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FACTORS AFFECTING ADOPTION OF MOBILE MONEY SERVICES: IN CASE OF TELEBIRR

MUHAMMED MUHABA

A THESIS PAPER SUBMITTED TO THE COLLEGE OF BUSINESS AND ECONOMICS SCHOOL OF COMMERCE IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR A MASTER OF ARTS DEGREE IN MARKETING MANAGEMENT

ADVISOR: HAILEMARIAM KEBEDE (PH.D.)

Addis Ababa, Ethiopia

June, 2023

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Declaration

I, the undersigned, herewith declare that the work contained in this thesis, titled "Factors Affecting the Adoption of Mobile Money Services in the Case of Telebirr," is my own original work and has not previously been submitted in whole or in part at any university for a degree.

Name: Muhammed Muhaba Signature: _____Date: _____

The Signature Page
Addis Ababa University
School of Commerce

This is a certification that the thesis written by Muhammed Muhaba, entitled "Factors affecting the adoption of mobile money services in the case of Telebirr," which was submitted in partial fulfilment of the requirements for the degree of Master of Arts in Marketing Management, complies with university policies and meets recognized standards for originality and quality.

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Advisor: Hailemariam Kebede (PhD).	_____	_____

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Chair of Department or Graduate Program Coordinator

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Abbreviation and Acronyms

ANOVA:	Analysis of Variance
CIA:	Central Intelligence Agency
C-TAM-TPB:	Combined Technology Acceptance Model and Theory of Planned Behavior
DFS:	Digital Financial Service
EE:	Effort Expectancy
FC:	Facilitating Conditions
FinTech:	Financial Technology
GSMA:	Global System for Mobile Communication Association
IDT:	Innovation Diffusion Theory
MFIs:	Micro Finance Institutions
MM:	Mobile Money
MNOs:	Mobile Network Operators
MPCU:	Model of PC Utilization
NBE:	National Bank of Ethiopia
PE:	Performance Expectancy
PK:	Perceived Knowledge
PR:	Perceived Risk
PV:	Price Value
SCT:	Social Cognition Theory
SI:	Social Influence
TAM:	Technology Acceptance Model
UTAUT:	Unified Theory of Acceptance and Use of Technology

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Abstract

With a particular focus on Addis Ababa, the purpose of this study was to investigate factors that affect the adoption of mobile money services in the case of telebirr. To do this, it adopted the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) and rationally substituted perceived risk and perceived knowledge for hedonic motivation and habit in order to quantitatively examine the relationship between the independent and dependent variable. Both descriptive and explanatory research design were used to examine the factors that influence the adoption of mobile money services. 385 residents of Addis Ababa were selected by means of convenience sampling technique, and primary data were collected via survey questionnaires. Both descriptive and inferential statistics have been employed on the gathered data in the quantitative analysis stage using Statistical Software for Social Sciences (SPSS) version 26. The analysis's results showed that the adoption of mobile money was positively correlated with all of the study variables. The study arrived at the conclusion that all seven of the factors used in the study were capable of predicting 47.8% of the variance in customers' adoption of telebirr mobile money services. Customers therefore use telebirr services because of their expected benefits, the status that they intend to achieve using the service, its simplicity, and its typically reasonable prices. The study recommends that ethiotelecom and future mobile money providers integrate new features and services into their mobile money systems, capitalize on the power of social influence, simplify the use of the services, and review the current service fees. Further, government bodies should promote the introduction and expansion of mobile money system by providing infrastructure and establishing the necessary legal frameworks.

***Keywords**: Adoption, mobile money, telebirr, performance expectancy, effort expectancy, facilitating conditions, price value, perceived risk, social influence, perceived knowledge.*

CHAPTER ONE
INTRODUCTION

1.1. Background of the Study

The emergence of mobile telecommunications allows developing nations to overcome one of the major constraints to economic progress (Mothobiy and Grzybowski, 2015). The integration of telecommunications and banking services has opened prospects for the growth of mobile commerce, particularly mobile money transfer services, which give clients time independence, convenience, and promptness, plus cost savings (Maitai & Omwenga, 2016). According to various research, while electronic payment systems are more widely used in developed economies where all necessary infrastructure is in place, they are also spreading to developing economies including African nations (Demirgüc-Kunt Klapper, Singer, and Oudheusden, 2015).

According to the World Bank's 2016 Global Findex data, there is a 13% increase in account penetration in developing economies, as well as technological innovations, particularly mobile money, that are contributing to Sub-Saharan Africa's rapid expansion of access to financial services. The survey also demonstrates that there are several potentials to enhance financial inclusion, particularly among women and the poor (The World Bank Group, 2016).

Millions of people throughout the world have had their lives revolutionized by mobile money. There are already 1.35 billion registered mobile money accounts that process $1 trillion in transactions per year. There were 173 active mobile money services in Africa, with 621 million registered accounts and. East Africa, in particular, has 59 live services with 296 million registered accounts. The African mobile money tale is said to have begun in Kenya in 2007, when Safaricom debuted their M-PESA peer-to-peer money transfer system (Awanis et al., 2022).

Ethiopia has the lowest degree of financial inclusion in Africa, yet it has an alarmingly high rate of mobile penetration. M-Birr, the country's first mobile money service, was launched in 2012 by five MFIs and went live in 2013. Lion International Bank and Somali Micro Finance Institution introduced Hello Cash in 2015, and the Commercial Bank of Ethiopia launched CBE-Birr in 2017. Dashen Bank began operating Amole in July 2018. Deposits, withdrawals, transfers, and payments are all available through these services (Alemu, et al., 2021).

The telecoms sector reform has had a significant impact on enhancing the reach and quality of digital payment services in Ethiopia. Until recently, Ethiopia's digital financial services regulatory system was headed by banks, with only banks and MFIs having exclusive rights to collect deposits, be licensed as payment service providers, and administer network of agents. To solve this, Ethiopia ratified the electronic transaction proclamation No. 1205/2020, as well as the payment instrument issuers directive, which authorizes MNOs and FinTech businesses to act as payment instrument issuers (NBE, 2021). In response to the regulatory framework, Ethiotelecom introduced telebirr, a new mobile money service. Ethiopia's mobile money businesses have been impeded by lack of interoperability, limited product use cases, regulatory restrictions, immature merchant payment systems, and poor outreach according to Ethiopian investment firm, Cepheus Growth Capital Partners. Nevertheless, telecom companies have had greater success in mobile money than traditional banks, owing to their broader access to consumers' daily lives (restofworld.org, 2022). Identifying and understanding factors that influence telebirr service adoption will be crucial given the possibility for increased acceptance and expansion of the service in the future.

1.2. Statement of problem

The advent of mobile telecommunications enables developing nations to resolve the major constraints to economic growth. Mobile phones can give economic benefits to consumers as well as businesses in developing nations. First, mobile phones can improve market efficiency by boosting information access and lowering search costs. Second, improved communication can improve supply management and raise business productivity. Third, mobile phones make available services that would otherwise be unavailable to underprivileged peoples, such as mobile financial services (Mothobiy & Grzybowski, 2015). The major causes of low-income countries like Ethiopia's lack of access to financial services are inadequate infrastructure, inaccessibility, and financial illiteracy. Mobile phones have the potential to transform this situation by allowing consumers to view account balances and make money transactions over mobile networks via financial services like Mobile banking or M-money (Mothobiy & Grzybowski, 2015).

In Ethiopia, digital payment and transfer systems, which potentially help lower-income and less-literate portions of the population, are still in their infancy. According to Alemu et al.'s (2021) study

on limiting constraints on the expansion of digital payment systems in Ethiopia, supply-side issues, particularly competitive problems, are widespread. However, institutional weaknesses are the primary cause of insufficient competition and, as a result, limited financial inclusion. The two main institutional problems are the regulatory and supervisory agencies' lack of capacity and the central government's unwillingness to enable and support competition. Another finding on opportunity and challenges of e-payment in Ethiopia banking industry, reveals that language barriers, poor network connectivity, lack understanding, frequent power outage, Lack of inter-bank link, Resistance to technological changes among customers, Cyber security issues and etc. as a major constraint to the proper operation of e-banking in Ethiopia (Worku, 2010).

The short story of mobile money in Ethiopia tells us the existence of huge potential that would be promising if ultimately optimized. However, the adoption of mobile money in Ethiopia has been so slow that even early entrants have struggled. M-Birr, E-Birr, and Hello Cash were the first to offer mobile money services in Ethiopia, although their success was limited. The delayed adoption rate could be attributable to regulatory obstacles such as quick approval of service launch requests and a lack of interoperability (Worku, 2010). The NBE (National Bank of Ethiopia) issued a directive in 2020 permitting private-sector investors to enter the mobile money market. Following the directive's issuing, the recently developed mobile money platform telebirr acquired more than 20 million subscribers as of the 2021/22 annual report, with 7 million of them being active users. Furthermore, the service produced 5.5 million ETB in income, which is predicted to increase by three-fold in the coming year (Annual report, 2021/22).

Moreover, there was variability of finding among previous studies conducted on mobile money or mobile banking adoption in different countries. According to one study conducted in Ethiopia, the factors influencing consumers' intentions to use mobile banking were performance expectancy, perceived risk, perceived cost, effort expectancy, and trust (Haile, 2015). On the contrary, a Tanzanian study found that perceived usefulness, perceived cost, and social influence all had a substantial impact on people's adoption of mobile financial services. Insignificant were perceived ease of use, perceived risk, and perceived trust (Lema, 2017). Thus, this study is intended to test whether this variability among constructs exists in a particular study area selected.

Previous research studies on digital payment services emphasized on bank-led digital payment platforms such as mobile banking, online banking, and card banking. None of them was conducted in a context of mobile money services provided by mobile network operator (MNO) (Samuel, 2019;

Tesfaye, 2019; Bultum, 2014; Bonge, 2020). Thus, the purpose of this study is to fill research gaps in relation to subject area of mobile money in Ethiopia, with a focus on a specific view of a Telebirr service rather than a digital payment service of a formal financial institution in Addis Ababa. Furthermore, unlike many previous studies, this study adopts the most recent model known as the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2), which the researcher believes is more comprehensive and lowers the chance of variables omission.

1.3. Research Questions

The primary research question that this study set out to address was: What factors influence the adoption of Telebirr mobile money services?

The specific research questions were:

- Does performance expectancy affect adoption of Telebirr mobile money services?
- Does effort expectancy affect the adoption of Telebirr mobile money services?
- Does social influence affect adoption of Telebirr mobile money services?
- Does facilitating conditions affect adoption of Telebirr mobile money services?
- Does price value affect adoption of Telebirr mobile money services?
- Does perceived risk affect the adoption of Telebirr mobile money services?
- Does perceived knowledge affect the adoption of Telebirr mobile money services?

1.4. Research Objectives

1.4.1. General objectives

To determine what factors influence adoption of Telebirr mobile money services.

1.4.2. Specific objectives

The specific objectives of this study are to:

- Determine the effect of performance expectancy on adoption of Telebirr mobile money services
- Evaluate the effect of effort expectancy on the adoption of Telebirr mobile money services

- Evaluate the effect of social influence on adoption of Telebirr mobile money services
- Examine the effect of facilitating conditions on the adoption of Telebirr mobile money services
- Asses the effect of price value on adoption of Telebirr mobile money services
- Analyze the effect of Perceived risk on the adoption of Telebirr mobile money services
- Examine the effect of Perceived knowledge on the adoption of Telebirr mobile money services

1.5. Significance of the Study

One of significance of the study is to help companies who are planning to join digital financial service know factors that contributes to customers' acceptance of mobile money service and enhance the usage of service. The companies will be committed to realize financial inclusion of unreached society by providing fast, convenient and reliable service based upon significance of factors recognized by the study. Customers can also understand the importance of using digital payment over the traditional cash and know the actual drives to choose over payment options.

Further, the study helps government and respective policy makers in their role of facilitating the expansion of mobile payment platforms to improve efficiency and broaden financial inclusion, especially for the informal sector and women. Lastly, future researchers can use the suggested area of study in the paper to find places that hadn't been examined before and it might serve as a reference for future research on related topics.

1.6. Scope of the study

This study is limited to assessment of factors identified to affect the adoption of Telebirr mobile money service. These are performance expectancy, effort expectancy, social influence, facilitating condition, price value, perceived risk and perceived knowledge. The study is geographically restricted to Addis Ababa since it would be uncontrollable to consider Telebirr subscriber all over the country within a given cost, time and other limits to the researcher. Furthermore, the constructs considered in this study are adopted from extended Unified Theory of Acceptance and Use of Technology (UTAUT2) model with a slight adjustment. From the literature the researcher recognized the need to extend the original UTAUT-2 model with two other factors; Perceived risk

and Perceived knowledge to replace Hedonic motivation and Habit. The rational is that users' concerns for security and privacy and level of awareness in the early stages of the adoption of new technologies outweigh the enjoyment and habit factors, which could be more prevalent in mature market (Palau-Saumell et al. 2019).

