Bank in 2009 and started marketing its product to MFIs in Ethiopia, which necessitated the issuance of the regulation before any deals could be made and operations start (Porschen, 2022).

Following the issuance of the regulation in late 2012, the first mobile money service M-Birr was launched as a pilot by the Government of Ethiopia in 2013 and officially launched in 2015 with six MFIs as its clients (GSM Association, 2021).

2.2. Adoption Theories

A number of models and frameworks have been developed to explain why people adopt new technologies, and these models include factors that can influence user acceptance (Taherdoost, 2017). These concepts and models have been expanded to be utilized in the research of mobile financial services and acceptance of mobile banking. Such theories and models include, Technology Acceptance Model (Davis, 1986) , Theory of Planned Behavior (Ajzen, 1985), Diffusion of Innovation theory (M. Rogers, 1983), Theory of Reasoned Action (Ajzen, 1985), and Unified Theory of Acceptance and Use of Technology (Venkatesh, 2003). Many studies have used established frameworks to conduct research, and some have integrated previous models or added new constructs to developed models to conduct their research.

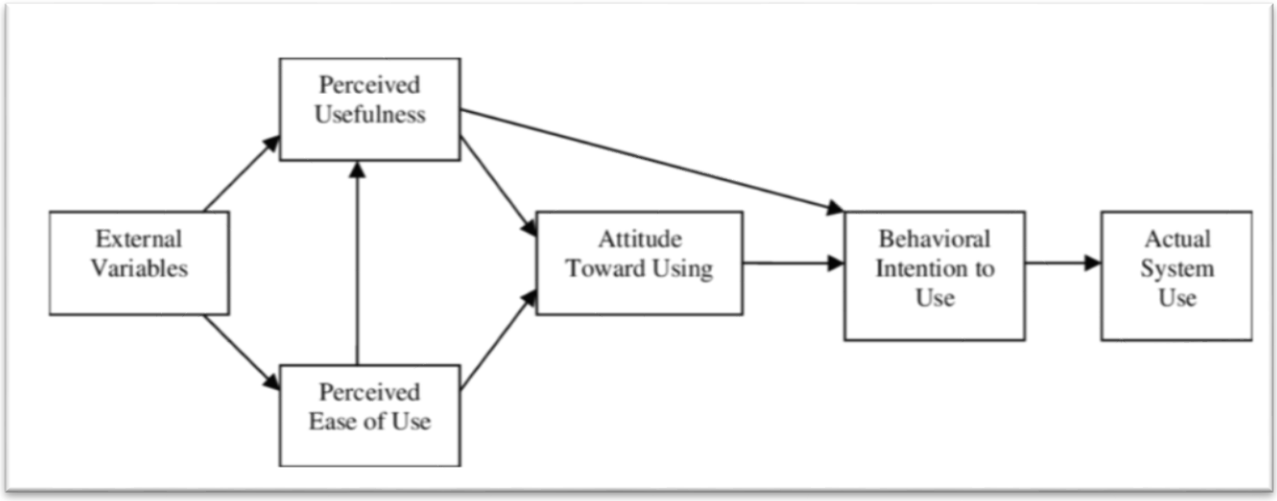
2.2.1. Technology Acceptance Model (TAM)

The Technology Acceptance Model is a theory of information systems that models the acceptance and use of newly developed technology (Davis, 1986). When users are introduced with new technology, TAM suggests that a range of factors determine how and when they use it. (Davis, 1986). Perceived-Usefulness and perceived ease of use are the two factors that control whether a newly developed technology will be accepted by its potential users.

As (Davis, 1986) discussed, Perceived -Usefulness (PU) is one of the main and independent concepts in the Technology Acceptance Model (TAM). It's described as "the extent to which a person feels that employing a certain system would improve his or her job performance." (Davis, 1986). This means the user is willing to use the system if he or she believes it will improve his or her work/job performance. The user's attitude toward using the system to improve his task is an important factor.

The TAM model also has a primary concept called perceived ease of use (PEOU), It is defined as "the degree to which a person feels that using a specific technology would be simple or free from effort."(Davis, 1986). In other word, PEOU is the user's level of understanding of the system to the point where it can be used on his or her task with little or no effort, unless it becomes unusable.

Figure 1: Technology Acceptance Model



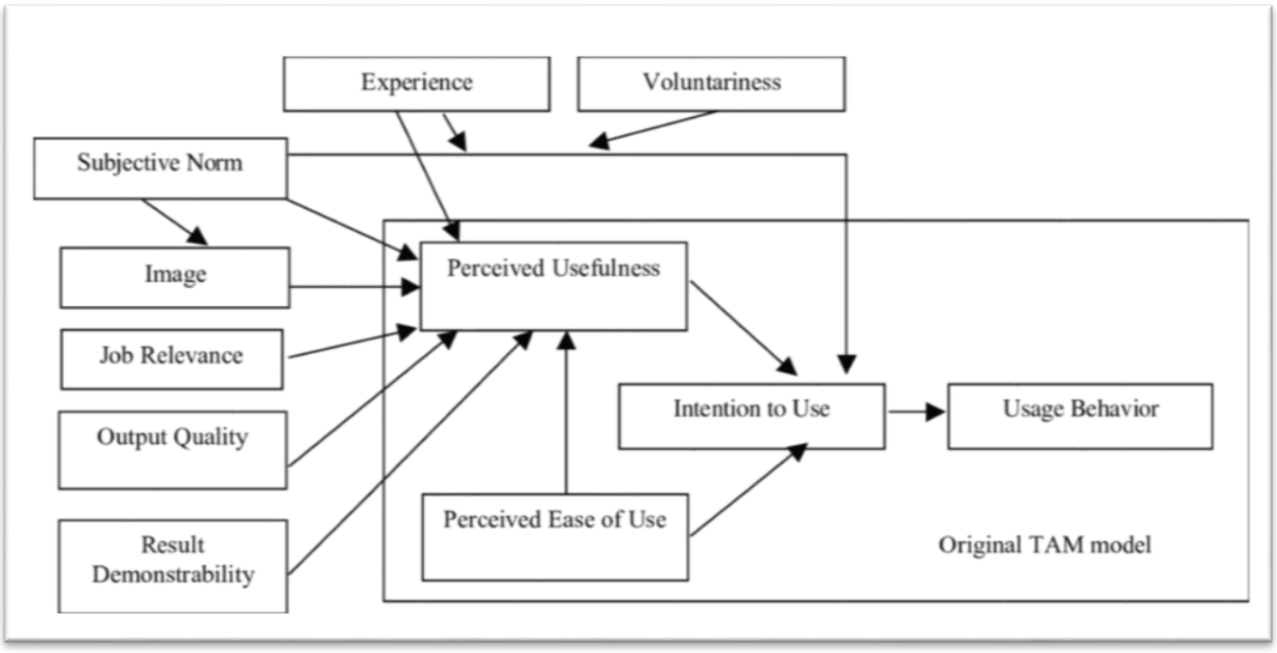
Source: (Davis, 1986)

2.2.2. Extended Theory of Technology Acceptance Model

TAM has been extended to include additional variables that influence customer behavior, allowing it to be used in other fields such as technological adoption and the use of new services.

(Venkatesh, 2000) developed an extension of the Technology Acceptance Model (TAM), that the model explains Perceived -Usefulness and usage intentions in terms of social influence and cognitive instrumental processes. By sing TAM as a starting point, TAM2 integrates additional theoretical concepts that covers social -influence processes (subjective norm, voluntariness, and image) and cognitive instrumental processes (job relevance, output quality, outcome demonstrability, and perceived ease of use).

Figure 2: Extended Technology Acceptance Model



Source:(Venkatesh, 2000)

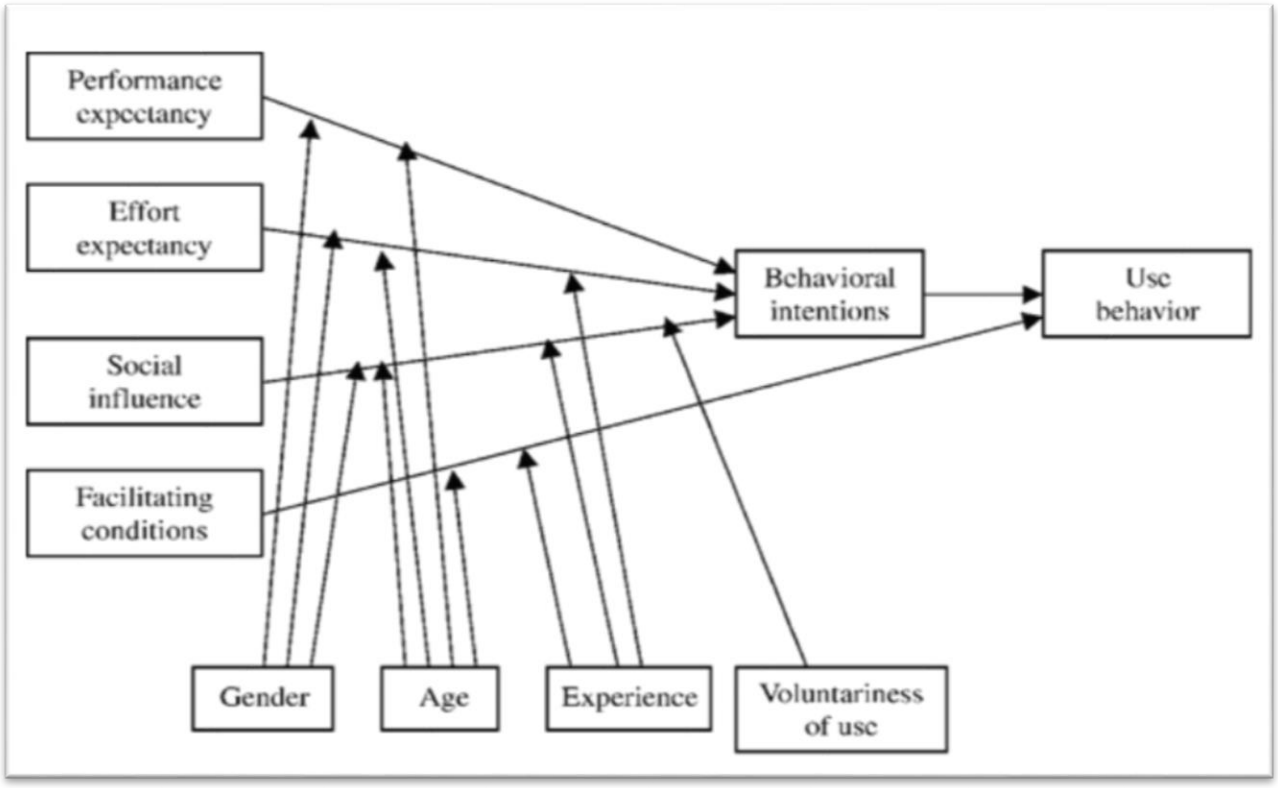
2.2.3. Unified Theory of use and acceptance technology (UTAUT)

The UTAUT is a technology acceptance model developed for predicting users' adoption of new technology which is formulated by (Venkatesh, 2003). The UTAUT model uses four core determinants to determine user's behavioral intention (BI) to use a technology: Performance expectancy (PE), effort expectancy (EE), social-influence (SI) and facilitating conditions (FC) (Venkatesh, 2003). Gender, age, experience, and voluntariness of use are moderating variables that are thought to have an effect on the four main variables of usage intention and behavior.

The theory was developed by evaluating and combining the components of eight prior models that had been used to describe how people use information systems (Venkatesh, 2003).

According to the theory, there are four major constructs, these are (performance expectancy, effort expectancy, social -influence, and facilitating conditions) which are the factors that influence usage intention and behavior. Individuals' behaviors and their acceptance ability to adopt new technologies were included in the theory, which is based on various constructs and factors. The psychological and behavioral perspectives of technology users have been the focus of these concepts.

Figure 3: UTAUT Model



Source: (Venkatesh, 2003)

2.2.4. Innovation Diffusion Theory (IDT)

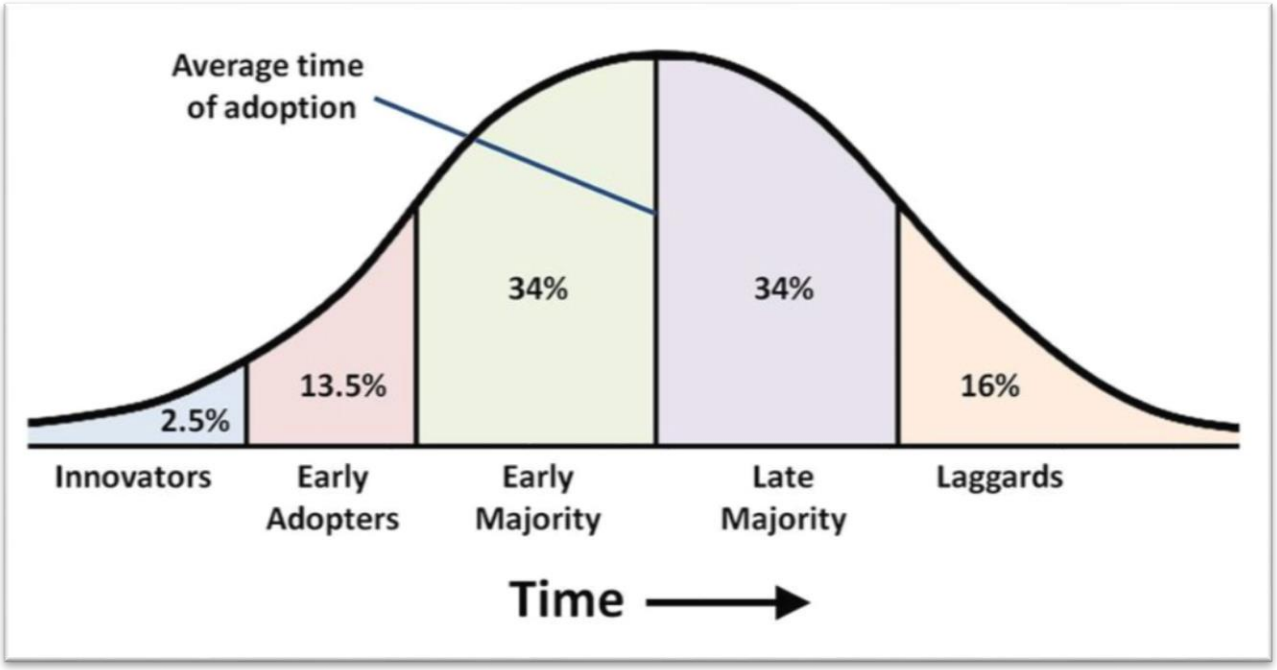
This theory was one of E.M. Rogers' earliest theories, developed in 1962. It mostly refers to the pattern and rate at which new ideas, habits, or products spread within a population. Innovation Diffusion theory uses a different way to studying changes than other theories. Instead of focusing on persuading individuals to change, this theory views change as its primarily driven by the development or "reinvention" of products and behaviors to better meet the requirements of individuals and groups. The diffusion of innovations is influenced by the innovations themselves, not by the individuals (Robinson, 2009).

Diffusion, on the other hand, is the process through which a discovery/innovation spreads over time through specific channels among members of a social system. Innovations, communication systems, time, and social systems are the four main elements of the IDT. (Rogers, 2003).

According to (Rogers, 2003), Innovation is a novel idea, an action, or product an individual or other unit of adoption perceives that novel concept, activity, or object as innovative. Communication system is a "channel through which users share the information with each other" (Rogers, 2003). It is a means that handles the movement of the information between users. Innovations spread more quickly when communication systems are better and faster. Adopter categorization and adoption rate are tracked in the time aspect of the innovation diffusion process. It keeps track of time from the moment an innovation is born until it is no longer an innovation. It measures the rate at which an innovation is diffused throughout a society and adopted by different users. Last but not least, a social system is a collection of interconnected units working together to solve problems in order to achieve a common purpose (Rogers, 2003). An innovation is of no use unless a social system recognizes it as such. If a society fails to recognize an innovation, it ceases to be one. The diffusion of innovation only takes place when a social system accepts it as an innovation and then shares information about it within the system and with other systems.

(Rogers, 2003) identified five factors that influence the adoption rates of innovations. These are relative advantage, compatibility, complexity, trial ability, and observability. (Rogers, 2003), then suggested that innovations that provide better relative advantage, compatibility, simplicity, trail ability, and observability will be adopted much faster than others.

Figure 4: Innovation Diffusion Model



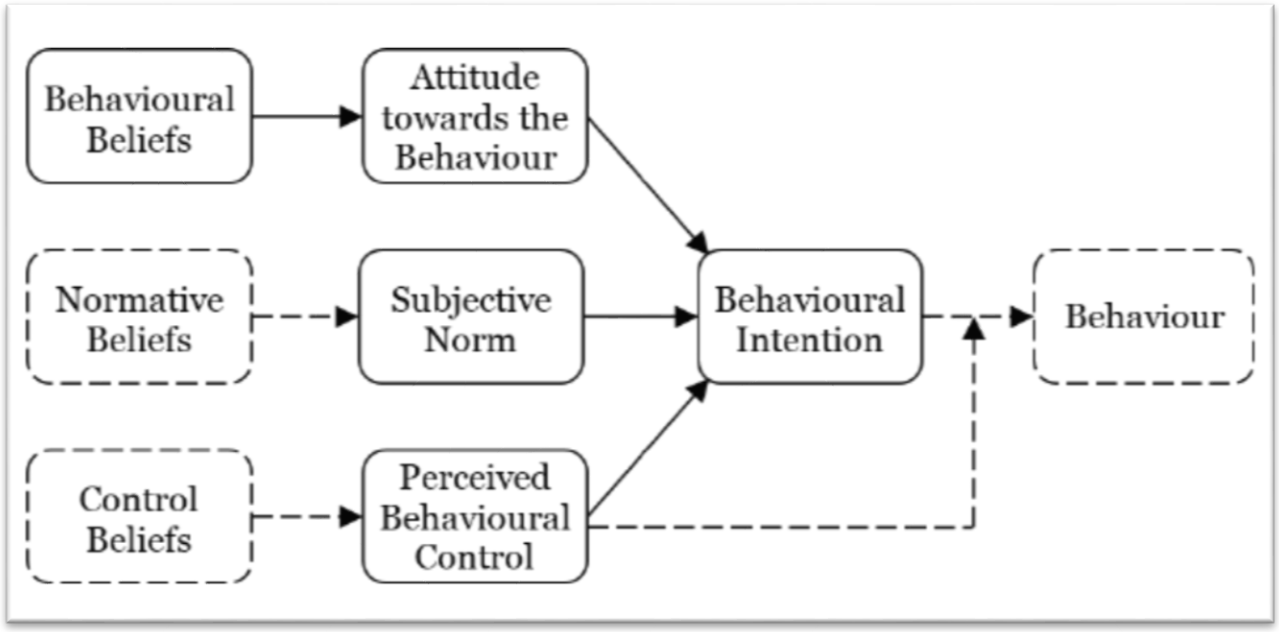
Source: (Rogers, 2003)

2.2.5. Theory of planned behavior

According to the Theory of Planned Behavior (TPB), planned behaviors are controlled by behavioral intentions, which are heavily impacted by an individual's attitude toward an activity, the subjective norms that surround its execution, and the individual's perception of their control over the behavior (Ajzen, 1985). According to the theory, perceived behavioral control, together with behavioral intention, can be used directly to predict behavioral achievement (Ajzen, 1991). Three fundamentally distinct factors of intention were identified in this theory. The first one is a person's attitude toward the conduct, which refers to a person's evaluation or judgment of the behavior in question, whether positive or negative. The social component known as subjective norm, which refers to the social pressure to perform or not perform a behavior, is the second predictor.

The third predictor of intention is perceived behavioral control, which relates to the perceived ease or difficulty of doing the behavior. It is thought to reflect past experience as well as predicted obstructions and hurdles. (Ajzen, 1991).

Figure 5: Theory of Planned Behavior



Source: (Ajzen, 1985)

2.3. Empirical Literature Review

2.3.1. Studies on Mobile Financial Service Adoption

Several studies have used the technology acceptance models (TAM) to study the adoption of mobile financial services. The initial TAM variables, as well as other variables such as perceived -risk, trust, and perceived -cost of mobile financial services, were employed in these research works.

In information technology research, the technology acceptance model (TAM) is really a useful tool. Many academics have used the traditional TAM in a variety of study areas (Yuanquan, et al., 2008). Almost all the extended TAM structures use Perceived ease of use (PEOU) and Perceived -Usefulness (PU) as independent variables.

The use of external variables is dependent on the type of research and illustrates versatility of TAM model. External variables have a big impact on TAM, however there aren't any distinct control variable design options (Yuanquan, et al., 2008).

TAM is a widely used and accepted model that has been extensively tested and validated that may be improved or extended by incorporating additional ideas or concepts (Venkatesh, 2000) (Masinge, 2010).