1.7. Limitation of the study

There are some inevitable limitations that this paper will come through due to the fact that some of them are beyond the control of the researcher's capacity. Firstly, since the constructs used in this study were taken from the extended Unified Theory of Use and Acceptance of Technology (UTUAT2), a more predictive variables from other models might result in different findings. Second, the study might not geographically represent telebirr users of the entire Ethiopia since the findings from Addis Ababa city might be different from that of the rural and other part of the country. The sampling technique chosen is a convenience non-probability sampling in which each member of the population does not have an equal probabilistic chance of being chosen for the sample. Furthermore, the study is based on cross-sectional data collected at a certain time. As people's behavior changes over time, longitudinal studies on similar topics may yield different results.

1.8. Definition of terms

In this study, the following terms are held the operational meanings as stated below:

Mobile Money: Refers to a digital financial service offered via a SIM-card-based mobile phone system (NBE, 2021). For the purpose of this study, mobile money goes beyond payments made via mobile and includes all digital financial services such as microloans, remittance services, online savings accounts, etc.

Telebirr: A mobile money solution that allows customers to deposit, receive and transfer money among other services via cell phones in areas where mobile network is available.

Customer: Refers to an individual or business that purchases another company's goods or services. The term "customer(s)" is used in this study to refer to individuals who are either potential Telebirr subscribers who plan to use the services in the future or those who are already using them and plan to continue using or subscribe to more features of the services.

Adoption: The process by which people become users of a product. In this study adoption of mobile money refers to the process by which peoples become user of telebirr services.

Price value (PV): Venkatesh, et al. (2012) defines price value as consumers' cognitive tradeoff between the perceived benefits of the applications and the monetary cost for using them. This study considers price value as one predictor of adoption mobile money service.

1.9. Organization of the study

There are five main chapters in this research paper. The study's background, problem statement, research questions, aims, significance, scope, and limitations are all covered in the first chapter. The second chapter discusses the conceptual framework employed in the study as well as a review of related literature that includes both theoretical and empirical studies. The third chapter focuses entirely on the methodologies used during the course of the study, including a description of the research area, the research design and approach, the population and sample, the types and sources of data, the methods of data collecting, and ethical considerations. The fourth chapter looks at the presentation, analysis, and interpretation of the data collected. The final chapter presents the study's key findings, conclusion, and recommendations for further action.

CHAPTER TWO
REVIEW OF RELATED LIERATURE

2.1. Introduction

This chapter discusses theoretical concepts and empirical findings relevant with mobile money services and technology acceptance theories obtained from different sources including books, journal articles, research thesis and internet sites. The study's conceptual framework was developed with the help of review of relevant theoretical and empirical literature.

2.2. Theoretical review

2.2.1. Mobile money definition

Mobile money is defined differently within the communication sector since it has so many overlapping uses. According to Nab Owusu (2017), mobile money is a type of electronic payment method. Mobile money refers to a variety of financial services that can be accessed via a mobile phone. The majority of mobile money services nowadays offer airtime purchases, bill payments, and remittances. Using an app that is installed on the phone, mobile money is a digital wallet service that functions when the phone is connected to the internet. It is a form of technology that lets users receive, store, and spend money.

The Global System for Mobile Communications Association defines a service as a mobile money service if it (1) enables money transfers and making and receiving payments using a mobile phone; (2) is accessible to those who are unbanked, or lack access to a formal account at a financial institution; and (3) provides a network of physical transactional points, such as agents outside of bank branches and ATMs, that make the service available to the unbanked.

2.2.2. The concept of mobile banking and mobile money

Mobile money is a pay-as-you-go digital medium of exchange and store of value that uses mobile money accounts and is facilitated by a network of mobile money agents, according to the IMF's Financial Access Survey. It is an independent financial service that a mobile network operator or another organization that cooperates with mobile network providers provides to its clients. A basic mobile phone is the only requirement for using mobile money services; a bank account is not required.

In contrast, mobile banking refers to the use of a mobile device application to access and perform banking services such as cheque deposits, balance inquiries, and payment transfers. Mobile banking, as opposed to mobile money, refers to services that use mobile phones as merely another method of accessing traditional financial services (International Monetary Fund – IMF, 2023).

2.2.4. Mobile money development: Global and African trend

In 2011, there were five billion adults worldwide; 2.5 billion of them had bank accounts, while the remaining 2.5 billion did not. By that time, the majority of global economies had started including measures meant to lessen financial exclusion into their development plans. Thus, while the number of adults without bank accounts decreased by 20% to only two billion between 2011 and 2014, (Coulibaly, 2020). Today, mobile money services are accessible in 61% of developing nations worldwide. Mobile money services have become widely available in many parts of Africa, Asia, Latin America, Europe, and the Middle East over the past five years (Scharwatt, Katakam, and Frydrych, 2014). More than 1.35 billion mobile money accounts were registered in 2021, a tenfold increase from 134 million in 2012. In spite of original predictions that it would decline, year over year growth in new registrations persists (Awanis, et al., 2022).

In Africa, mobile financial services have become a significant force for financial inclusion and a revolutionary way of reaching the unbanked population with financial services. Because of its transformative impact and capacity to reach a wide population, it presents a tremendous chance to breach the dominance of banks (Lema, 2017). Additionally, according to the Global Findex database maintained by the World Bank, three-quarters of the world's poor do not hold accounts with conventional financial institutions, not just because they are poor but also because doing so would require them to travel and complete additional paperwork. When compared to other continents like Asia, Africa faces an even greater difficulty of financial exclusion. While many adults in Africa use informal methods to borrow money and save money, it is believed that less than a quarter of adults in Africa have accounts with official financial institutions. In contrast, 25 percent of poor households in Asia have access to financial services (Lema, 2017).

In Sub-Saharan Africa, mobile phones have grown in popularity as a tool for extending financial services beyond the reach of bank branches in an effort to reach a larger segment of the unbanked population and give them with access to financial services. Kenya and the Philippines were the

world's first countries to provide mobile banking services. M-PESA was introduced by telecom companies in 2007 (Maitai and Omwenga, 2016). The way the financial services sector does business has been revolutionized by mobile money services, which have given businesses access to new business models, customer-friendly distribution channels and opportunity to develop customized offerings. M-PESA, Airtel Money, Orange Money, and Yu Cash are the current four mobile money services. With more than 12.6 million customers registered as of 2010, M-PESA is the most popular service. The telecommunications sector in Kenya has developed to become the one with the quickest growth, most intense competition, and most dynamic (Maitai and Omwenga, 2016).

2.2.5. Mobile money service in Ethiopia

Ethiopia still achieves poorly, despite numerous comparable nations in sub-Saharan Africa experiencing a major rise in financial inclusion, largely fueled by digital financial services. Even digital payment and transfer services, which could help lower-income and less-educated populations, are hardly used (NBE, 2017). Only 12% of Ethiopian adults use electronic payment methods like ATMs, mobile money, or other methods of cashless delivery to send or receive money (Alemu, et al., 2021).

But the significance of financial inclusion has only lately been fully acknowledged by the Ethiopian government. The National Council for Financial Inclusion was founded in 2017 along with the first National Financial Inclusion Strategy. Among financial services, only a very small number of people use those that use digital channels. As an illustration, just 15.8% of adults in 2019–20 have a mobile money account and 98.7% of all adult consumers who paid for utilities in 2017 did so in cash. When it comes to using cash instead of financial institutions to pay utility bills, get paychecks, and receive government payments, Ethiopia ranks far above the norm for sub-Saharan Africa (Alemu, et al., 2021).

Since its debut in 2015, M-Birr has amassed a network of more than 1.2 million users who make deposits at more than 7,000 M-Birr sites across the country. The system enables customers to pay for groceries, petrol and a variety of other daily services using their cell phones. It's not the only player, though. A similar mobile money service is provided by the Commercial Bank of Ethiopia (CBE Birr), and Hello Cash is another alternative (Euractiv.com, 2018).

2.2.6. Technology adoption models and theories

The adoption of technology has been studied using a variety of models and theories. These theories and models have been expanded for use in researching the acceptance of mobile banking and financial services. They are the Unified Theory of Use and Acceptance of Technology (UTAUT) (Venkatesh & Davis, 2000), the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) (Venkatesh, Thong, J. and Xu, 2012), the Technology Acceptance Model (TAM) (Davis, 1989), Roger's (1992) diffusion of innovations, and the TAM (Davis, 1989).

2.2.6.1. Technology Acceptance Model (TAM)

The Technology Acceptance Model, which was based on the Theory of Reasoned Action, was created by Davis and Fred D. in 1989. It was created with the goal to understand what factors lead individuals to adopt or reject information technology. According to Davis (1989), the perceived usefulness and ease of use of an information technology are the most important individual beliefs. Perceived utility (PU) "degree to which a person believes that using a particular system would enhance his or her job performance" (Al-Tarawneh 2019).

The Theory of Reasoned Action's expectancy-value model serves as the foundation for the definition of perceived utility. The expression "the extent to which a person believes that using a particular system would be free of effort" refers to perceived ease of use (PEOU). Therefore, individual behavioral intention (BI) and actual behavior are caused by these two behavioral beliefs. He discovered that PU was the best indicator of a person's propensity to use information technology. One of the most popular and accepted models in the field of technology acceptance is TAM (Al-Tarawneh 2019).

2.2.6.2. Diffusion of Innovation Theory (DOI)

Rogers created the Diffusion of Innovation Theory (DOI) in 1962 in response to the need to comprehend how society accepts or rejects innovation. This is regarded as one of the most significant theories in sociology and has been used to several breakthroughs and inventions across a variety of disciplines to assess how well they would spread throughout the surrounding social system (Rogers, 2003). According to Rogers (2003), diffusion is "the process by which an innovation is communicated to members of the social system through specific channels over time" (Al-Tarawneh 2019).

According to the DOI, five perceived characteristics of an innovation can be used to predict whether it will be adopted. Rogers (2003) asserts that these characteristics can account for 49–87% of the variation in forecasting the rate of adoption of innovations. The relative advantage, or scale of perceived traits of an innovation that replaces another, is the first of these characteristics. The second is compatibility, which refers to how well an innovation is regarded to match the demands, values, and experiences of potential adopters. The third factor is complexity, or how hard it is deemed to understand and use an idea. The fourth perceived attribute is trialability, which refers to how an innovation can be tested out before being fully adopted. The final factor is observability, or how obvious the innovation's results are. These five characteristics are linked together while staying distinctively unique from one another (Al-Tarawneh 2019).

2.2.6.3. The Unified Theory of Acceptance and Use of Technology (UTAUT)

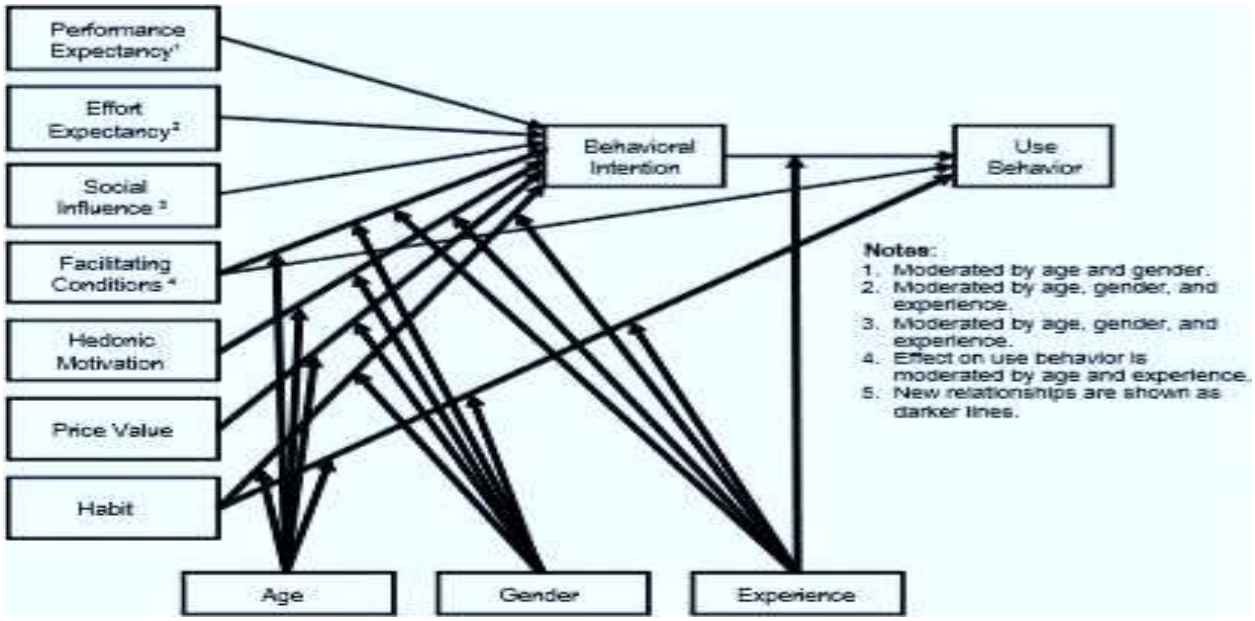
Although numerous researchers from around the world have created various models to assess how individuals accept and use technology on an individual basis, Venkatesh, Morris, Davis, G., and Davis, F. (2003) constructed a more comprehensive model that attempted to incorporate the key ideas of earlier models. The UTAUT was viewed as a trial to harmonize the terms of variables used in various models and theories of technology acceptance in addition to incorporating the concepts of earlier models.