(Lema, 2014) examined the determinants that affect the adoption of mobile financial services. The study mainly focused on the unbanked population. (Lema, 2014) revealed in his study, perceived -risks (PR) and Perceived -cost (PC) had the highest correlation between the independent variables, showing a significant relationship between the variables. According to the findings, perceived -usefulness has a significant positive association with perceived -trust and social -influence. Perceived -cost, Perceived -trust, and Perceived -risk all have a significant relationship with perceived ease of use. In addition, Perceived -cost has a strong association with Perceived -trust and Perceived -risk. The findings also revealed that Perceived -trust had a significant positive relationship with mobile financial services adoption (Lema, 2014).

According to (Maradung, 2013) the mobile money service adoption is significantly influenced by the age of individuals, educational background, gender/sex and employment status. Gross income and ownership of bank accounts were found to be insignificant.

A research by (Masinge, 2010), the result found that, the perceived ease of use variable has a significant positive relationship with Perceived -Usefulness which implies that the easier it is to use mobile financial service, the more it will become useful. Trust has a negative significant correlation with Perceived -risk, and trust can play a role in mitigation of risk. The results show Perceived -risk had no effect on the adoption of mobile financial services.

A study conducted on adoption of “hello cash” system in Ethiopia by (Kumsa, 2017) identified driving factors of adoption of mobile banking system by taking perceived ease of use, Perceived -Usefulness and trust belief of users on the system as constructs. The result revealed that, perceived ease of use of mobile banking was identified as it drives the mobile banking adoption positively. Perceived -Usefulness is also one of drivers of mobile banking adoption. The Perceived -Usefulness has strong relationship with mobile banking adoption. Trust reliability or beliefs is also another driver that have positive influence on the customer adoption of mobile banking. Perceived-risks (security or privacy risk, financial risk and time risk) influences mobile banking negatively and identified as they are challenges of mobile banking system in Ethiopia (Kumsa, 2017).

In another study, titled, "Factors influencing consumers' adoption of mobile financial services in Tanzania" (Abdinoor, 2017), discovered that individual awareness, Perceived-Usefulness, and perceived benefit are all positively related to mobile financial service adoption, but cost effects are negatively related. The study also showed that respondents' demographic characteristics (gender, age, and income level) are among the factors that influence their desire to use mobile financial services. However, the cost effect has been identified as one of the barriers to use mobile banking services in Tanzania. (Abdinoor, 2017).

In Pakistan, (NOREEN & GHAZALIZ, 2021) looked at how perceived trust and different facets of perceived risk influence users' adoption of mobile money services. According the findings of the study, perceived risk, particularly security risk, privacy risk, and financial risk, all have a major impact on the adoption of mobile money services in the country.

Taking the above literatures as evidence, its apparent that TAM methodologies were widely used to study technological adoption in various situations with additional variables and TAM methodology has been found to work in most studies. However, these theories must be tailored to fit the learning settings and the type of the service provided.

Thus, for the purpose of achieving the objective of this study, TAM and other related theories on this study area were used to assess how these determinants in TAM and other theories affect the adoption of mobile money service.

2.4. Research Hypothesis

By taking the objective of the study and main research question, the researcher proposed the following hypotheses;

(Davis, 1986) suggested that perceived -usefulness and perceived ease-of-use are the two factors that control whether a newly developed technology will be accepted by its potential users. Perceived -usefulness and perceived –ease of use have a positive relationship, both of which are important factors in mobile money service adoption. In another study conducted by (Lule, 2008), the findings revealed that customers' attitudes are significantly influenced by perceived -usefulness and perceived –ease of use, which in turn impacts mobile banking adoption.

Therefore, referring the above findings, its hypothesized that:

H1: Perceived-usefulness and perceived-ease of use have a positive effect on the adoption of mobile money service.

The finding of a study by (Yan, et al., 2021) indicated that social-influence had a positive effect on mobile banking service adoption. Another study conducted by (Lema, 2017), also discovered that the adoption of mobile financial services was significantly affected by social-influence. As a result, it is hypothesized that:

H2: Social-influence have a significant effect on the adoption of mobile money service.

According to a study by (Lema, 2014), the finding indicated that Perceived-trust was found to have a significant positive relationship with the adoption of mobile financial services. (Eshetu, 2020), Perceived-trust shows a positive and significant relationship with the behavioral intention to use CBE-BIRR mobile money service. So, its hypothesized that:

H3: Perceived-trust have a positive effect on the adoption of mobile money service.

Perceived -risk, particularly security, privacy, and financial risk, has a significant influence on the adoption of mobile money services, according to (NOREEN & GHAZALIZ, 2021). According to reports, the growth of mobile banking services raises concerns about money losses, password security, network issues, hacking, and the loss of personal data. As a result, it's thought that risk perception has a negative impact on mobile banking adoption (Lema, 2014). So, Its hypothesized that:

H4: Perceived-risk have a significant negative effect on the adoption of mobile money service.

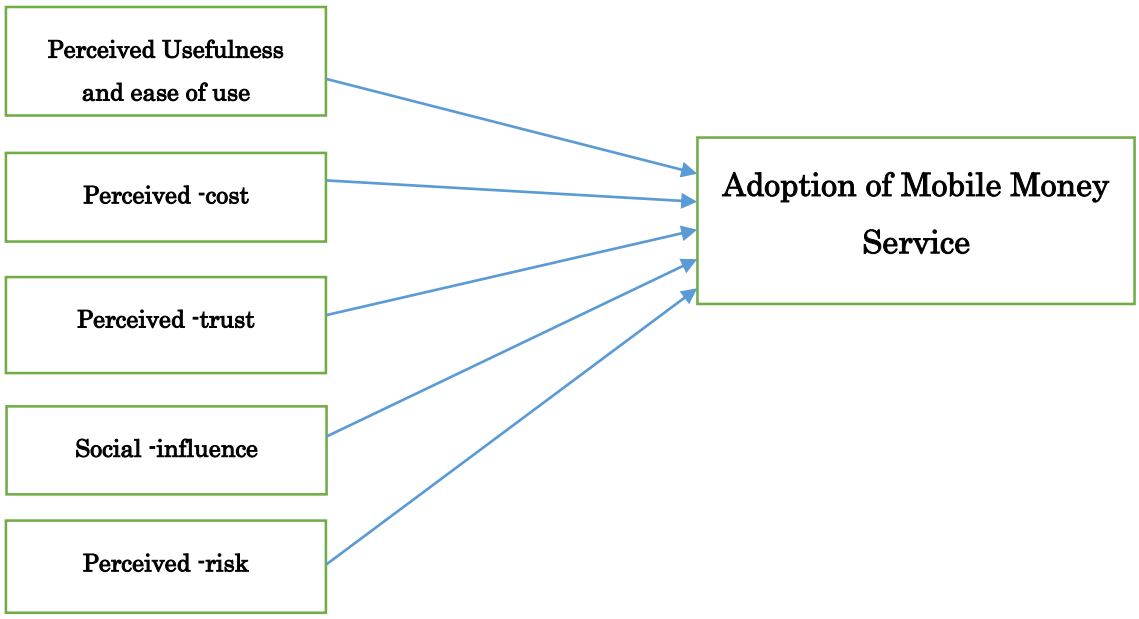
According to (Matiwos, 2018), the correlation results of his study indicated that Perceived-cost has a negative relationship with mobile banking adoption. In another study conducted by (Njele, 2021), the result implicated that the adoption of mobile money service is significantly affected by Perceived -cost. So, its hypothesized that;

H5: Perceived-cost on mobile money service have a significant negative effect on the adoption of the service.

2.5. Conceptual Framework

For the purpose of this study, a research model is developed that consists of factors that affect the adoption of mobile money service, by employing Technology Acceptance Model determinants as a research framework. Perceived Ease of Use (PEOU), Perceived -Usefulness (PU), Perceived -cost (PC), Perceived -trust (PT), Perceived -risk (PR), and Social -influence (SI) as independent factors, and mobile money service adoption as a dependent variable, are among the determinants included in this study.

Figure 6: Research Model : Conceptual Framework indicating the relationships between dependent and independent variables



Source: Research model adopted and accustomed from (Masinge, 2010) (Lema, 2014)and (Lee, 2009)

Chapter Three

Research Methodology

3.1. Introduction

This chapter aims to describe the research methods and approaches that was used to answer the research questions. This chapter covers the description of the study area, research approach, research method and design, research hypothesis, conceptual framework, population of the study and sampling procedure, source and type of data used for the study, data collection procedure and method of data analysis and finally ethical considerations are discussed.

3.2. Description of the Study Area

In developing countries, mobile money services are one of the emerging technologies that transforms the entire economy (Demirgüç-Kunt, et al., 2018). According to (Donovan, 2012) most of the 100-plus deployments of mobile money systems have been in developing countries, with around half in Africa alone. Tele birr is the chosen mobile money service to be assessed to identify the factors affecting the adoption of the service. This study encompasses tele birr users subscribed to use the system in Addis Ababa.

3.3. Research Approach, Method and Design

3.3.1. Research Approach

A research approach, according to (Chetty, 2016), is a strategy and technique that includes everything from general assumptions to precise data collecting, analysis, and interpretation procedures. (Kivunja, 2017) , according to its definition a research paradigm is the conceptual lens through which a researcher analyzes the methodological components of their study project in order to establish the research methodologies to be employed and how the data will be examined. This study is based on a research paradigm of positivism which focuses on identifying associations or causal relationship of variables through a quantitative approach.

According to (Park, et al., 2020), Positivism is associated with the hypothetic-deductive paradigm of science, which relies on operationalizing variables and measures to check prior assumptions and experimentation; the outcomes of hypothesis testing are utilized to guide and develop science. This study used a deductive or informally called "Top-down" research approach for data analysis.

3.3.2. Research Design

(Bhattacherjee, 2012), defined research design as a detailed plan for collecting data in an empirical study and it is an outline for empirical research aimed at answering particular research questions or testing some particular hypotheses. In order to realize the objective of the study, this research used a descriptive research design that deploys quantitative data collection method to gather information. According to (Creswell, 2009), a quantitative study examines the relationship or association between variables in order to evaluate objective ideas. These variables can then be measured using tools, resulting in numerical data that can be examined using statistical processes. In this study, Quantitative research was used to provide statistical measurement and analysis of mobile money adoption variables. The preferred design offered the researcher the prospect to easily collect data then assess, identify and describe relevant aspects of the phenomena of interest from the perspectives of the study area.

3.3.3. Research Method

(Kothari, 2004) defined a research method as the methods the researchers use in carrying out research operations. In other words, research methods are all of the methods that a researcher employs while studying his or her research problem. Research methods are strategies, processes or techniques used in data collection or facts for analysis in order to discover new information or gain a better understanding of the subject matter.

Quantitative data collection method was used in this study to provide numerical measurement and analysis of the adoption factors. Survey questionnaires was used to standardize the findings as well as to allow data aggregation. A survey is a research approach that involves the systematic collection of data about individuals and their preferences, thoughts, and actions using standardized questionnaires or interviews (Bhattacherjee, 2012).

(Bhattacherjee, 2012) also suggests that surveys are a great way to collect unobservable data including people's preferences, traits, attitudes, beliefs, and actions, as well as factual information. He also suggests that survey research is appropriate for gathering data about a population that is too vast to observe in person. This study aims to determine whether the constructs or variables are leading factors in the adoption of mobile money service.

3.4. Population and Sampling Procedure

(Zikmund & Babin, 2010) defined population as any complete group of entities that share some common set of characteristics. A sampling unit is a single element or collection of elements that can be selected through the sampling process (Zikmund & Babin, 2010). The target population for this study comprises of tele birr mobile money service users who have subscribed to use the service and based in Addis Ababa, Ethiopia.

This study implemented a non-probability sampling method also known as Convenience sampling technique to select a target group from the population. Non-probability sampling is a method of sampling that provides no basis for determining the likelihood of each item in the population being included in the sample (Kothari, 2004). In other words, in non-probability sampling, the researchers select specific units of the universe for generating a sample on the assumption that a little mass selected from a large one will be typical or representative of the entire universe (Kothari, 2004). The likelihood of any particular member of the population being chosen is unpredictable in nonprobability sampling (Zikmund & Babin, 2010).

The researcher chose to use convenience sampling technique because users of mobile money service are heterogeneous and distributed informally, and this technique is suitable for the purpose of obtaining a large number of completed questionnaires quickly and economically.

Just as sample units may be selected to suit the convenience or judgment of the researcher, sample size may also be determined on the basis of professional judgments. Using a sample size similar to those used in previous studies provides the researcher with a comparison with other researchers' judgments (Zikmund, 2010).

(Zikmund & Babin, 2003) states that three factors are required to specify sample size: (1) the variance, or heterogeneity, of the population; (2) the magnitude of acceptable error; and (3) the confidence level.

In practice, a number of tables have been constructed for determining sample size. According to (Zikmund & Babin, 2003) for a population size of 500,000 to ∞, a sample size of 322 is required to obtain 95% confidence level and 5% of range of errors.

3.4.1. Sample Size

This study used data collected from customers who have subscribed to use tele birr mobile money service and those who are based in Addis Ababa. Thus, this study has a sample size of 308 respondents who filled and completed the questionnaire which accounted 95.65% of the proposed sample size for this study.

3.5. Source and Types of Data

The researcher conducted the study using data collected from both primary and secondary sources. Primary data are those that are obtained for the first time and are hence unique (Kothari, 2004).

The primary data sources are basically users of tele birr mobile money services found in Addis Ababa. The primary data for this study was collected using a survey questionnaire that was distributed to respondents in various locations.

Different websites, bulletins, revised manuals, documents, tele birr customer profiles and records and books written by various authors were used to collect the secondary data. NBE directives and strategies were referred and used to describe and elaborate the conceptual aspects of adoption and mobile money services.

3.6. Data Collection Procedures

In this study, the researcher distributed self-administered paper questionnaires to respondents in various areas, which were then collected after they were completed.

The study used both primary and secondary sources to gather data. The researcher collected primary data through administered questionnaire. The questionnaire involves inquiries to collect data from tele birr customers.

Respondents to the survey were asked to rate their agreement levels on a Likert scale extending from 1_strongly disagree, 2_Disagree 3_neither disagree nor agree 4_Agree to 5_Strongly Agree. In survey research, Likert questions are commonly used.

Participants express their agreement level to statements using a Likert scale, which normally has five or seven ordered response levels. Likert item data have distinct characteristics: discrete instead of continuous values, tied numbers, and restricted range (de Winter, 2010). Additionally, data was collected from secondary sources of information.

3.7. Questionnaire

The survey questionnaire for this study was divided into three sections. The first section focused on the demographic details of the respondents which includes variables as gender, age category, educational status and occupation.

The second section of the questionnaire focused on the MMS usage in which respondents were asked what type of transaction/service do they conduct/use with tele birr mobile money wallet?

The third section of the questionnaire focused on a more in-depth examination of the study's constructs and factors influencing mobile money adoption. The study adopted

the operational definition or measurement instrument for constructs of perceived -ease of use (PEOU), Perceived -Usefulness (PU), Perceived -cost (PC), Social -influence (SI), Perceived -trust (PT), Perceived -risk (PR) and adoption or behavioral intention (BI) to adopt mobile money service constructs from (Lee, 2009) (Luarn, 2005) (Lema, 2014) (Wu, 2005) (Davis, 1986) (Maradung, 2013) (Masinge, 2010). The goal of the survey was to see if the variables were linked and had an impact on mobile money adoption.

3.8. Method of Data Analysis

The gathered data were reviewed and screened, sorted and checked for errors then used for making the analysis. The data were presented in a way that is useful and organized for the analysis. After all the necessary data is gathered and edited for any errors as well as omissions, the primary data was analyzed using (SPSS) software.

(Zikmund & Babin, 2010) described descriptive analysis as the elementary transformation of data in a way that describes the basic characteristics such as central tendency, distribution, and variability. In this study, Descriptive analysis was conducted on the demographic data. The most popular technique for indicating the relationship of one variable to another is correlation. A correlation coefficient is a statistical measure of covariation, or how strongly two variables are related. The degree to which a change in one variable corresponds predictably to a change in another is referred to as covariance (Zikmund & Babin, 2010).

Pearson correlation analysis was used to analyze relationships between constructs of the study and also to check if multi collinearity exist in our data set. Various combinations of variables were tested to establish the best combinations of predictors. In addition, hypothesis formulated for this study were tested using multiple regression analysis based on their significance level or significance value. According to (Moore, et al., 2006) multiple regression is a statistical approach for analyzing the connection between several independent factors and a single dependent variable. The goal of multiple regression analysis is to use the independent variables whose values

are known to predict the value of the single dependent value. Hypothesis formulated for this study was tested by using multiple regression analysis.

3.8.1. Reliability of the Study

(Glen, 2022) posits, Cronbach's alpha or coefficient alpha measures the reliability or internal consistency of survey questions. It tests to see if multiple questions Likert scale surveys are reliable. Hence, before data analysis begins, the collected data were checked for reliability by using Cronbach's alpha analysis.

According to (Zikmund & Babin, 2010) cited in (Lema, 2014), scales with coefficient below 0.6 are considered to have poor reliability, values between 0.60 to 0.70 indicates a fair reliability, scales with coefficient between 0.70 and 0.80 to have a good reliability and finally scales with coefficient between 0.80 to 0.95 considered to have a very good reliability. In this study, the reliability test for items in each constructs were conducted by using SPSS 25 software and the result ranges from 0.675 to 0.914 which indicates all items in each constructs have a strong internal consistency.

As can be seen in the below table, for all 35 items of questionnaire, the Cronbach's alpha analysis result shows 0.844, which indicates all items used in the study has a very good reliability. In other word, participants who have chosen high scores for one item also chose high scores for the others, and vice versa. Respondents who chose low scores for one item also chose low scores for the others. The reliability test for each constructs are shown in the below table.

Table 1: Reliability Test of Mobile money service dimensions and Behavioral Intention to Use tele birr Mobile Money Service

MMS and Behavioral Intention Dimensions	Number Of Items	Cronbach's Alpha (α)	Remark
Perceived-Usefulness (PU)	4	0.847	Reliable
Perceived ease of use (PEOU)	7	0.847	Reliable
Perceived -risk (PR)	8	0.754	Reliable
Perceived -cost (PC)	3	0.675	Fair
Perceived -trust (PT)	4	0.860	Reliable
Social -influence (SI)	4	0.852	Reliable
Adoption (BI)	5	0.914	Reliable
Overall Items	35	0.844	Reliable

Source: Own computation using SPSS 25

3.8.2. Validity of the Study

Validity, often called construct validity, refers to the extent to which a measure adequately represents the underlying construct that it is supposed to measure (Bhattacherjee, 2012). Validity refers to how well an instrument measures what it's intended to assess and how well a scale accurately represents the study's constructs. The model for this study was chosen after conducting a thorough examination of related literatures in the context of the research's objective which attempts to examine the driving factors for mobile money adoption.

It was carried out on the basis of a widely accepted conceptual framework that clearly demonstrates the theoretical construct which are valid to assess the relationship between mobile money service adoption (dependent variable) and factors affecting the adoption of the service (independent variables).

According to (Masinge, 2010) cited (Zikmund & Babin, 2010), a pre-testing study allows a researcher to see whether the respondents had any difficulty understanding the questionnaire. Before moving forward with the data collection process, 45 questionnaires were distributed to respondents who were selected based on convenience, as a pilot (Pre-test) to make sure that the items used were valid. The respondents were asked to comment on the instrument's length, format, general understanding of the words used, and scale wording. After getting respondent's feedback and comments, then the survey questionnaire was distributed to the intended respondents.

The constructs used in the study were measured using a variety of items. Principal factor analysis was performed to validate that all the items were measuring the same underlying construct or factor that was employed in the study. According to (Bernard, 2006), a factor analysis is based on the straightforward yet compelling assumption that if two items are associated, they must share an underlying variable. It is a collection of methods for identifying and interpreting such underlying variables. The choice between the type of factor analysis to conduct relies on the goal of the analysis. (Tabachnick, 2007) posits that if the research is driven by empirical or theoretical predictions, then principal factors analysis is best.

Hypotheses developed for this study were based on the assumption that there must be a theoretical foundation and expectations that explain the link between the observed variable and the latent variable. (Bernard, 2006) posits that the relationship between the variables must be based on past evidence and theory and the researcher must specify the relationship between the observed variables and the latent variable.

According to (Bordens, 2008), to determine the dependent variables constituting a common factor, factor loadings are computed. Each factor loading is the correlation between a measure and the underlying factor. The factor loadings computed initially are often difficult to interpret because they are somewhat ambiguous. Therefore, factor rotation is used to make the factors distinct by maximizing high correlations and minimizing low correlations (Tabachnick, 2007).