The first UTAUT model was created using four theoretical constructs that describe factors that influence user behavior, such as the intention to accept and use a particular technology, and which are crucial as alternatives to technology acceptance. Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions are the four main constructs. In addition to including the four moderating variables—gender, age, experience, and voluntariness of use—in their model, Venkatesh et al. (2003) explain each of these variables (Venkatesh, et al., 2003; Dwivedi, et al., 2017). Following its validation, the UTAUT model was employed in a variety of empirical studies, which verified its validity. The first three constructs are direct predictors of usage, intention, and behavior, whereas the fourth is a direct driver of use behavior according to Venkatesh, et al. (2003).

2.2.6.4. Extended Unified Theory of Acceptance and Use of Technology (UTAUT2)

About nine years after the first UTAUT model was created, Venkatesh and his colleagues thought about updating the older model by include three new constructs: hedonic motivation, price value, and habit, as shown below. The UTAUT model was developed based on organizational settings, even though it explained around 70% of the variance in behavioral intention to use technology and around 50% of the variance in technology use. The more recent UTAUT2 model, however, placed more emphasis on the customer perspective than it did on personnel at an organization (Venkatesh et al., 2012). The Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) model was used in this study because the researcher believes it to be more predictive, comprehensive and less likely to leave out important factors. The extended UTAUT model's diagrammatical representation is shown as follows.

Figure 2. 1 Extended Unified Theory of Acceptance and Use of Technology Model



Source: Venkatesh, et al. (2012)

2.3. Empirical review

This sub-section discusses the empirical review of earlier studies and proposed hypothesis along with validation of how could empirical findings support formulation of set hypotheses.

Performance expectancy (PE)

According to Venkatesh et al. (2003, P. 447), performance expectancy is the degree to which a person believes that using the system would enable him or her to achieve gains or excellence in job performance. The performance expectancy constructs from the previous versions of the TAM, the Motivational Model, the Model of PC Utilization, the IDT, and the SCT are perceived usefulness, extrinsic motivation, job-fit, relative advantage, and outcome expectancies, respectively. Performance expectancy is the best predictor of intention and it is significant at all points of measurement in both voluntary and compulsory settings (Venkatesh, et al., 2003).

Researchers have shown that behavioral intention and performance expectancy have a positive association. According to a study on m-learning intentions by Chao (2019) that was conducted in Taiwan, students' satisfaction with m-learning and their behavioral intentions to use it are increased when they find it engaging and believe it will improve their learning performance and effectiveness. Performance expectancy had a significant impact on the adoption of mobile financial services, according to studies by Lema (2017) on the adoption of mobile financial services in the unbanked population in Tanzania and Haile (2015) on the adoption of mobile banking in commercial banks of Ethiopia. Consequently, the following hypotheses are put forth.

H1*: Performance expectancy (PE) has a significant influence on the adoption of telebirr mobile money service.*

Effort expectancy (EE)

The degree of simplicity associated with using the system is referred to as effort expectancy (Venkatesh et al., 2003, p. 450). The TAM's perceived ease of use variable and complexity variables from the diffusion of innovation theory, are comparable factors. Effort expectancy and performance expectancy are the most significant variables for examining technology usage behavior and behavioral intentions in the context of technology adoption. The effort expectancy construct is relevant in both voluntary and mandatory usage scenarios, although it is only

meaningful for the first time period and loses significance over time when usage is prolonged and sustained (Venkatesh, et al., 2003).

In other words, the effort required to use a technology lower as people become more accustomed to it. Previous studies had suggested that a new technology's adoption and utilization were influenced by the effort required to understand and operate it. A system is more likely to be adopted and used if it is simple to use. According to Haile's (2015) research on mobile banking acceptance in Ethiopia, individuals' intentions to use mobile banking are significantly influenced by their efforts. An information system's effort expectations or convenience of use in this case, mobile banking, surely have a big impact on users' intentions to use mobile banking (Haile, 2015). According to another study in Nigeria, perceived ease of use influences South East bank customers' acceptance of mobile money (Ezeh and Nwankwo, 2017). Consequently, it was hypothesized that:

***H2**: Effort expectancy (EE) has a significant influence on the adoption of telebirr mobile money service.*

Social influence (SI)

According to Venkatesh et al. (2003), social influence is the extent to which a person believes that significant others think he or she should utilize the new system. It is the idea that a person's behavior is influenced by how peers or family members feel about using technology. Using innovative technology like mobile banking could make the user feel fashionable and competent (Oliveira, Faria, Thomas, and Popovic, 2014). The concept is represented by subjective norm from TRA and TAM, social factor from a model of PC utilizations, and image from IDT. Despite having a variety of names, each construct involves the stated or implied idea that the person's behavior is influenced by their perception of how others will perceive them as a result of using technology.

Contrarily, according to lead users' opinions, Huang and Kao (2015) concluded that among other variables influencing the adoption of phablets, the notion of social influence had the least weight. This conclusion is supported by Olivera, et al.'s (2014) finding that social influence (SI) had little effect on behavioral intention (BI). The justification is that m-Banking is a very sensitive and individualized service. The requirement to maintain transaction confidentiality and the security of financial data takes precedence over the desire to impress others or show off (Olivera, et el., 2014).

Venkatesh, et al. (2003) assert, however, that the social influence on technology acceptance decisions is complicated and influenced by a variety of contextual factors. The normative pressure will reduce over time as additional experience offers a more useful basis for decision-making. Reliance on others' opinions in technology acceptance is substantial in mandated settings, particularly in the early phases of experience. Since mobile money services in Ethiopia are still in their infancy and consumers may lack expertise, it is anticipated that they would be influenced by peers. Thus, the researcher hypothesizes:

H3*: Social influence (SI) has a significant influence on the adoption of telebirr mobile money service.*

Facilitating condition (FC)

The degree to which a person thinks that an administrative and technological framework is in place to support use of the system is referred to as a facilitative condition (Venkatesh et al., 2003). This description encompasses ideas represented by three distinct constructs: perceived behavioral control (TPB/DTPB, C-TAM-TPB), enabling conditions (MPCU), and compatibility (IDT). According to Huang and Kao (2015), the most important factor from the facilitating conditions dimension is compatibility, which has a direct impact on both the enabling condition and perceived behavioral control.

Facilitating conditions are the second factor that influences intention to use and the last driver in terms of significance affecting usage, according to a Palau-Saumell, et al.'s, 2019 study on the adoption of mobile apps for restaurant search (MARSR) in Spain. It showed that facilitating conditions and their effects have a greater impact on usage than on intentions to use. This means that people's perceptions of the availability of assistance and resources for using specific technology are critical determinants in its acceptability (Palau-Saumell et al., 2019).

In their study on the acceptance of mobile banking conducted in Malaysia Facilitating conditions have also been proven to be crucial for the adoption of mobile banking, according to Ghairaibeh and Mohd-Arshad (2018). Customers seem to believe that their intention to use a service will grow if they feel they have sufficient knowledge of it, a suitable smartphone, and assistance from the bank to support them if they run into any problems. Samuel (2019) and Bonge (2020) have proven

from research done in the Ethiopian on intention to use e-payment system that, facilitating conditions are statistically significant factor that determine the intention to use e-payments among Ethiopian consumers. Based on those empirical findings it is hypothesized that:

H4: *Facilitating conditions (FC) have a significant influence on the adoption of Telebirr mobile money service.*

Price value (PV)

Venkatesh and his co-authors have added additional predictors to the second generation of the Unified theory of use and acceptance of technology (UTUAT2) that they believed were crucial in predicting behavioral intention to use a technology, such as hedonic motivation, price value, and habit. Price value is characterized as consumers' cognitive tradeoff between the monetary cost of utilizing the applications and the perceived advantages of those applications (Venkatesh et al., 2012). The price value is favorable when the advantages of employing a technology are thought to outweigh the financial cost.

Price value in the context of marketing includes both monetary expenses and nonmonetary costs. The value indicated as the price paid is what is meant by the financial costs. The non-monetary costs represent the time and effort spent (Huang and Kao, 2015). According to Huang and Kao's (2015) study on the adoption of phablets, the price, value, and quality of a phablet are key indications for determining whether a consumer chooses to buy one.

The research by Tobbin (2010) on the acceptance of mobile money transfer in Uganda based on TAM and IDT constructs further supports the idea that transactional costs affect behavior intention to use mobile money transfer services. Another study on the acceptance of mobile money in Nigeria, using data collected on 314 bank customers, confirmed that the construct synonymous with price value, perceived financial cost, was a significant predictor of mobile money acceptance (Ezeh and Nwankwo, 2017). Based on above discussion the below hypothesis was projected:

H5*: Price value (PV) has a significant influence on the adoption of telebirr mobile money service.*

Perceived risk (PR)

Kabir (2013) asserts that perceived risk can be viewed from a variety of viewpoints including those relating to financial risk, system risk, privacy risk, and physical security risk. The term "privacy risk" describes the possibility of financial loss brought on by fraud or a hacker interference with a mobile banking user's security (exposure of personal and financial information). The possibility for financial loss is what is meant by financial risk. System risk describes flaws or errors in the mobile banking system. Last but not least, physical security risk describes any susceptibility to assaults and threats against mobile banking users that could result in physical pain or injury and financial loss (Haile, 2015).

Consumers' desire to reduce risk outweighs their tendency to maximize benefit, and as a result, their behavior is heavily influenced by their subjective perception of risk. Accordingly, it has been discovered that lowering uncertainty has a positive effect on customers' desire to accept electronic transactional systems (Sanjeewa and Yatigammana, 2021). An empirical study on Sri Lanka users' intentions towards mobile money services reveals a significant negative association between risk and intention to use mobile money services. (Sanjeewa and Yatigammana, 2021).