Factor loadings range from -1 to 1. Factor loading score of 0.70 and above are considered as very high but they can be accepted from +0.3 (Lawrence Manion, 2007). Many researchers use a factor loading 0.50 as the cutoff, and look at loadings of 0.30 to 0.49 as worth considering. Some researchers insist that a variable should load at least 0.60 before accepting it as an unambiguous component of a factor and look at variables that load between 0.30 and 0.59 as worth considering (Bordens, 2008).

The result of principal factor analysis in the table 2 shows that the items used in the study have a factor loading above 0.5, which many researchers regarded as a cutoff point. Five items, on the other hand, have a factor loading of 0.331 to 0.460, and are worth considering, put heads together with (Bordens, 2008). Therefore, we can conclude that the items used in this study ensured a good construct validity.

Table 2: Summary of Principal Factor Analysis, factor loading for each items used to measure the constructs

Constructs Used	Items	Factor Loadings
Perceived Usefulness (PU)	PU 1	0.513
	PU 2	0.331
	PU 3	0.343
	PU 4	0.558
Perceived Ease of Use (PEOU)	PEOU 1	0.728
	PEOU 2	0.699
	PEOU 3	0.563
	PEOU 4	0.645
	PEOU 5	0.641
	PEOU 6	0.514
	PEOU 7	0.427
Perceived Risk (PR)	PR 1	0.711
	PR 2	0.786
	PR 3	0.719
	PR 4	0.703
	PR 5	0.413
	PR 6	0.535
	PR 7	0.460
	PR 8	0.511
Perceived Cost (PC)	PC 1	0.568
	PC 2	0.910
	PC 3	0.343

Perceived Trust (PT)	PT 1	0.700
	PT 2	0.836
	PT 3	0.731
	PT 4	0.555
Social Influence (SI)	SI 1	0.782
	SI 2	0.689
	SI 3	0.698
	SI 4	0.723
Adoption (BI)	BI 1	0.707
	BI 2	0.752
	BI 3	0.912
	BI 4	0.795
	BI 5	0.854

Source: Own computation using SPSS 25

3.9. Ethical Considerations

Ethical considerations require respondents not be pressured into participating in research. This means that potential volunteers must be actually informed about the processes and risks involved before agreeing to participate in research. Furthermore, it also requires a researcher not to put participants in circumstances where they might be physically or psychologically harmed as a result of their participation. The researcher assured the participant that their responses will be treated confidentially and anonymously. As a result, during the data collection process, the researcher informed the respondents about the purpose of collecting the data from them, specifically that it will only be used for academic purposes.

Chapter Four -
Data Analysis and Interpretation

4.1. Introduction

This chapter discusses the analysis, presentation and interpretation of data collected from sampled subscribers of tele birr MMS. It includes demographic information to show respondent's profile. Descriptive analysis was conducted on the demographic and mobile money service usage data. Inferential analysis which include correlation and multiple regression were conducted to test the relationship between variables and hypothesis testing. SPSS 25 software was used to conduct the analysis. were 330 questionnaires distributed in total to respondents who were chosen based on convenience. A total of 317 questionnaires were returned, accounting for 96.06% of the total questionnaires distributed. Out of the total questionnaires returned, 9 were not included in the analysis due to incomplete or faulty data entry.

4.2. Demographic Profile of the Respondents

The demographic features for this study includes gender, age category, educational background and occupation status which details the profiles of the respondents.

Table 3: Demographic Characteristics

Variable	**Classification**	**Frequency**	**Percentage**
Gender	Male	167	54.2%
	Female	141	45.8%
	Total	**308**	**100**
Age Category	18-27	43	14.0%
	28-37	189	61.4%
	38-47	61	19.8%
	48-57	13	4.2%
	57+	2	0.6%

	Total	**308**	**100**
Educational Status	No formal Education	0	0%
	Primary Education	1	0.3%
	Secondary Education	59	19.2%
	University/Collage level	248	80.5%
	Total	**308**	**100**
Occupation	Student	0	0%
	Government employee	215	69.8%
	Non-Government Employee	93	30.2%
	Unemployed	0	0%
	Retired	0	0%
	Total	**308**	**100**

Source: own computation using SPSS 25

4.2.1. Gender

As can be seen on the above table, there were 167 (54.2%) male and 141 (45.8%) females among the 308 people who responded to the questionnaire. This indicates that men made up the majority of the responders.

4.2.2. Age Category of the respondents

Likewise, the above table shows that, majority of respondents were aged between 28 to 37 accounting for 189 (61.4%). Second largest number of respondents were aged between 38 to 47 constituting 61 (19.8%). Respondents whose age ranged between 18 to 27 were 43 (14%) followed by age ranged between 48-57 were 13 or 4.2%, third and fourth largest numbers of respondents respectively. Respondents whose age is above 57 were only 2 or 0.6%.

4.2.3. Respondents Educational Status

In terms of the respondents' educational backgrounds, 248 or 80.5% of the respondents were University/College graduates, while 59 or 19.2% of the respondents were on secondary education level. Only 1 or 0.3% respondent was in primary education level. This implies that majority of the respondents (80.5%) are educated and appears to indicate that they fully understand the questions and obtained responses are reliable.

4.2.4. Occupation of the respondents

The above table indicates that, 215 (69.8%) of respondents are government employees while 93 (30.2%) of respondents are non- government employees. Lastly, none of the respondents were student, unemployed or retired.

4.3. Analysis of Mobile Money Usage

Respondents selected for this study were tele birr mobile money service subscribers. They were asked the type of transaction or service they use with their tele birr mobile money wallet. Categories of mobile money service usage includes Deposit Money, Send Money, receive payment, withdraw money, buy airtime/package, pay bills/Utilities, pay for merchant/buy goods.

Table 4: Mobile Money Service Usage

Variable	Classifications	Frequency	Percentage
Deposit Money	No	181	58.8%
	Yes	127	41.2%
	Total	**308**	**100**

Send Money	No	45	14.6%
	Yes	263	85.4%
	Total	**308**	**100**
Receive payment	No	98	31.8%
	Yes	210	68.2%
	Total	**308**	**100**
Withdraw Money	No	172	55.8%
	Yes	136	44.2%
	Total	**308**	**100**
Buy airtime/package	No	140	45.5%
	Yes	168	54.5%
	Total	**308**	**100**
Pay bills/utilities	No	152	49.4%
	Yes	156	50.6%
	Total	**308**	**100**
Pay for merchant/Buy Goods	No	204	66.2%
	Yes	104	33.8%
	Total	**308**	**100**

Source: Own computation using SPSS 25

4.3.1. Interpretation on Mobile Money Service Usage

Based on the above table, sending money was a transaction with highest number of respondents constituting 210 or 85.4% implying that 85.4% respondents use their mobile money wallet to send or transfer money. 210 or 68.2% of the respondents use their mobile money wallet to receive payments, a transaction with second highest number of transaction and buying air time/package is the third with 168 or 54.5% of respondents. 156 or 50.6% of respondents use their mobile money wallet to pay their bills/ utilities, 136 or 44.2% for withdrawing money, 127 or 41.2% for money deposit, paying for merchant/ buy goods constitutes 104 or 33.8% of respondents. Sending

money, receiving payments and buying air time/package have high numbers of respondents while paying bills/utilities, withdrawing money, money deposit and paying merchant/buy goods have low numbers of respondents.

4.4. Analysis of Mobile Money Service Adoption

According to (Zikmund & Babin, 2003), a correlation coefficient is a statistical measure of covariation, or association between two variables. A correlation analysis is used to see whether there is a relationship between two variables or if there is a covariance between the two variables in the study (Howell, 2010).

The objective was to describe factors that influence mobile money service adoption and conduct statistical analysis to see whether there is a significant relationship between the constructs.

Pearson correlation analysis was employed to determine whether there is a significant association/correlation between the dependent and independent variables as well as among independent variables. Correlation analysis was also used to check if multi collinearity occur on our data set.

According to (Howell, 2010), The correlation coefficient is a number between -1 and 1, and the closer it is to one of these two extreme values, the stronger the relationship between the two variables. (Bhattacherjee, 2012) posits, there is no relationship between the variables if the correlation coefficient is between ±00 and ±0.20. When the coefficients range from ±0.21 to ±0.40, the relationship between the variables is weak; when the coefficients range from ±0.41 to ±0.60, the relationship between the variables is moderately strong. If the correlation coefficient ranges from ±0.61 to ±0.80, there is a strong relationship between variables, and if the correlation coefficient ranges from ± 0.81 to ± 1.00, then the variables have a very strong relationship. The correlation coefficient results for this study are shown in the table below.

Table 5: Pearson Correlation

Correlations								
		BI	PU	PEOU	PR	PC	PT	SI
Adoption (BI)	Pearson Correlation	1						
	Sig. (2-tailed)							
	N	308						
Perceived-Usefulness (PU)	Pearson Correlation	.589**	1					
	Sig. (2-tailed)	.000						
	N	308	308					
Perceived Ease of use PEOU	Pearson Correlation	.510**	.597**	1				
	Sig. (2-tailed)	.000	.000					
	N	308	308	308				
Perceived-risk (PR)	Pearson Correlation	-.190**	-.228**	-.170**	1			
	Sig. (2-tailed)	.001	.000	.003				
	N	308	308	308	308			
Perceived-cost (PC)	Pearson Correlation	-.180**	-.243**	-.092	.443**	1		
	Sig. (2-tailed)	.002	.000	.109	.000			
	N	308	308	308	308	308		
Perceived-trust (PT)	Pearson Correlation	.582**	.517**	.510**	-.169**	-.162**	1	
	Sig. (2-tailed)	.000	.000	.000	.003	.004		
	N	308	308	308	308	308	308	
Social-influence (SI)	Pearson Correlation	.507**	.436**	.443**	-.139*	-.014	.557**	1
	Sig. (2-tailed)	.000	.000	.000	.014	.801	.000	
	N	308	308	308	308	308	308	308
Correlation is significant at the 0.01 level_(2-tailed)								
Correlation is significant at the 0.05 level_(2-tailed)								

As can be seen in the above table, the independent variables correlation coefficient ranged between r -0.014 to r 0.597. Perceived -Usefulness (PU) and perceived ease of use (PEOU) has a strong association with correlation coefficient r 0.597 and significance value p 0.000, which is the highest correlation compared to the other variables. Perceived -Usefulness (PU) also has a significant correlation with Perceived -trust (PT) and social -influence (SI) with correlation coefficient r 0.517 and r 0.436 at significance value p 0.000 respectively.

The next highest correlation between independent variable was observed between Perceived-trust (PT) and social-influence (SI) with correlation coefficient 0.557 and significance value p 0.000 implying that a strong association between the two variables. Perceived-risk (PR) has a significant relationship with Perceived-cost (PC) with correlation coefficient r 0.443 and significance value p 0.000 indicating that the variables have a strong relationship or are highly correlated.

The correlation between independent and dependent variable was also observed. The observed correlation ranged between r -0.180 and r 0.589. Perceived-Usefulness (PU) and Perceived-trust (PT) has strong and significantly positive relationship with adoption of mobile money service (BI) with correlation coefficient r 0.589 and r 0.582 at significance level p 0.000 respectively. Correlation between each independent variable and the dependent variable is discussed below based on their significance level or significance value.

4.4.1. Perceived-Usefulness (PU)

Based on the above table, it can be realized that Perceived-Usefulness (PU) has a significant relationship with the adoption of mobile money service at a correlation coefficient of r 0.589 and significance value of p 0.000. The correlation coefficient value shows presence of a strong positive association or relationship between the two variables supporting the hypothesis that stated Perceived-Usefulness (PU) have a positive effect on the adoption of mobile money service. The result implies that items in the construct of Perceived-Usefulness (PU), such as using tele birr mobile money service to accomplish tasks more quickly, convenience and accessibility of tele birr mobile money service for customers, benefits tele birr mobile money service provides and overall advantages of the service made customers to realize that tele birr mobile money service is useful for their activities and actually utilize the system.

4.4.2. Perceived Ease of Use (PEOU)

The Pearson correlation values of the above table shows that perceived ease of use (PEOU)has also a significant relationship with adoption of mobile money service with correlation coefficient r 0.510 and significance value p 0.000. As a result, the correlation value of 0.510 indicates that the variables have a strong positive relationship. This means that the ease and simplicity of mobile money system programs, as well as the ease with which PIN, USSD, and Login numbers can be remembered, simplicity in navigation of menu as well as payment, money transfer and balance viewing are all factors that positively influence mobile money service adoption.

4.4.3. Perceived-risk (PR)

As can be seen from the above table, Perceived-risk (PR) showed a significant negative relationship with adoption of mobile money service at correlation coefficient r -0.190 and significance value of p 0.001 which supports the hypothesis that stated adoption of mobile money service has negatively and significantly affected by perceived-risk.

4.4.4. Perceived-cost (PC)

The correlation coefficient on the above table shows that Perceived-cost (PC) also has a significant negative association or relationship with adoption of mobile money service showing correlation coefficient -0.180 and significance value of 0.002 supporting the hypothesis that stated Perceived-cost on mobile money service has a significant negative effect on the adoption of mobile money service. The result implies that, equipment and subscription cost as well as transaction fee to use the service, are the factors that negatively affect the adoption of mobile money service.

4.4.5. Perceived-trust (PT)

As can be observed from table_4, there is a significant correlation between Perceived-trust (PT) and mobile money service adoption as clearly reflected by correlation coefficient r 0.582 and significance value of p 0.000. Thus, the result shows that there is strong positive association or relationship between the two variables in which Perceived-trust positively affects the adoption of tele birr mobile money service. Trustworthiness of the service provider and the service itself, trustworthiness of wireless infrastructure and using the service which is interoperable with other institutions are the factors that positively affect the adoption of tele birr mobile money service. Hence, the correlation result supports the hypothesis that states Perceived-trust on mobile money service has a positive effect on the adoption of mobile money service.

4.4.6. Social-influence (SI)

As can be observed form the above table, social-influence (SI) has a strong and significant positive association or relationship with mobile money service adoption with correlation coefficient r 0.507 and significance level of p 0.000. Hence, the correlation coefficient result implies that social-influence has significant positive relationship with mobile money service adoption.

4.5. Summary of Pearson Correlation Analysis

According to the findings of the correlation analysis, the majority of variables has an effect or influence on mobile financial services adoption. The result revealed that, Perceived -Usefulness, perceived -ease of use, Perceived -trust and social -influence variables has significant positive relationship with mobile money service adoption which affects tele birr mobile money service adoption positively. In contrast, Perceived -risk and Perceived -cost variables have significant negative relationships with mobile money service adoption which affects the service adoption negatively.

4.6. Regression Analysis

This section will discuss the unstandardized and standardized regression weights for the constructs and results are discussed and interpreted along with the regression model. According to (Harrison, 2018), in order for a Multiple Regression analysis to be reliable and valid, several assumptions must be checked on the data prior to running the analysis. The purpose of testing the multiple regression assumption is to see how independent variables (predictor variables) affect the dependent variable (Outcome variable). Six multiple regression assumptions have been tested and the results are discussed below.

Assumption one states that the relationship between independent variables and dependent variable is linear. Each independent variables (Predictors) have been tested using scatterplot for linearity with the dependent variable. Scatterplots showed all the independent variables (Predictors) have a straight-line relationship with the predicted dependent variable. The result showed that this assumption has been met.

Assumption two states that there is no Multi collinearity in our data. According to (Tabachnick, 2007), in multi collinearity statistics, if the tolerance value is < 0.1 and the VIF is > 10, then it indicates the presence of multi collinearity in the data. As can be seen in table__, the tolerance value of ranges from 0.544 to 0.631, which is above 0.1 and the VIF ranges from 1.248 to 1.837, which the score is well below 10. Therefore, analysis of collinearity statistics shows the assumption has been met.

Assumption three is the values of residuals are independent. Durbin-Watson statistics was used to test the third assumption that states the values of the residuals are independent (Uncorrelated). This statistic can range from 0 to 4, values below 1 and above 3 are cause for concern and we want this value to be close to 2 (Harrison, 2018). As can be seen from table_5, the obtained value was close to 2 (Durbin-Watson = 1.889), indicating that the third assumption had been met.

Assumption four states that the variance of the residuals is constant (Test of homoscedasticity). According to (Harrison, 2018), this is a test of the homoscedasticity assumption, which states that the variation in the residuals (or amount of error in the model) is similar at each point in the model. In other words, the spread of the residuals should be fairly constant across the linear model or at each point of predictor variable. In our case, there were no obvious signs of funneling in our plot of standardized residuals vs. standardized predicted values, indicating that the homoscedasticity assumption was met.

Assumption five states that the values of the residuals are normally distributed. This assumption can be tested by looking at the P-P plot for the model. The closer the dots lie to the diagonal line, the closer to normal the residuals are distributed (Harrison, 2018). The result of this test, as shown in the chart below, our data points lies very closer to the diagonal line. Thus, the P-P plot for the model indicated that the residuals' normality assumption was met.

Assumption six states that there are no influential cases biasing your model. This assumption can be tested by looking at the Cook's Distance values in our data file which contains each participant's Cook's Distance statistic. According to (Harrison, 2018), Any values over 1 are likely to be significant outliers, which may place undue influence on the model, and should therefore be removed. In our case, Cook's Distance values were all less than one, implying that individual cases did not show any significant impact on the model. Therefore, based on our cook's distance value, the sixth assumption has been met.

Table 6: Model

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.697[a]	.486	.476	2.436	1.889
a. Predictors: (Constant),Social -influence (SI), Perceived -cost (PC), Perceived Ease of Use (PEOU), Perceived -risk (PR), Perceived -trust (PT), Perceived -Usefulness (PU)					
b. Dependent Variable: Adoption (BI)					

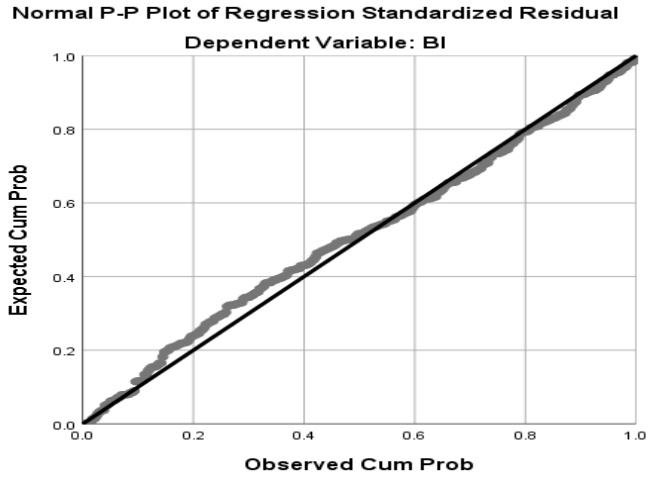
Source: Own Computation using SPSS

Table 7: Anova Test

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1688.793	6	281.465	47.445	.000[b]
	Residual	1785.659	301	5.932		
	Total	3474.451	307			
a. Dependent Variable: Adoption (BI)						
b. Predictors: (Constant),Social -influence (SI), Perceived -cost (PC), Perceived -Ease of Use (PEOU), Perceived -risk (PR), Perceived -trust (PT), Perceived -Usefulness (PU)						

Source: Own Computation using SPSS

Figure 7: P-P Plot of regression standardized residual



Source: Own Computation using SPSS

Table 8: Predictors of Mobile Money Service Adoption

Coefficients[a]								
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	5.262	1.400		3.758	.000		
	Perceived -Usefulness (PU)	.363	.070	.291	5.199	.000	.544	1.837
	Perceived -Ease of Use (PEOU)	.094	.044	.117	2.134	.034	.571	1.751
	Perceived -risk (PR)	-.009	.030	-.013	-.287	.774	.779	1.284
	Perceived -cost (PC)	-.058	.057	-.048	-1.003	.317	.757	1.321
	Perceived -trust (PT)	.306	.064	.262	4.759	.000	.564	1.773
	Social -influence (SI)	.200	.058	.180	3.462	.001	.631	1.584
a. Dependent Variable: BI								

Source: Own Computation using SPSS

According to (Bordens, 2008), the correlation between the predicted and observed values is known as Multiple R and R-square is the square of multiple R which is a measure of how much variability in the dependent variable is explained by the predictor variables. (Tabachnick, 2007) recommends to look at the significance of a F test of ANOVA to see if the R squared is significant in which F must have a probability of less than 0.05. Table _5 shows that the F test of ANOVA in this study was F=47.445, P=0.000.

(Tabachnick, 2007) also recommends to use the adjusted R -square instead of using the unadjusted R -square, as a measure of variance accounted for. As can be seen in the model summary table 5, the adjusted R square value for the regression equation was 0.476 or 47.6% indicating the six variables used in this study account for 47.6% percent of the variation in adoption of mobile money service.

According to the results of the regression analysis, adoption of mobile money service was predicted by Perceived –Usefulness: ß=0.291, p=0.000, perceived ease of use: ß=0.117, P=0.034, Perceived –trust: ß=0.262, p=0.000 and social –influence: ß=0.180, p=0.001. On the other hand, Perceived-risk (ß=-0.013, p=0.774) and Perceived –cost: ß=-0.048, p=0.317 had no significant effect on the adoption of mobile money services having a significance value greater than 0.05.