According to research on the Indian e-payment system, customers' intentions to use electronic payments seem to be influenced by their perception of risk (Patel, Modi, and Kiri, 2019). Customers in India will accept and use electronic payment systems when they perceive less risk associated with them than with traditional payment systems. There is a negative correlation between perceived risk and intention to accept mobile money, according to a different study on Ethiopian mobile banking settings. The analysis of risk reveals that behavioral intention to use mobile banking will decrease as a result of perceived risk. In other words, behavioral intention to use mobile banking will diminishes as the risk of doing so rises (Haile, 2015). Thus, the following hypothesis was projected:

H6*: Perceived risk has a significant influence on the adoption of telebirr mobile money services*

Perceived knowledge (PK)

Researchers have suggested that consumers' knowledge or awareness of developing technologies affects their acceptance of them. The likelihood that bank clients will adopt the system may depend on their amount of knowledge about mobile money. Before adopting new items, consumers must

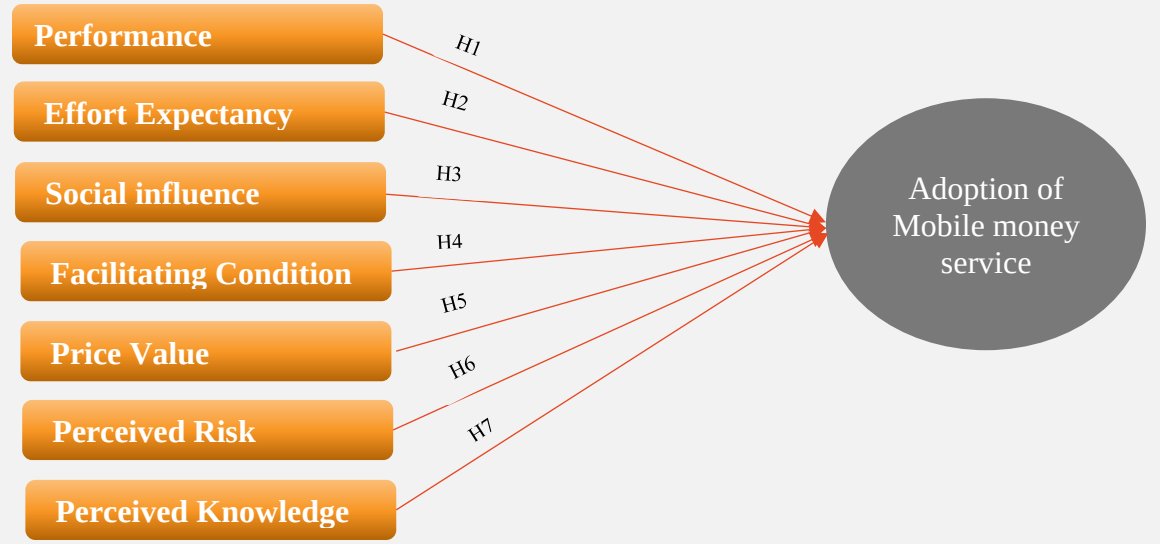
be aware of them and understand them, according to Howard and Moore (1982). In the South East of Nigeria, another study found that the amount of information was substantially associated to the tendency to accept mobile money. According to the study, the amount of information regarding mobile money has the capacity to anticipate and explain the desire of bank customers to use the system (Ezeh and Nwankwo, 2017). There is a moderately positive significant association between awareness and intention to use mobile money, according to results of an identical study conducted in Sri Lanka. Therefore, increased user knowledge will improve their intent to use mobile money services (Sanjeewa and Yatigammana, 2021). Following these arguments, the following hypotheses has been developed:

***H7**: Perceived knowledge has a significant influence on the adoption of telebirr mobile money services*

2.4. Conceptual framework

The relationship between variables or study constructs is depicted diagrammatically in a conceptual framework. The following factors have been proposed to have an impact on the adoption of telebirr services based on a theoretical and empirical literature analysis of previous studies in the area of technology acceptance and adoption of innovations. Hence, the conceptual framework adapted is shown as follow:

Figure 2. 2 Conceptual frameworks



A conceptual model adapted from Venkatesh, et al. (2012)

CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

This chapter describes the research approach, research design, population and sampling, source and types of data, data collection procedure, ethical considerations and data analysis tools to be employed throughout a piece of the study.

3.2. Description of the Study Area

This study was carried out using data gathered from Addis Ababa customers of Telebirr mobile money services. Addis Ababa, the capital of Ethiopia and the seat of African diplomacy, is one of the cities on the continent with the highest population growth, accounting for 30% of the country's urban population. Every ten years, its population has nearly doubled, reaching roughly five million people currently (CIA, 2022). Numerous thousands of individuals from all over the country travel there in quest of work opportunities and services due to its geographic position, political climate, and socioeconomic standing (UNHABITAT, 2008)

3.3. Research Approach

This research was done employing a quantitative research approach. The method often entails gathering data and turning it into numbers so that statistical calculations can be performed and conclusions can be made. It is used to assess people's attitudes, beliefs, actions, and other predetermined characteristics in order to extrapolate conclusions from a larger sample size. Furthermore, the researcher formulated seven hypotheses based on the adopted model to assess whether the constructs proposed in this study support the universal Unified Theory of Acceptance and Use of Technology model. The constructs considered and hypotheses formulated in this study are deductively taken from an existing model of UTAUT2.

In addition to critical predictor of the model, it is suggested by researchers like Chen, Y., and Chang, C. (2012) and Qasim, H., and Abu-Shanab, E. (2016) that the model should be modified to account for cultural behavioral variations. In this regard, the researcher suggests replacing the two elements of the UTUAT2 model, hedonic motivation and habit, with perceived risk and perceived knowledge. In the early phases of adopting new technologies, especially when dealing with financial transactions, users' concerns for security and privacy outweigh those for enjoyment

and habit, which are more common in a mature market (Palau-Saumell, 2019).

3.4. Research Design

The descriptive and explanatory research designs were both employed in this study. The descriptive statistics was used mainly to present respondents' demographic profiles and the perception of customers towards mobile money adoption based on Likert scale questionaries developed for constructs. In addition, explanatory design was used in an attempt to explain the logical relationships that could exist between variables. Explanatory studies aim to establish a relationship between variables and often quantify the influence of predictor factors on dependent variable (Carl McDaniel, 2010, p. 67). They examine whether value of one variable cause or influences value of the other. Hence, the researcher tries to critically investigates the relationship between independent variables: performance expectancy, effort expectancy, social influence, facilitating conditions, perceived risk and perceived knowledge, and the dependent variable adoption of telebirr mobile money service.

3.5. Target Population

The study's population of interest was those Addis Ababa residents who are thought to be potential and current telebirr service users. According to Central Intelligence Agency, in 2022 Addis Ababa's population is 5.228 million with about 40 percent of the population below the age of 15. From the total population of Addis Ababa city about 2.0912 million population represent below age of 15. Hence, the target population of this study were 3.1368 after deducting population under age of 15 who are not eligible for account ownership at a financial institution or with a mobile-money-service provider.

3.6. Sampling techniques

When conducting research, it's rarely possible to collect data from every person of the study target. Instead, the researcher needs to carefully select a sample whom he believes they are adequate representative of the total population. The two main categories of sampling techniques are probability sampling and non-probability sampling. Non-probability sampling is employed in this study because it is difficult to calculate the probability that each responder in the population will be chosen for the sample. Non-probability sampling technique is often used in individual research

projects and small-scale studies due to its relative time and financial advantages (Kothari, 2004).

Convenience sampling was chosen from non-probability sampling subcategories. Convenience sampling technique is often used when there are insufficient resources or time to select a sample, difficulty identifying individual cases, a large number of potential samples to pick from, and no variation in the population, which describes the conditions in this study (Saunders, Lewis, and Thornhill, 2012, p. 291).

3.7. Sampling procedure and sample size

As described earlier in the target population sub section the total population of Addis Ababa city who are eligible to own accounts at financial institutions and mobile money providers accounts for 3,136,800 having deducted the underaged group. Thus, 3,136,800 amount of the total population are considered to constitute the sampling frame since they are assumed to be a potential user of telebirr services. The researcher selected a sample based on Bill Godden's sampling formula because the large size of population of the study. When the sample size is infinite or the population is higher than 50,000, the sample will be determined as follows (Tekabe and Gadise, 2016). Further, the sample of this study were drawn from grand shops located at Ethiotelecom's various market segments (zones) in Addis Ababa. These segments are North, east, central, south, west and southwest Addis Ababa zones. One shop from each zone was selected and the questionnaire was evenly distributed to selected shops. $n = \frac{Z^2 * p * q}{e^2}$ Where: n = sample size

z=desired confidence level

p= estimated proportion of an attribute present in the population (50%)

q=1-p

e= desired level of precision

p= total population

$n = \frac{1.96^2 * 0.5 * 0.5}{0.05^2}$ ~385 Whereas; z= 1.96, p=0.5 and e= 0.05

New n $= \frac{n}{1+\frac{n-1}{p}}$ = **<u>385</u>**

3.8. Data Sources and Types

The study used a primary data. Fundamentally, survey questionnaires given to chosen samples are used to collect the primary data. This helps to get a specific and distinct response to a research question.

3.9. Data Collection Procedures

A survey questionnaire consisting of two part was designed. The first part enquiries about respondents' demographic profile and the second part which has 31 items is designed to produce responses regarding factors influencing adoption of telebirr services. The survey instruments used in this study was adapted from Venkatesh, et al. (2012) and P. Tiwari, S. Tiwari and Gupta (2021). Items for five constructs namely; performance expectancy, effort expectancy, social influence, facilitating conditions and adoption of mobile money was adapted from Venkatesh, et al. (2012). Item for the rest of two variables of perceived risk and perceived knowledge was taken from Tiwari, et al., (2021). When distributing the questionnaire, respondents were personally contacted and enough time was given so that they wouldn't feel rushed to respond honestly.

3.10. Data Analysis

In this research, quantitative methods of data analysis were used. In doing so, the Statistical Package for Social Sciences (SPSS) version 26 data analysis programme, which is widely used in social and business studies, was employed by the researcher. With the help of tables, figures, and other visual aids, the descriptive analysis was used to examine, describe, and present the demographic profiles of the respondents and the survey results produced. While inferential analytic tools like the Pearson's correlation coefficient and multiple regression were used to evaluate the relation between variables and the existence of an influence of independent variables on the study's dependent variable, respectively.

3.11. Validity and Reliability

3.11.1. Validity test

Validity in relation to questionnaires refers to the ability of questionnaire to measure what it intends to measure (Saunders, et al., 2009). The measurement items of the selected variables were adopted from the previously validated studies of Venkatesh, el. al, (2012) and subsequent studies conducted in a similar theme has also confirmed that measurement items of the UTUAT2 construct generates a valid prediction of peoples' technology acceptance behavior. Following this validation of the model universally, many of prior studies has proved its ability to accurately measure what it intends to measure witnessing content and construct validity. In addition, a pilot study on 20 respondents was conducted to ensure validity and reliability of the instrument before the questionnaires were administered to samples. The purpose of the pilot test was to ensure that there were not any differences in the interpretation of the measurement items as a result of necessary modifications made to suit this particular study.

3.11.2. Reliability test

When discussing data collection methods and analytical approaches, reliability relates to whether they would yield consistent results if they were reproduced or replicated by a different researcher (Saunders et al. 2009). Reliability of items of survey instrument is often measured by Cronbach's alpha, with alpha value of 0.7 and above indicating acceptable level. The Cronbach α values for all the constructs of this study as statistically calculated by SPSS tool is above the cutoff point 0.7. This means that the results of survey questionnaire are reliable to proceed for further analysis.

Table 3.1 Summary of Cronbach's alpha values

Constructs	Cronbach's Alpha	No. of Items
Performance Expectancy (PE)	0.811	4
Effort Expectancy (EE)	0.797	4
Social Influence (SI)	0.806	4
Facilitating Conditions (FC)	0.809	4
Price Value (PV)	0.785	4
Perceived risk (PR)	0.834	4
Perceived knowledge (PK)	0.797	3
Adoption of Mobile money (ADP)	0.779	4
All variables		**31**

Source: (Survey result, 2023)

3.12. Ethical Considerations

Throughout the course of this research work, necessary ethical requirements were maintained. Respondents were courteously asked for their willingness to participate in filling out the questionnaire and well informed that they are not required to fill their names on questionnaire to ensure anonymity. Besides, purpose of the study and the purpose for which their response will be used was clearly revealed so that they feel confident and give their honest responses. Strict confidentiality of responses collected was maintained and respondents were assured of doing so by clearly stating it on the outline of each questionnaire. Any relevant concepts borrowed from other sources were clearly cited and sensitive company data such as the name, address of clients, and monetary records were never disclosed.

CHAPTER FOUR
DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

4.1. Introduction

Data collected from respondents using survey questions will be presented in this chapter using a variety of visual tools, including tables and charts. Further, the data will thoroughly be analyzed and interpreted to give a shied-light to presented data.

4.2. Data Response Rate

Table 4. 1 Response Rates to Questionnaires

Description	Number	Percentage
Questionnaires handed	385	100
Uncollected	45	11.6
Total collected	340	88.4
Invalid	12	3.1
Valid	328	85.3

Source: (Survey result, 2023)

328 of the 385 questionnaires that were given out to responders were collected and verified as being complete. As noted by Fryrear (2015), it is preferable to achieve a response rate of 80% or above for survey questionnaires given to external respondents; consequently, the response rate 85% obtained in this study satisfied the required response rate to proceed with the analysis. This goes well surpassing what Saunders et al. (2009) suggested that response rates for business survey questionnaires could range from as little as 50% to 65%.

4.3. Data cleaning and screening

In the process of administering and collecting a survey questionnaire to and from respondents only 6 questionnaires were found to have missing values. According to Tabachnick and Fidell (2013), any measures, including leaving the data as is to handle the missing values, could be taken since the results are similar. If a small percentage of data points randomly missing from the total data in a large data set amounts to 5% or less, there may be an insufficient problem that arises due to these missing values. In light of this, the missing values were left over, and the analysis continued.