4.7. Hypothesis Testing based on Regression Analysis

The level of significance of the independent variable to the dependent variable cannot be determined using correlation analysis alone. To test the hypothesis for both independent and dependent variables, as well as to observe their significance levels, multiple regression analysis was employed. The significance of each independent variable in influencing mobile money service adoption as well as the analysis of the results for each independent variable is discussed in this section. The regression model in the above table indicate how much of the variance in mobile money service adoption is explained by the variables considered.

4.7.1. Hypothesis 1: Perceived-Usefulness (PU) and Perceived Ease of Use (PEOU)

Hypothesis one was tested to see if mobile money service adoption could be affected by perceived -usefulness and perceived -ease of use. As can be seen in the above table, Perceived -Usefulness has a coefficient of ß=0.291 and p-value of 0.000. This implies that, when all other variables are held constant, Perceived -Usefulness is found to have a statistically significant positive influence on mobile money service adoption. Therefore, the researcher supports the hypothesis that states Perceived-Usefulness have a positive effect on the adoption of mobile money service. Hence, this result is consistent by previous research findings by (Davis, 1986) and (Lule, 2008).

Perceived ease of use on the other hand has a coefficient of ß=0.117 and p-value of 0.034. This result implies that, keeping all other variables constant, perceived ease of use is found to have statistically significant positive association or relationship with mobile money service adoption. Therefore, the researcher supports the hypothesis that states the adoption of mobile money services has positively influenced by perceived ease of use.

4.7.2. Hypothesis 2: Social-influence

Hypothesis two was tested to see if social-influence has an effect on the adoption of mobile money service. The regression analysis indicated that social-influence has a coefficient ß=0.180 and p-value of 0.001 which implies that holding other variables constants, social-influence has a positive and statistically significant influence on mobile money service adoption. Therefore, the researcher supports the hypothesis that states, the adoption of mobile money services is positively affected by perceived social influence.

4.7.3. Hypothesis 3: Perceived-trust

Hypothesis three was tested to observe if perceived trust has an effect on mobile money service adoption. The regression analysis table revealed that Perceived-trust has a coefficient ß=0.262 with p-value of 0.000. The analysis indicates that, by keeping other variables constant, Perceived-trust found to have positive and statistically significant relationship with the adoption of mobile money service. Therefore, the researcher failed to reject the hypothesis that states Perceived-trust on mobile money service has a positive effect on the adoption of mobile money service.

4.7.4. Hypothesis 4: Perceived-risk

Hypothesis four was tested to see the effect of Perceived-risk on the adoption of mobile money service. The result in the above table revealed that Perceived-risk has a coefficient of ß= -0.013 and p-value of 0.774 which implies Perceived-risk has negative but statistically no significant relationship with the adoption of mobile money service because level of significance p-value is greater than 0.05. Thus, the researcher rejects the hypothesis because the regression result showed insignificant relationship between the two constructs.

4.7.5. Hypothesis 5: Perceived-cost

Hypothesis five was tested to see if Perceived-cost affect the adoption of mobile money service. The regression analysis on Perceived-cost revealed that Perceived-cost has a coefficient ß= -0.048 and p-value of 0.317 which implies that Perceived-cost has negative statistically no significant relationship with the adoption of mobile money service. There is no significant relationship between the two variables because, the p-value is greater than 0.05. Therefore, the researcher rejects the hypothesis that states Perceived-cost on mobile money service has a significant negative effect on the adoption of mobile money service.

4.8. Summary of results for Hypothesis Test

Table 9: Hypothesis test result

Hypothesis		Beta (ß)	Sig.	Remark
H1	Perceived -Usefulness have a positive effect on the adoption of mobile money service.	0.291	0.000	Supported
	Perceived ease of use have a positive effect on the adoption of mobile money service.	0.117	0.034	Supported
H2	Social -influence has a positive effect on the adoption of mobile money service.	0.180	0.001	Supported
H3	Perceived -trust on mobile money service has a positive effect on the adoption of mobile money service.	0.262	0.000	Supported
H4	Perceived -risk has a significant negative effect on the adoption of mobile money service	-0.013	0.774	Not Supported
H5	Perceived -cost on mobile money service has a significant negative effect on the adoption of mobile money service.	-0.048	0.317	Not Supported

The regression analysis result revealed that adoption of mobile money service is predicted by Perceived-Usefulness (ß=0.291, p=0.000), perceived ease of use (ß=0.177, p=0.034), Perceived-trust (ß=0.261, p=0.000) and Social-influence (ß=0.180, p=0.001). Perceived-risk (ß= -0.013, p=0.774) and Perceived-cost (ß=-0.048, p=0.317) had no statistically significant effect on the adoption of mobile money service.

Chapter Five -
Conclusion and Recommendation

5.1. Introduction

This chapter contains conclusion of the findings, as well as recommendations, for future research and the study's limitations. The recommendations made in this research work could be used for future research, policy development, and mobile money service adjustments.

5.2. Conclusion

The main objective of this research was to look into the leading factors that affect the adoption of mobile money services. The research model was developed based on the review of related literatures and was used to investigate the factors that affect the adoption of mobile money services. To develop the research model of customer's adoption of mobile money service, Technology acceptance model_(TAM), Unified Theory of Acceptance and Use of Technology_(UTAUT) and Theory of Planned Behavior (TPB) were used. The research model was established from six independent variables and one dependent variable. Data was collected from 308 respondents who have subscribed to use tele birr mobile money service and who are based in Addis Ababa, Ethiopia. Statistical analysis was conducted using SPSS version 25 software.

According to the findings, perceived -usefulness, perceived ease of use, perceived trust, and social -influence all had a significant impact on the adoption of mobile money services. By a value of ß= -0.013 and p= 0.774, Perceived-risk had a negative effect on adoption of mobile money service. Perceived-cost also had a negative effect on the adoption of mobile money service with ß=-0.048, p=0.317.

As Perceived-risk and Perceived-cost had negative effect with the adoption of mobile money service, the service provider must address these issues in order to increase the rate of adoption of mobile money service.

Perceived-Usefulness had a positive and significant influence on mobile money adoption. This puts forward that customers will accept and utilize mobile money service, if the service enable them to accomplish their tasks easily and more quickly. Perceived ease of use was found to have significant and positive effect on mobile money service adoption. This implies that, minimum amount of mental effort to use the service, easiness in remembering PIN, USSD, login numbers, easiness in understanding service menu and navigations, easiness of the system to make payment, money transfer and balance checking, and also easiness for customers to carry out their tasks have found to be positive influence for customers to adopt mobile money service.

The correlation coefficient of Perceived-Usefulness and perceived ease of use also showed that both were strongly correlated with the adoption of mobile money service with correlation coefficient r= 0.598 and r= 0.510 and both had significance value p=0.000. The correlation square (r^2) for both results showed that the constructs explained about 35.76% and 26.01% of the change in the variance of the adoption of mobile money service respectively. In other words, the variability in the adoption of mobile money service is directly predictable from the variability in Perceived-Usefulness and perceived ease of use by 35.76% and 26.01% respectively.

Social-influence was also found to have a significant and positive influence on the adoption of mobile money service with value ß=0.180, p=0.001. This result implies that; social-influence is significant in predicting the adoption of mobile money service. The correlation coefficient of social-influence was r=0.507, p=0.000, implying that social-influence was strongly correlated with adoption of mobile money service. The correlation square (r^2) of this result showed that social-influence explained about 25.7% of the change in the variability of adoption of mobile money service.

The adoption of mobile money services was found to be influenced by perceived trust in a significant and positive way with a value of ß=0.261, p=0.000. This result revealed that Perceived-trust is significant in predicting the adoption of mobile money service at p=0.000. This implies that trustworthiness of the service provider and the service itself, trustworthiness of wireless infrastructure and using the service which is interoperable with other institutions are the factors that were found to be positive influence for customers to adopt mobile money service. The correlation coefficient of Perceived-trust was r=0.582 and p= 0.000. This result implies that Perceived-trust is strongly correlated with adoption of mobile money service. The r^2 of this result showed that Perceived-trust explained about 33.87% of the change in the variability of adoption of mobile money service.

Perceived-risk was insignificant in influencing the adoption of mobile money service with a value of ß= -0.013, p=0.774. Since the significance value is not <0.05, Perceived-risk was insignificant in predicting the adoption of mobile money service. The correlation coefficient of Perceived-risk was significant at a value of r= -0.190, p= 0.001 and also indicating a negative association between perceived -risk and mobile money service adoption. The service's low performance due to network problems, incorrect payment processes, transaction errors, the time it takes to fix the error and issues related with sharing personal information on the system were the factors that negatively influence customers to adopt mobile money service. Even though the correlation coefficient was significant, the r^2 value in this result is r^2= (0.0361) or 3.61%, which implies that Perceived-risk explained only about 3.61% of the change in the variability of mobile money service adoption, as a result Perceived-risk was found to be insignificant in influencing the adoption of mobile money service.

Perceived -cost was also found to be insignificant predictor affecting the adoption of mobile money service with value of ß=-0.048, p=0.317. Since the significance value is not < 0.05, Perceived -cost was insignificant in predicting the adoption of mobile money service. Higher transaction cost and costs related with access, equipment and subscription are the factors that led to negative influence for customers to adopt

mobile money service. The correlation coefficient of Perceived -cost was r=-0.180, p=0.002, suggesting a negative association between Perceived -cost and mobile money service adoption. The correlation coefficient showed a significant relationship, but the r^2 value indicated 0.0324 (3.24%), which means Perceived-cost explained only 3.24% of the change in variability of mobile money service adoption. As a result, Perceived-cost was found to be insignificant in influencing the adoption of mobile money service.

5.3. Recommendations

Even though the subscription and usage of mobile money service in Ethiopia is increasing, it is still in its infant level compared to other countries and is a new concept to customers. In order to improve the adoption of mobile money service, the researcher recommends the following points.

This research employed six variables to predict factors that affect the adoption of mobile money service. Among these six variables, Perceived-Usefulness was the most significant predictor for the adoption of mobile money service. Therefore, its recommended that the service provider should use different means of communication, such as call centers, multi channels like social media, short messages and other advertising mechanisms to inform its customers the benefits and overall advantages that mobile money service provides.

As indicated in the findings of this study, Perceived-trust was also the most significant factor to affect the adoption of mobile money service. Hence, in order to achieve a higher rate of adoption, the researcher recommends that the service provider to keep its trustworthiness in its infrastructure, in providing the service as well as its interoperability with other institutions. Perceived ease of use and social-influence were also factors that have a significant effect on the adoption of mobile money service. Therefore, in order to achieve higher rate of adoption, its recommended that the service provider to keep on making the system easier to understand and navigate, which makes it easier for customers to use the system and carry out their tasks. The researcher also recommends; The service provider should improve its product designed with customers in mind, or with a customer-centric

approach and the service provider to develop a marketing strategy that connects its customers with their shared values so that they believe they are part of the society.

Perceived-risk and Perceived-cost were the two factors that were found to have an insignificant effect and a negative relationship with the adoption of mobile money service. This insignificant effect is may be due to higher transaction cost customers face and transaction errors that may occur while using the service. Therefore, its recommended by the researcher that the service provider should work to upgrade the performance of the system and minimize transaction errors, applying higher security for protecting customer's privacy and consider a reasonable transaction cost to achieve higher level adoption of the service.

5.4. Limitations and Recommendations for Future Study

The study's first limitation is that it was only conducted in Addis Ababa, Ethiopia, which appears to mean the research results may only apply to a small segment of the country's population. Because the demographics of people in various areas differ. Therefore, the researcher suggests that more research to be done that encompasses individuals from diverse geographic locations who make up a significant portion of the country's population.

The researcher believed the second limitation of the study was the sampling approach. The study applied a convenience sampling technique in which respondents were chosen based on the researcher's convenience for the purpose of data collecting timely and economically. But, due to self-selection bias, this sampling approach may not be representative of the general population. Nevertheless, the researcher tried to minimize the effect of the chosen sampling approach by collecting the primary data from different areas of Addis Ababa city.

The researcher only considers six variables in the study out of numbers of factors that could influence adoption of mobile money service, so it is recommended for future studies to include more variables in their studies.

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Appendices

Appendix 1: Questionnaire

ADDIS ABABA UNIVERSITY: SCHOOL OF COMMERCE

Dear sir/madam;

This research questionnaire is presented for users of tele birr mobile money service to be filled for research project titled **Factors affecting the adoption of mobile money services: the case of telebirr** as a requirement for partial fulfilment for the award of a Master in Marketing Management.

Please be assured that the information you provide is for academic purpose only and that your identity will be treated as highly confidential. Your support and participation in this study will be highly appreciated.

Fanuel Tsegaye

Address: Phone- 0930105190

Email-fanuelt32@gmail.com

General Instruction: Please indicate your answer by ticking (√) in the boxes that specify your choice from the options written below.

Part I

Demographic Data

No.	Demographic data	Subcategory	Mark (√) where applicable
1.	Gender	Male	
		Female	
2.	Age category	18-27	
		28-37	
		38-47	
		48-57	
		57+	
3.	Educational Status	No formal Education	
		Primary Education	
		Secondary Education	
		University/Collage level	
4.	Occupation	Student	
		Government employee	
		Non-Government Employee	
		Unemployed	
		Retired	

Part II

Mobile Money services use

5.	What type of transaction/service do you conduct/use with tele birr mobile money wallet? Please tick (√) where appropriate.	Deposit Money	
		Send Money	
		Receive payment	
		Withdraw Money	
		Buy airtime/package	
		Pay bills/utilities	
		Pay for merchant/Buy Goods	

PART III

Five point Likert scale Questionnaire

Please respond to the following question by putting (√) mark in the box of your choice indicating your level of agreement from 1=Strongly disagree, 2= disagree, 3= Neither Agree nor Disagree (Neutral), 4= Agree, 5= Strongly Agree

		Rating Scale				
		Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1.Perceived-Usefulness (PU)						
6.	I think that using Tele birr mobile money service would enable me to accomplish my tasks more quickly.					
7.	I think that using Tele birr mobile money service would make it easier for me to carry out my tasks.					
8.	I think that mobile money service is beneficial.					
9.	Overall, I think that using Tele birr mobile money service is advantageous.					
2.Perceived ease of use (PEOU)						
10.	I believe it would be simple to learn how to use mobile money services.					
11.	Using mobile money service is not complex.					
12.	I think that using mobile money does not necessarily require a significant amount of mental effort.					

13.	Remembering Mobile money service PIN, USSD, Login numbers, etc. are easy.					
14.	Mobile money service menu is very easy to navigate and understand.					
15	Mobile money service is easy to make payments, money transfer and check balance.					
	3.Perceived-risk					
16	Because of network problems, mobile money services may not perform well.					
17	It's possible that mobile money won't work properly and will process payments erroneously.					
18	I am afraid that using Mobile money leads me to erroneous losses.					
19	I'm concerned that if a transaction problem occurs, I won't be able to seek compensation from the service provider.					
20	Fixing payment errors may lead to a waste of time.					
21	learn how to use mobile money services would take lots of time.					
22	Tele birr Mobile money service is safe and secure.					
23	I'm not sure I'd feel safe sharing personal information through mobile money systems.					
24	For the reason other people may be able to access my account, I'm worried about using mobile money service.					
	4.Perceived-cost					
25	I think the equipment cost is expensive to use mobile money service.					
26	I think the access and subscription fee is costly to use Tele birr mobile money service.					
27	I think the transaction fee is expensive to use Tele birr mobile money service.					
	5.Perceived-trust					
28	I believe the Tele birr mobile money service provider is trustworthy.					
29	I believe Tele birr mobile money service is trustworthy.					
30	I believe wireless infrastructure can be trusted.					

31	Even though the mobile money service provider works with other banks and institutions, I have no fear to use the service.					
	6.Social-influence					
32	People who matter to me believe that I should use the Tele birr Mobile money service.					
33	People who have an impact on my behavior believe that I should use the Mobile money service.					
	7. Adoption (BI)					
34	I would use Tele birr mobile money services for my banking needs.					
35	Using Tele birr mobile money services for handling my banking transactions is something I would do.					
41	I will regularly continue using Tele birr mobile money service in the future.					
42	I will increase the number of transaction conducted by Tele birr mobile money.					
43	I would recommend others to use Tele birr mobile money service.					

Thank you for taking the time to fill out this survey and assisting me with my research.

Kind Regards

Appendix 1: SPSS Results

1. Gender of respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	167	54.2	54.2	54.2
	Female	141	45.8	45.8	100.0
	Total	308	100.0	100.0	

2. Education level of respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary Education	1	.3	.3	.3
	Secondary Education	59	19.2	19.2	19.5
	University	248	80.5	80.5	100.0
	Total	308	100.0	100.0	

3. Occupation of the respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Government Employee	215	69.8	69.8	69.8
	Non-government employee	93	30.2	30.2	100.0
	Total	308	100.0	100.0	

4. Reliability Statistics

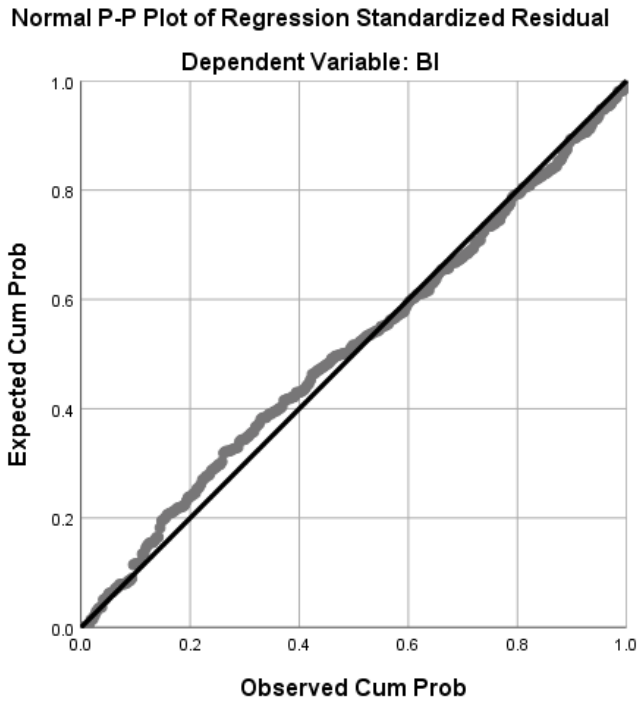
Cronbach's Alpha	N of Items
.844	35

5. Correlations								
		PU	PEOU	PR	PC	PT	SI	BI
PU	Pearson Correlation	1						
	Sig. (2-tailed)							
	N	308						
PEOU	Pearson Correlation	.597**	1					
	Sig. (2-tailed)	.000						
	N	308	308					
PR	Pearson Correlation	-.228**	-.170**	1				
	Sig. (2-tailed)	.000	.003					
	N	308	308	308				
PC	Pearson Correlation	-.243**	-.092	.443**	1			
	Sig. (2-tailed)	.000	.109	.000				
	N	308	308	308	308			
PT	Pearson Correlation	.517**	.510**	-.169**	-.162**	1		
	Sig. (2-tailed)	.000	.000	.003	.004			
	N	308	308	308	308	308		
SI	Pearson Correlation	.436**	.443**	-.139*	-.014	.557**	1	
	Sig. (2-tailed)	.000	.000	.014	.801	.000		
	N	308	308	308	308	308	308	
BI	Pearson Correlation	.589**	.510**	-.190**	-.180**	.582**	.507**	1
	Sig. (2-tailed)	.000	.000	.001	.002	.000	.000	
	N	308	308	308	308	308	308	308
Correlation is significant at the 0.01 level (2-tailed).								
Correlation is significant at the 0.05 level (2-tailed).								

6. Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.697[a]	.486	.476	2.436
a. Predictors: (Constant), SI, PC, PEOU, PR, PT, PU				
b. Dependent Variable: BI				

7. ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1688.793	6	281.465	47.445	.000[b]
	Residual	1785.659	301	5.932		
	Total	3474.451	307			
a. Dependent Variable: BI						
b. Predictors: (Constant), SI, PC, PEOU, PR, PT, PU						

8. Regression Coefficients with Collinearity Statistics								
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	5.262	1.400		3.758	.000		
	PU	.363	.070	.291	5.199	.000	.544	1.837
	PEOU	.094	.044	.117	2.134	.034	.571	1.751
	PR	-.009	.030	-.013	-.287	.774	.779	1.284
	PC	-.058	.057	-.048	-1.003	.317	.757	1.321
	PT	.306	.064	.262	4.759	.000	.564	1.773
	SI	.200	.058	.180	3.462	.001	.631	1.584
a. Dependent Variable: BI								



9. KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.900
Bartlett's Test of Sphericity	Approx. Chi-Square	6041.169
	df	595
	Sig.	.000

10. Scree Plot