4.4. Respondents' demographic profiles

Table 4. 2 Respondents' Demographic Profile

Description		Frequency	Percentage
Age (in years)	18-25	59	18.0
	26-35	181	55.2
	36-45	50	15.2
	46-55	30	9.1
	>55	8	2.4
	Total	328	100.0
Gender	Male	181	55.2
	Female	147	44.8
	Total	328	100.0
Occupation	Unemployed	20	6.1
	Self employed	77	23.5
	Private org. employee	97	29.6
	Gov't employee	126	38.4
	Other	8	2.4
	Total	328	100.0
Highest education level	Primary	16	4.9
	Secondary/TVET	68	20.7
	BA/BSc	160	48.8
	MA/MSc	80	24.4
	Above MA/MSc	4	1.2
	Total	328	100.0
Monthly income (in Birr)	Up to 5,000	36	11.0
	5001-10,000	66	20.1
	10,001-15,000	105	32.0
	15,001-20,000	81	24.7
	Above 20,000	40	12.2
	Total	328	100.0

Source: (Survey result, 2023)

Table 4.2 above demonstrates that out of all the obtained responses, 55.2 percent of respondents are categorized under the age of 26-35, followed by 18 percent within 18-25, 15.2 percent within 36-45, 9.1 percent between 46-55 and only 2.4 percent are above age of 55. Regarding the respondents' gender, this survey had a total of 55.2 percent male respondents and 44.8 percent female respondents.

Concerning occupation of the respondents, majority of respondents which accounts for 38.4 percent were government employee followed by those who work for private organizations which accounts for 29.6 percent. Further, 23.5 percent of respondents of this study are self-employed while 6.1 percent are categorized as unemployed who might depend on families' and relatives' support. The rest small portion of respondents which accounts for 2.4 percent are attributed to other which might include any other job categories not listed on this survey such as NGOs, family support and etc. As indicated hereabove most of respondents to this survey were in a good economic condition which shows they are potential user of mobile money services and target market for mobile money providers.

From the total respondents in the research, 48.8% have a BA or BSc degree, followed by 24.4, 20.7, 4.9, and 1.2 percent who have an MA or MSc degree, Secondary/TVET completion, a primary degree, and above an MA or MSc degree, respectively.

Finally, the table has also presented the monthly income of respondents and indicated that most of respondents which accounts for 32 percent of total number of respondents earn birr 10,001-15,000 followed by 24.7 percent of those who earn between birr 15,001-20,000 and 20.1 percent of those who earn between 5001-10,000. Whereas, the rest 12.2 percent and 11.0 percent of total respondents earn Above 20,000 and up to 5,000 respectively. This indicates most of respondents of this study earn amount of money which could enable them afford the use mobile money services.

4.5. Respondents' mobile money usage behavior

Table 4. 3 Telebirr service usage frequency

How often do you use Telebirr services?				
	Frequency	Percent	Valid Percent	Cumulative Percent
Always	101	30.8	30.8	30.8
Often	89	27.1	27.1	57.9
Sometimes	106	32.3	32.3	90.2
Rarely	32	9.8	9.8	100.0
Total	328	100.0	100.0	

Source: (Survey result, 2023)

According to table 4.3 above, 30.8 percent of respondents to this survey are regular users. Further, 32.3 percent of respondents are those who use the service sometimes followed by 27.1 percent who uses often. Just 9.8 percent are rare users. From the above data one can say that telebirr has a high usage rate given its short age in the market.

4.6. Use of telebirr services

Table 4. 4 Purposes respondents use telebirr for

Telebirr Services purposes				
		Responses		Percent of Cases
		N	Percent	
Which telebirr services do you use?[a]	Use Telebirr to send money	218	20.9%	67.3%
	Use Telebirr to deposit cash	57	5.5%	17.6%
	Use Telebirr to withdraw cash	105	10.1%	32.4%
	Use Telebirr to buy airtime	219	21.0%	67.6%
	Use Telebirr to receive payment	98	9.4%	30.2%
	Use Telebirr to pay for bills, merchant, tickets, utility, traffic penalty etc.	203	19.5%	62.7%
	Use Telebirr to get financial service (Telebirr mela, sanduk and endekise)	121	11.6%	37.3%
	Use Telebirr for other services	21	2.0%	6.5%
Total		1042	100.0%	321.6%
a. Dichotomy group tabulated at value 1.				

Source: (Survey result, 2023)

Table 4.4 shows that respondents use telebirr mostly to buy airtime, send money and pay with telebirr (to pay for bills, merchant, tickets, utility, traffic penalty etc.). 67.6 percent of total respondents use telebirr to buy airtime, 67.3 percent use to send money, and 62.7 percent to pay with telebirr. In addition, 37.3 percent of respondents use telebirr to get financial services such as telebirr mela, sanduk and endekise, while 32.4 percent and 30.2 percent of respondents use telebirr to withdraw cash and receive payment respectively. Finally, 6.5 percent of participants responded they use telebirr for other services not listed here in the survey which may include foreign remittance, donations and etc. Overall, as per these primary data customers are using each of telebirr services though the usage is high on some.

4.7. Likert Scale Values and Analysis of Aggregated Responses

Table 4. 5 Aggregate responses of Likert scale items

Performance Expectancy (PE)			
Items	**N**	**Mean**	**SD**
I find Telebirr services useful in my day-to-day life.	328	4.38	.859
Using Telebirr services increases my productivity.	328	4.12	.848
Using Telebirr services increases my chances of achieving things.	328	4.12	.793
Using Telebirr helps me to accomplish things more quickly.	328	4.45	.685
Grand Mean and standard deviation		4.2668	.65381
Effort Expectancy (EE)			
Items	**N**	**Mean**	**SD**
Learning how to use Telebirr is easy for me.	328	4.41	.780
My interaction with Telebirr system is clear and understandable.	328	4.39	.758
I find Telebirr easy to use.	328	4.54	.658
It is easy for me to become skillful at using Telebirr services	328	4.38	.706
Grand Mean and standard deviation		4.4268	.60450
Social Influence (SI)			
Items	**N**	**Mean**	**SD**
People who are important to me (family/friends/relatives) think that I should use Teleb1irr services.	328	3.91	.794
People who influence my behavior think that I should use Telebirr services.	328	3.76	.820
People whose options I value prefer that I use Telebirr services.	328	3.90	.793
People who are important to me recommend me to use Telebirr services.	328	4.11	.897
Grand Mean and standard deviation		3.9192	.66356

Facilitating conditions (FC)			
Items	**N**	**Mean**	**SD**
I have the necessary resources to use Telebirr services.	328	3.54	1.080
I have the knowledge necessary to use Telebirr services.	328	3.57	1.096
Telebirr services are compatible with other technologies I use.	328	3.62	1.057
I can get help from others when I have difficulties using Telebirr services.	328	3.50	1.020
Grand Mean and standard deviation		**3.5556**	**.93160**
Perceived value (PV)			
Items	**N**	**Mean**	**SD**
Telebirr services are reasonably priced.	328	3.77	.990
Telebirr service is a good value for the money I pay.	328	4.01	.955
At the current price, Telebirr services provide a good value.	328	3.99	.998
I can save money when I use Telebirr services.	328	3.80	.979
Grand Mean and standard deviation		**3.8918**	**.81679**
Perceived risk (PR)			
Items	**N**	**Mean**	**SD**
Using Telebirr services subject my Telebirr account to potential fraud	328	3.86	1.021
I think using Telebirr services subject my Telebirr account to financial risk	328	3.74	1.004
I think using Telebirr services puts my privacy at risk	328	3.56	1.056
Hackers might take control of my account if I use Telebirr services	328	3.63	1.044
Grand Mean and standard deviation		**3.6989**	**.87779**
Perceived knowledge (PK)			
Items	**N**	**Mean**	**SD**
When needed, I will get enough guidance from the company related to Telebirr services	328	3.44	1.056
I have received enough information about the benefits of using Telebirr services.	328	3.52	1.055
In general, I know about Telebirr services	328	3.54	1.080
Grand Mean and standard deviation		**3.4990**	**.97818**
Adoption of Mobile money services (ADP)			
Items	**N**	**Mean**	**SD**
I intend to continue using Telebirr services in the future.	328	4.39	.730
I will always try to use Telebirr services in my daily life.	328	4.28	.779
I plan to continue to use Telebirr services frequently.	328	4.30	.775
I recommend others to use Telebirr systems.	328	4.41	.757
Grand Mean and standard deviation		**4.3453**	**.65888**

Source: (Survey result, 2023)

This section presents the average score and standard deviation of each survey items under the seven predictor constructs and the dependent variable. Based on a five-point Likert scale where 1 is strongly disagree, 2 is disagree, 3 is neutral, 4 is agree, and 5 is highly agree, the average score of the items shows the degree of agreement among responders. According to scales classified as "high rank" for mean ratings of 4.0 and above, "middle rank" for mean ratings between 4.0 and 3.5, and "low rank" for ratings of 3.5 and lower, the mean and standard deviations derived from survey data are interpreted (Amentie, et al., 2016).

According to table 4.5 the aggregate mean score and standard deviation of construct performance expectancy is 4.2668 and 0.65381 respectively. Similarly, the mean and standard deviation of effort expectancy is 4.4268 and 0.60450 respectively. Both variables fell in a high rank category of mean score which indicates respondents agree that telebirr is useful and easy to use to accomplish their daily tasks. Thus, these two constructs are important determinants of adoption of telebirr services.

Besides, mean score and standard deviation of social influence factor is 3.9192 and 0.66356 respectively which lies in a middle rank range of mean between 4 and 3.5. With a mean score of 3.5556 and a standard deviation of 0.93160, the facilitating condition is barely above the medium-rank category. According to this, respondents affirm that social influence and facilitating conditions have a moderate impact on the adoption of telebirr.

The average mean and standard deviation for perceived risk are 3.6989 and 0.87779, respectively, while those for price value are 3.8918 and 0.81679. Given that price value and perceived risk are two factors that rest in the middle of the ranking scale, these results imply that respondents do agree on the moderate effect of the price values and related risk of using telebirr services.

Last but not least, the second independent variable in this study, perceived knowledge, had a grand mean and standard deviation of 3.4990 and 0.97818, respectively, indicating that it was a low-ranking category mean and had the least potential to impact people's acceptance of tele-business services. Respondents achieved a high mean value of 4.3453 with a standard deviation of 0.65888 for the dependent variable "adoption of telebirr services". This suggests that respondents believe they plan to use telebirr services in the future, particularly due to the many benefits they obtain, the system's simplicity, social elements, availability of enabling conditions, and the cost and value they save when using these services, among other determinants.

4.8. Summary of cumulative responses to items on the Likert scale

Table 4. 6 Summary of cumulative responses to items on the Likert scale

Variables	N	Mean	Std. Deviation
Performance Expectancy (PE)	328	4.2668	.65381
Effort Expectancy (EE)	328	4.4268	.60450
Social Influence (SI)	328	3.9192	.66356
Facilitating Conditions (FC)	328	3.5556	.93160
Price Value (PV)	328	3.8918	.81679
Perceived risk (PR)	328	3.6989	.87779
Perceived knowledge (PK)	328	3.4990	.97818
Adoption of Mobile Money (ADP)	328	4.3453	.65888

Source: (Survey result, 2023)

Table 4.6 above shows the average mean score and standard deviation for all seven independent constructs considered for this study apart from mean values of each item under these variables. Accordingly, effort expectancy is a variable having a highest mean score of 4.4268 after which comes the performance expectancy variable having a closer mean value of 4.2668. The other four constructs namely social influence, price value, perceived risk and facilitating conditions have a moderate mean value. Perceived knowledge is a variable with a least mean score having a mean value of 3.4990. In contrast, standard deviation of all constructs is below 1 implying that there is less variation in respondents' response to survey items and they were giving close evaluation marks to constructs of the study.

4.9. The Correlation Analysis

Table 4. 7 Pearson correlation result

Correlations									
		PE	EE	SI	FC	PV	PR	PK	ADP
PE	Pearson Correlation	1							
	Sig. (2-tailed)								
EE	Pearson Correlation	.586**	1						
	Sig. (2-tailed)	.000							
SI	Pearson Correlation	.439**	.413**	1					
	Sig. (2-tailed)	.000	.000						
FC	Pearson Correlation	.180**	.204**	.141*	1				
	Sig. (2-tailed)	.001	.000	.010					
PV	Pearson Correlation	.376**	.222**	.396**	.228**	1			
	Sig. (2-tailed)	.000	.000	.000	.000				
PR	Pearson Correlation	.150**	.052	.059	-.228**	.086	1		
	Sig. (2-tailed)	.007	.348	.291	.000	.118			
PK	Pearson Correlation	.054	.009	.049	-.176**	-.069	-.032	1	
	Sig. (2-tailed)	.331	.872	.377	.001	.210	.568		
ADP	Pearson Correlation	.609**	.500**	.508**	.189**	.415**	.063	.042	1
	Sig. (2-tailed)	.000	.000	.000	.001	.000	.253	.446	

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
N=328

Source: (Survey result, 2023)

This study has employed a correlation analysis to identify weather a correlation exists between independent and the dependent variables of the study and if it exists to further investigate the direction and magnitude/ strength of associations between them. The most common indicator of correlation employed by various statistical investigations is the Pearson product-moment correlation (Pallant, 2005). According to Stehlik-Barry and Babinec (2017), the Pearson product moment correlation, in turn, requires variables to be in interval-level (continuous) mode. As a result, the data used for this study were well suited for the data type needed to run the correlation analysis in SPSS because they had been automatically transformed to the average value of the individual items of each variable. The outcome of the entire process is shown in Table 4.7 above.

The range of appropriate Pearson correlation coefficients (r) is between -1 and +1, with ± signs and magnitude of the value denoting the direction and strength of the association, respectively. According to Pallant (2005), a coefficient value (r) that ranges from ±0.10 to ±0.29 indicates a small or weak correlation; a coefficient value that ranges from ±0.30 to ±0.49 signifies a moderate correlation; and a value that ranges from ±0.50 to ±1.0 indicates that the correlation between the variables is strong.

According to Table 4.7 above, Except for the correlation of perceived risk with facilitating condition, perceived knowledge with facilitating condition, perceived knowledge with price value, and perceived knowledge with perceived risk, relationship between independent and dependent variables shows a positive correlation between each other and the dependent variable. Having a coefficient value (r) ranging from 0.042 to 0.609, a relationship between predictors and the dependent variable had a varying magnitude of correlation. Performance expectancy (PE) is the variable having a strong correlation with adoption of telebirr with r-value of 0.609 followed by social influence (SI) and effort expectancy (EE) with r-value of 0.508 and 0.500 respectively.

Price value (PV) was shown to have a moderate correlation coefficient of 0.415. The remaining three variables, perceived risk (PR), perceived knowledge (PK), and facilitating condition (FC), had correlations that ranged from weak to very weak, with r-values of 0.189, 0.063, and 0.042, respectively. As a result, the dependent variable adoption of telebirr has a direct correlation with all of the independent variables of the study. The dependent variable showed a strong association with three of the independent variables: performance expectancy, social influence, and effort expectancy. Whereas, price value had a moderate relationship and the remaining three independent variables, including facilitating condition, perceived risk, and perceived knowledge, had a weak correlation.

4.10. Test of Normality of Data

Using SPSS version 26, tests such as the Skewness and Kurtosis tests, the Normal Probability Plot (NPP), and histogram tests were carried out to determine whether the data were normal. Many statistical tests require a determination of the data's normality since parametric testing assumes normal data as a fundamental tenet. The two basic techniques for determining normalcy are pictorial and numerical. The standardized Skewness distribution result and the kurtosis result must

fall within the range of ±2 for the numerical evaluation of normality (Hair, et al., 1998).

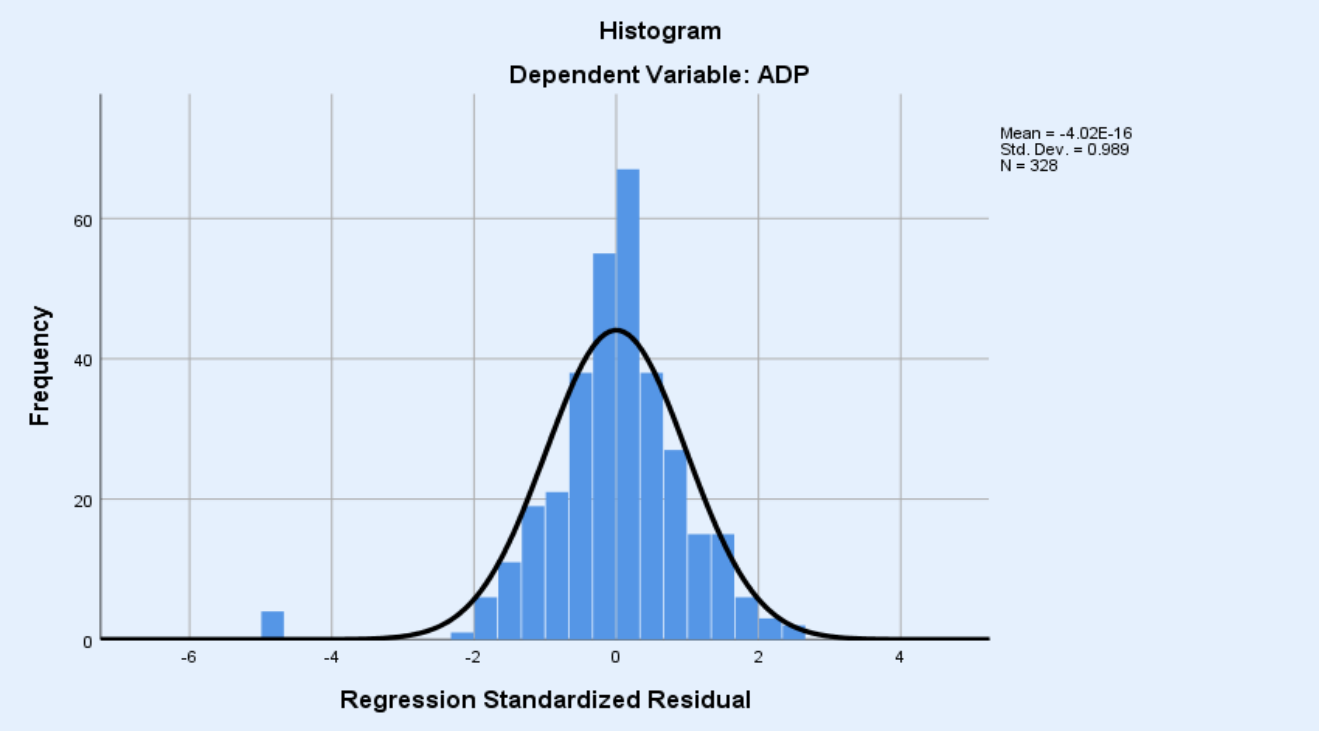
Table 4. 8 Skewness and Kurtosis values for normality test of data

	PE	EE	SI	FC	PV	PR	PK	ADP
N	328	328	328	328	328	328	328	328
Skewness	-.955	-1.097	-.718	-.017	-.642	-.570	-.575	-1.094
Kurtosis	.683	.776	.757	-1.291	-.232	-.047	-.420	1.641

Source: (Survey result, 2023)

As the statistics of all variables in Table 4.7 Above shows, the Skewness and Kurtosis results were between ±2. Therefore, it is possible to state that the data were normal distributed and reliable to proceed for analysis. The normal histogram test was used to examine the distribution's normality, as it is depicted below.

Figure 4. 1 A histogram for normality test of data

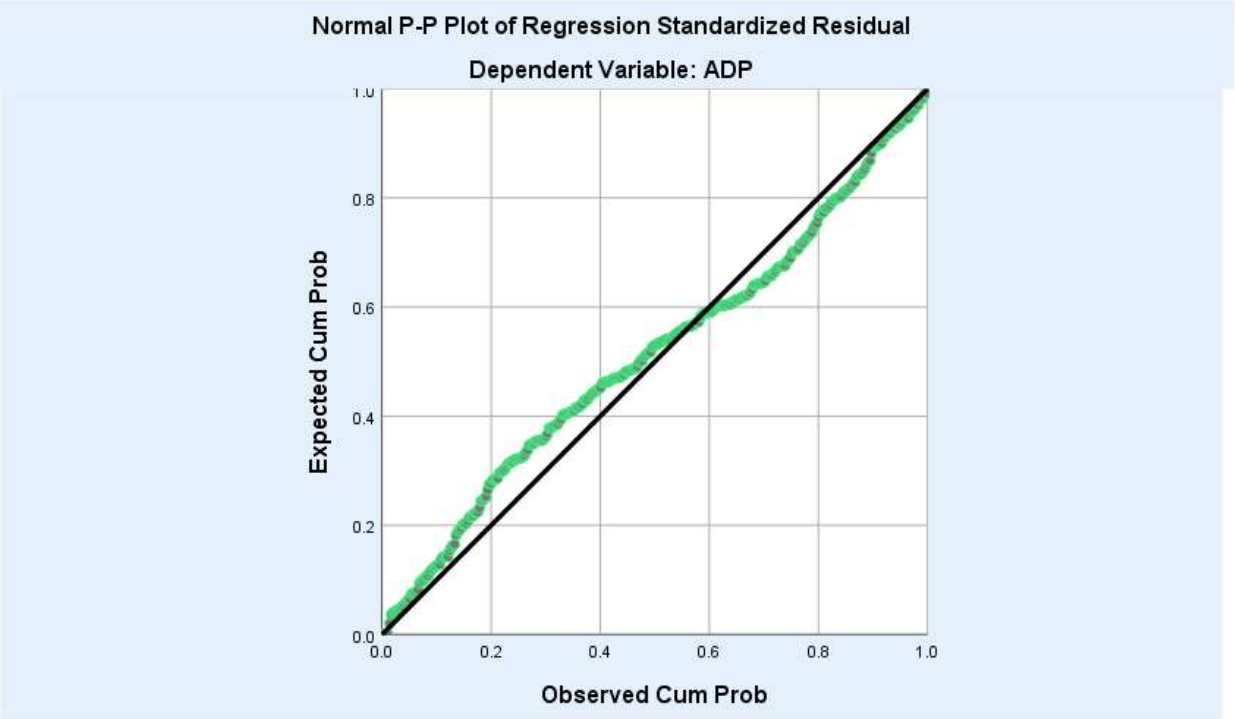


Source: (Survey result, 2023)

The error term ought to comply with the assumptions of the regression models. Figure 4.1 above

illustrates how the researcher utilized a histogram to determine the normal distribution of residuals. The results reveal that while many residuals are quite close to the curve and the histogram is bell-shaped, few of standard residuals are slightly off the curve. The greatest bars on the histogram are all positioned on the central value, which suggests that the majority of scores are distributed around the distribution's center. Therefore, this suggests that the residuals are distributed normally. The normal P-P plot, as seen below, was also used to test the normal distribution of data.

Figure 4. 2 Normal probability plot



Source: (Survey result, 2023)

The above normal P-P plot with figure 4.2, which shows no significant divergence in the spread of the residuals and shows no significant detachment from normalcy, provided additional evidence for normality.

4.11. Test of Multicollinearity

Table 4. 9 Test of Multicollinearity among Variables

Variables	Tolerance	VIF
PE	.558	1.792
EE	.615	1.627
SI	.705	1.419
FC	.825	1.212
PV	.757	1.321
PR	.897	1.115
PK	.946	1.058

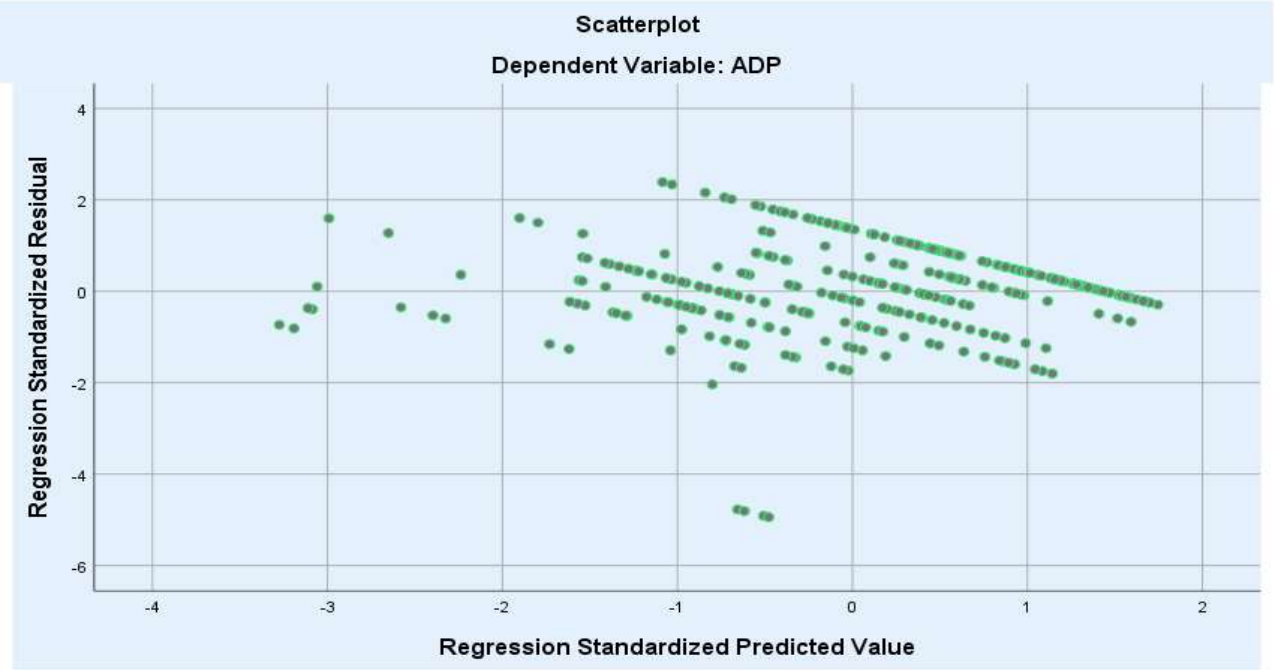
Source: (Survey result, 2023)

A test using multicollinearity values was conducted to determine whether such a challenge existed because the presence of extreme relationships among the independent variables could make it difficult to choose the proper factors or duplicate factors that would not produce a unique contribution to the dependent variable. This test is advised by several marketing researchers. Tolerance and Variance Inflation Factor (VIF) values, which reflect how well a predictor explains a predicted variable, serve as a representation of the signal of multicollinearity and its magnitude (Hair et al., 2002). The cutoff points proposed by Hair, et al., (2002) are tolerance values less than 0.10 or a VIF value more than 10, which denotes that multicollinearity is an issue.

It is clear that multiple linear regression analysis can be performed because, as shown in Table 4.9, all variables had Tolerance values greater than 0.10 or VIF values less than 10, confirming that all variables provided values within the acceptable range and ensuring the absence of multicollinearity.

4.10 Test of Homoscedasticity Assumption

Figure 4. 3 Test of Homoscedasticity scatter plot



Source: (Survey result, 2023)

A variable should demonstrate consistency across all of the other variables' scores (same variability at all levels), i.e., the variance of errors should be stable and constant across all levels. Figure 4.3 above, which displays the general resemblance of the width of scatter points all having the same even distribution of scatter points towards the middle, illustrates how this feature was tested using scatter plots (among other things) with the use of SPSS.

The points are spread out in a specified area in the middle (along the 0,0 coordinates), as shown in Figure 4.3 above, indicating that the residuals are largely distributed inside a rectangular shape and that there is no indication of departures from normalcy or homoscedasticity. As Figure 4.3 was also qualified for this, Tabachnick and Fidell (2013) stated that it is tolerable to see a few outliers ranging as much as 3.3 or a few more and -3.3 or a few less with a large sample size of data. By ensuring that the variance in the dependent variable (adoption of telebirr services) was distributed equally across all the predictors, this study provided that assurance.

4.12. Determinants of Mobile Money Service Adoption

Having set a prerequisite test and fulfilled a minimum requirements for performing linear regression analysis, this section presents components of regression results to see whether predictor variables explain the dependent variable and assess a quantitative relationships between independent variables of the study (Performance expectancy, effort expectancy, social influence, facilitating condition, price value, perceived risk and perceived knowledge) and dependent variable (adoption of mobile money service).

Table 4. 10 Summary of the regression model

Model Summary [b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.692[a]	.478	.467	.48113
a. Predictors: (Constant), PK, EE, PR, PV, FC, SI, PE b. Dependent Variable: ADP (Adoption of mobile money services)				

Source: (Survey result, 2023)

Table 4.10 above outlines the general relationship between adoption of mobile money service and seven predictor variables considered for this study with R-value of 69.2 percent. The model also produced an R-square value of 0.478, indicating that seven predictor variables (performance expectancy, effort expectancy, social influence, facilitating condition, price value, perceived risk, and perceived knowledge) account for 47.8 percent of the variances in the adoption of mobile money services. Different variables than those taken into account for this study account for 42.2% of the variance. According to Pallant (2005), a 47.8 percent predictive power of all seven variables described in this study of variation in the adoption of mobile money service, is a good result for studies involving peoples' behaviors. Additionally, the model's adjusted R-square value of 0.467 demonstrates that it may be used to infer population-level data from sample-level results. The closeness between R-square and adjusted R-square values denotes the model's generalizability and minimal loss of predictive ability from a study sample to population.

Table 4. 11 ANOVA (Analysis of Variance)- Significance of model used

ANOVA [a]						
Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	67.883	7	9.698	41.892	.000[b]
	Residual	74.077	320	.231		
	Total	141.960	327			
a. Dependent Variable: ADP (Adoption of Mobile money services) b. Predictors: (Constant), PK, EE, PR, PV, FC, SI, PE						

Source: (Survey result, 2023)

Regressions and residual sum of squares were shown in Table 4.11 above, along with the corresponding degree of freedom. The F value from this ANOVA (analysis of variance table), which may be used to determine whether the test is statistically significant, came out to be 41.892, which is significant as Sig. value shows 0.000. This F-value assisted in this study's decision to accept the alternative hypothesis that at least one variable was not zero and reject the null hypothesis that all of the regression coefficients were zero. The P-value of 0.000, which was less than 0.001, shows that the F value was significant as a result.

Table 4. 12 Effects of Independent Variables on adoption of mobile money service

Coefficients [a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	.615	.278		2.212	.028
	PE	.358	.054	.355	6.574	.000
	EE	.176	.056	.162	3.143	.002
	SI	.217	.048	.219	4.548	.000
	FC	.019	.031	.027	.597	.551
	PV	.126	.037	.156	3.371	.001
	PR	-.013	.032	-.018	-.417	.677
	PK	.017	.028	.026	.625	.533
a. Dependent Variable: ADP (Adoption of mobile money services)						

Source: (Survey result, 2023)

A summary of how much each of these predictors contributes to the dependent variable is provided by the regression coefficients of each independent variable in Table 4.12 above. A regression equation for the study model is also developed using the regression coefficient found in this table. Additionally, Performance expectancy and perceived risk contributed the most and the least to the dependent variable from the entire study variables, respectively. The regression equation is developed as follows, using a constant value of 0.615 and coefficient values of PE=0.358, EE=0.176, SI=0.217, FC=0.019, PV=0.126, PR= -0.013, PK=0.017.

ADP = 0.615+0.358PE+0.176EE+0.217SI+0.019FC+0.126PV-0.013PR+0.017PK

Nevertheless, from the whole independent variables of the study, only performance expectancy, effort expectancy, social influence, and price value were found to be significant, as the Sig. values of these four variables were less than 0.05 at the 95 percent confidence level. Thus, the model is rewritten as follows:

ADP (Adoption of mobile money service) = 0.615+0.358PE+0.176EE+0.217SI+0.126PV

4.13. Hypothesis Testing and Discussions

This subsection presents a hypothesis testing procedure conducted by evaluating hypotheses with respect to p-values obtained from regression analysis. Earlier in the first chapter of this paper, seven hypotheses had been proposed by the student researcher in relation to the study's predictors. The hypotheses test is made to check whether predictor variables (performance expectancy, effort expectancy, social influence, facilitating condition, price value, perceived risk, and perceived knowledge) had a significant influence on the dependent variable (adoption of mobile money services, telebirr), and the results are portrayed as shown below:

H1: Performance expectancy (PE) has a significant influence on the adoption of Telebirr mobile money service.

Performance Expectancy generated a p-value of 0.000, which, at a 95% confidence level, was less than 0.05, based on the results presented in table 4.12. As a result, the hypothesis has been accepted, and it was found that Performance Expectancy had a positive significant impact on users' intentions to use the telebirr mobile money service. That is, a one percent change in Performance Expectancy led to a 35.5% increase in mobile money service usage.

Keeping other construct of this model constant, Performance expectancy which is described as an extension of perceived usefulness in various technology acceptance models had become a strongest predictor of the dependent variable adoption of telebirr mobile money service. This might be attributed to respondents' evaluation of the construct in relation to degree to which using the system will help him or her to attain excellence in job performance. Telebirr currently offers a wide range of services including sending money within telebirr accounts and to bank accounts, purchase airtime, pay bills, deposit cash, withdraw cash, access financial services (such as micro loan, saving and overdraft), and foreign remittance among others. These services help users to attain excellence in accomplishing their daily activities. Finding of this study that, performance expectancy is the most significant predictor of adoption of telebirr is consistent with that of Venkatesh, et al. (2003); Lema (2017); Haile (2015).

H2: Effort expectancy (EE) has a significant influence on the adoption of Telebirr mobile money service.

According to the results in table 4.12, Effort Expectancy had a p-value of 0.002, which was less than 0.05 at a 95% confidence level. As a result, the hypothesis was accepted and it was confirmed that effort expectancy has significant positive impacts on telebirr mobile money service adoption. That is, the easier customers get the telebirr system, the more likely they accept and use telebirr services. The beta value of 16.1 percent indicates that one unit increase in effort expectancy (ease of use) results in a 16.1 percent increase in adoption of telebirr services.

Prior findings in similar subjects have also confirmed that effort expectancy, an equivalent construct of perceived ease of use, is a significant determinant of acceptance of technology. According to Venkatesh et al. (2003), effort expectancy is significant in both voluntary and mandatory usage contexts; however, the significance diminishes from the initial period of adoption through the extended periods of usage as individuals become more familiar with the technology and less effort is needed to use the technology (Venkatesh, et al., 2003). Further studies by Haile (2015) on the adoption of mobile banking in Ethiopia and Ezeh and Nwankwo (2017) on consumer acceptance of mobile money in the Eastern Bank in Nigeria substantiate this finding.

H3: Social influence (SI) has a significant influence on the adoption of Telebirr mobile money service.

Based on the results shown in table 4.12, Social influence produced a p-value of 0.000, which, at a 95% confidence level, was less than 0.05. Therefore, an alternative hypothesis that states social influence has a positive significant influence on adoption of telebirr mobile money service was accepted. The beta value of the construct has revealed that a unit increase in social influence results in a 21.9 percent increase in adoption of telebirr services. This implies, whenever customers decide to accept and use telebirr services the social circle around them including families, friends and relatives had a positive significant effect on their decision.

The hypothesis of social influence was that people's decisions to use certain technologies are more likely to be influenced by other important people around them, such as their families, friends, and relatives, whom they believe expect them to use the system or new technology. The finding of this study is in agreement with results of Venkatesh, et al. (2003) that articulates reliance on others' opinions in technology acceptance is significant in mandatory settings, particularly in the early stages of experience, and the influence will lessen over time as increasing experience provides a more objective basis for decision-making. However, an opposing finding by Olivera, et al. (2014) revealed social influence (SI) to have no significant effect on behavioral intention for the use of technology. They rationalize their finding by saying the need to show off or impress others is surpassed by the need to keep financial transactions and data secure.

H4: Facilitating conditions (FC) have a significant influence on the adoption of Telebirr mobile money service.

Based on the results shown in table 4.12, Facilitating conditions produced a p-value of 0.551, which, at a 95% confidence level, was greater than 0.05. Consequently, the hypothesis was rejected. Therefore, it is confirmed that facilitating conditions had no significant influence on adoption of telebirr mobile money service. This might be because users are getting familiar with mobile phones as well as its functionality and they are considering less of facilitating conditions such as compatible tools, knowledge, and assistance in face of difficulties. The finding coincides with study of B. Okumus, F. Alib, A.Bilgihan, and A.Ozturk (2018) which confirms a non-

significant influence of facilitating conditions in context of smartphone apps.

H5: Price value (PV) has a significant influence on the adoption of Telebirr mobile money service.

Based on the results shown in table 4.12, Price value produced a p-value of 0.001, which, at a 95% confidence level, was less than 0.05. Consequently, the hypothesis was accepted. Therefore, an alternative hypothesis that postulates a price value had a positive significant influence on adoption of telebirr mobile money service was accepted. Based on construct's contribution to explain variance in the dependent variable, a one unit increase in price value results in a 15.6 percent increase in adoption of telebirr services.

The results show that respondents believe that telebirr services are reasonably priced considering the money and time they save by using the service. In other words, when the advantages of using the system outweigh the monetary and non-monetary costs of using them, price value construct will have a positive significant effect on acceptance of that system, which also agrees with finding of Venkatesh, et al. (2003).

H6: Perceived risk (PR) has a significant influence on the adoption of telebirr mobile money services

Based on the results shown in table 4.12, Perceived risk produced a p-value of 0.667, which, at a 95% confidence level, was greater than 0.05. Consequently, the hypothesis was rejected. This means that when customer intends to use telebirr services risk factors has statistically insignificant influence their choice in case of this study. The result is consistent with the findings of Lemma (2017) which found perceived risk to have no significant influence on adoption of mobile financial services (â=0.044, p=0.524).

H7: Perceived knowledge (PK) has a significant influence on the adoption of telebirr mobile money services

Based on the results shown in table 4.12, Perceived knowledge produced a p-value of 0.533, which, at a 95% confidence level, was greater than 0.05. Consequently, the hypothesis was rejected. Therefore, an alternative hypothesis that says perceived knowledge has a significant effect on adoption of telebirr was rejected and the null hypothesis that perceived knowledge has no significant influence on adoption of telebirr services was accepted. That is, when users choose to

use telebirr services their perceived knowledge of mobile money services will not influence their decision. This finding is inconsistent with the findings of Ezeh and Nwankwo (2017) and Sanjeewa and Yatigammana (2021) which goes perceived knowledge (a construct labeled as awareness in their study) has a positive significant relationship with the intention to use mobile money.

4.14. Summary of Hypothesis Testing Results

Table 4. 13 Hypothesis Testing Results Summary

No.	Hypotheses	Decision	Reason
H1	Performance expectancy (PE) has a significant influence on the adoption of Telebirr mobile money service.	Accepted	P=0.000<0.05 β=0.335
H2	Effort expectancy (EE) has a significant influence on the adoption of Telebirr mobile money service.	Accepted	P=0.002<0.05 β=0.162
H3	Social influence (SI) has a significant influence on the adoption of Telebirr mobile money service.	Accepted	P=0.000<0.05 β=0.219
H4	Facilitating conditions (FC) have a significant influence on the adoption of Telebirr mobile money service.	Rejected	P=0.551>0.05 β=0.027
H5	Price value (PV) has a significant influence on the adoption of Telebirr mobile money service.	Accepted	P=0.001<0.05 β=0.156
H6	Perceived risk (PR) has a significant influence on the adoption of telebirr mobile money services	Rejected	P=0.677>0.05 β= -0.018
H7	Perceived knowledge (PK) has a significant influence on the adoption of telebirr mobile money services	Rejected	P=0.533>0.05 β=0.026

CHAPTER FIVE
SUMMARY OF MAJOR FINDINGS, CONCLUSION, AND RECOMMENDATIONS

5.1. Introduction

This chapter is going to cover a summary of the study's key findings, as well as conclusions drawn and recommendations forwarded for the various stakeholders. Finally, suggestions for further study will be addressed.

5.2. Summary of Findings

This study was aimed at investigating factors affecting adoption of mobile money services in case telebirr, with a specific focus in Addis Ababa. A Hypothesized factors considered in this study to have an influence on adoption of telebirr service was derived from a notable model of technology acceptance called a second-generation Unified theory of acceptance and use of technology (UTAUT2). The study considered constructs of the UTAUT2 Model by replacing hedonic motivation and habit with perceived risk and perceived knowledge. The rest variables were performance expectancy, effort expectancy, social influence, facilitating conditions, and price value.

To measure what factors affecting the adoption of telebirr mobile money services, the study examined seven independent variables. Each construct was evaluated using more than three indicators or items on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). 385 samples were given a survey questionnaire with 31 total items, and 85.3% of the valid responses were used for further study. The coefficient alpha was used to evaluate the study's reliability. The construct's reliability for this study ranged from 0.703 to 0.843. This shows that item used in the study has a good reliability.

Pearson correlation analysis was conducted to check if there was a relationship among the independent variables as well as between the independent variables and dependent variable of the study. Except for the correlation between perceived risk and facilitating condition, perceived knowledge and facilitating condition, perceived knowledge and price value, and perceived knowledge and perceived risk, the remaining correlation coefficients were all positive. Performance expectancy, effort expectancy, and social influence had correlation coefficients of 0.609, 0.500, and 0.508 with the dependent variable, respectively. The dependent variable's

coefficient of correlation with the other predictor variables was 0.189 for the relationship with facilitating conditions, 0.415 for the relationship with price value, 0.063 for the relationship with perceived risk, and 0.042 for the relationship with perceived knowledge.

Several tests were performed to check if assumption of regression analysis was fulfilled. The data were tested for normality using skewness and kurtosis parameters and the test result was between +/-2 for both parameters. The results of the multicollinearity test indicated that all constructs had tolerance values above 0.1 and VIF (variance inflation factor) values below 10. The homoscedasticity assumption test also verified that the residuals were roughly distributed within the rectangular form of the scatter plot, showing that there is no indication of departures from normality.

The findings of the regression analysis produced r-values of 0.692 and r square value of 0.478. This analysis's ANOVA results produced a F value of 41.892 and a Sig. value of 0.000. With a value of 0.355, the beta value from regression shows performance expectancy to be the primary predictor of telebirr adoption. For effort expectancy, social influence, facilitating conditions, price value, perceived risk, and perceived knowledge, the beta values were 0.162, 0.219, 0.027, 0.156, -0.018, and 0.026, respectively.

5.3. Conclusions

The objective of this study was to investigate factors affecting adoption of telebirr mobile money services. To this end, the study used a data collection instrument validated in several prior studies. Further, the instrument was checked for validity and reliability with the help of Cronbach's alpha coefficient and alpha values obtained were ranged between 0.779 and 0.834, exceeding the minimum acceptable value of 0.7. A Pearson correlation analysis showed that a correlation of independent variables with dependent variable were all positive. Further, performance expectancy, effort expectancy, and social influence had a strong correlation with dependent variable whereas, facilitating conditions, perceived risk, perceived knowledge had a weak association with the dependent variable. The only factor with a moderate association is price value.

The results of test of normality of data showed that the data used in this study were normally distributed since all skewness and kurtosis values of the variables fell between +/-2. In addition, a

graphic methods of normality test with the help of normal probability plot and histogram have confirmed the same. The research also provided numerical support for the absence of multicollinearity, among the independent variables.

According to the study's regression model, performance expectancy, effort expectancy, social influence, facilitating conditions, price value, perceived risk, and perceived knowledge account for 47.8% of variations in the adoption of the telebirr mobile money service. Other variables not taken into account in this study are responsible for the remaining 42.2 percent of the variance. Keeping other predictor variables constant, performance expectancy is the highest contributor to explain adoption of telebirr service with a β value of 0.355 while perceived risk being the least contributor with a β value of -.018. In order of significance from highest to lowest, the remaining predictors- social influence, effort expectancy, price value, facilitating conditions, and perceived knowledge had contribution of 21.9 percent 16.2 percent, 15.6 percent, 2.7 percent, and 2.6 percent respectively.

Based on the regression coefficient and significance level (p-values), four variables, namely performance expectancy, effort expectancy, social influence, and price value, had a significant positive influence on the adoption of telebirr services; hence, the hypotheses accompanying these variables have been accepted. Whereas, facilitating conditions, perceived risk, and perceived knowledge were found to have an insignificant effect on adoption of telebirr services with p-values greater than 0.05 at the 95% confidence level; hence, the hypotheses accompanying them were rejected.

Contrary to other earlier studies in a similar (but not identical) setting, perceived risk and facilitating conditions produced an opposing result, indicating that they are not a significant predictor of telebirr adoption. This may be due to the fact that these two variables are often used as constraints (Okumusm et al., 2015). Another reason could be that users have become more accustomed to the system due to the recent increase in the use of phones and mobile apps.

Besides the correlation and regression results, the descriptive analysis result produced a moderate mean score value for facilitating condition and perceived risk. The mean and standard deviation for facilitating conditions were 3.5556 and 0.93160, respectively, and the mean and standard deviation for perceived risk were 3.6989 and 0.8779, respectively. While perceived knowledge

falls in the low rank mean category with a mean and standard deviation of 3.4990 and 0.97818, respectively. As a result, facilitating conditions and perceived risk had a moderate impact on the adoption of mobile money, although perceived knowledge had little of an impact.

5.4. Recommendations

In today's digital economy, the role of mobile money technology is indispensable. Mobile money is the fastest-growing technology, though adopting these services is not as easy for customers. In accordance with the findings and conclusions of the study, the following possible recommendations are forwarded which are supposed to benefit Ethiotelecom to grow telebirr's customer base and enhance its usage rate, while also helping other stakeholders facilitate the road to digital economy, if properly implemented.

This study showed performance expectancy to have a prime contribution to adoption of mobile money service as many prior studies confirmed in their respective case. Therefore, Ethiotelecom should focus on adding as many features and services as possible to its current telebirr platform so as to enable users drive maximum likely benefit while using the digital money system. This may include integrating with various governmental and private organizations that could make telebirr service more useful and integral part of people's daily life.

The second largest contribution to mobile money adoption goes to social influence. In order to effectively utilize the vital role of social influence in raising acceptability of telebirr among its users, the company has to associate using the service with being trendy, professional, and luxurious in its advertising and other promotion programs. That is the more the client believes using telebirr will help them gain social status and approval from those they believe are essential to them (family, friends, and relatives), the higher the acceptance and use of the service will be.

Given the significant influence of the effort expectancy variable, Ethiotelecom should make the telebirr system simple to use and straightforward in addition to increasing its usefulness and establishing a social status for using it. To do this, the company must provide platforms with simple navigation and local language customization. Additionally, the company's websites must include a knowledge base system, help tabs, and a frequently asked question (FAQ) menu because doing so makes it easier for customers to use the service when they get confused. Ethiotelecom and possibly other mobile money providers are advised to review their service fees so as to attract new

users and enhance usage rate of actual customers. Generally, Ethiotelecom has to leverage the importance of these four significant factors recognized in this study in order to achieve the goal of realizing digital Ethiopia and thereby creating cash less society.

Moreover, yet the regression result revealed an insignificant effect of perceived risk on mobile money adoption, the descriptive statistics shows its moderate effect. Thus, Ethiotelecom should not totally ignore the importance of perceived risk given that risk factors have a prevalent effect on mobile money adoption in a less mature market. The moderate level of agreement among respondents regarding users' knowledge of telebirr mobile money services could be an indication that ethiotelecom should give a due focus on educating and sensitizing customers about the use and advantages of mobile money services in order to increase their awareness and adoption of these services.

5.5. Suggestion for future research

Several constructs were considered to investigate adoption of telebirr service, however there might be other likely constructs (e.g., personal innovativeness, hedonic motivation, and image) that the researcher did not assess. The future study that would consider potential moderating and mediating variable will also result in a more reliable prediction of adoption of telebirr mobile money service.

Additionally, the users in Addis Ababa were the population that was taken into account for the study, which may not be an accurate representation of Ethiopia's entire population. It is advised that future research expand to other regions of the country due to potential differences in how explanatory variables affect mobile money adoption of markets in urban vs rural areas. As customers' awareness of mobile money services continues to evolve and mobile money services are still in their infancy, findings from a cross-sectional study might not be applicable in the future. Thus, longitudinal study is advised in order to comprehend adoption behavior at various market maturity and points in time.

References

Alemu, Getnet, Tadele Ferede, and Alejandro Fiorito. 2021. "*Identifying Binding Constraints on Digital Payment Services in Ethiopia: An Application of a Decision Tree Framework*." CGD Policy Paper 220 Washington, DC: Center for Global Development. https://www.cgdev.org/publication/identifying-binding-constraints-digital-paymentservices-ethiopia-application-decision

Al-Tarawneh, J.M. (2019) *Technology Acceptance Models and Adoption of Innovations: A Literature Review*. International Journal of Scientific and Research Publications (IJSRP) [Post-print], 9 (8), p. p92116. Available from http://dx.doi.org/10.29322/ijsrp.9.08.2019.p92116.

Aker, Jenny C, Boumnijel, Rachid, McClelland, Amanda, & Tierney, Niall. (2011). *Zap it to me: The short-term impacts of a mobile cash transfer program*. Center for Global Development working paper *(268)*

Amentie, C., E, N. and L, K. (2016). *Barriers to Growth of Medium and Small Enterprises in Developing*. Journal of Entrepreneurship and Organization Management, 5(3), pp. 1-4

Awanis, Aramé, Christopher Lowe, Simon K. Andersson-Manjang, Dominica Lindsey (2022). *The State of the Industry Report on Mobile Money 2022*: Global System for Mobile Telecommunication Association (GSMA)

Berg, Andrew G, & Ostry, Jonathan D. (2011). *Equality and Efficiency: Is there a trade-off between the two or do they go hand in hand*? Finance & Development, 48*(003).*

Bonge, Yaboneh. (2021). *Determinants of customers' intention to use e-payments services evidences from Addis Ababa*: Addis Ababa University

Bultum, Ayana G. (2014). *Factors Affecting adoption of Electronic Banking System in Ethiopian Banking Industry*: Journal of management Information System and E commerce. Vol. 1, No.1

Chao, C.-M. (2019) *Factors Determining the Behavioral Intention to Use Mobile Learning: An Application and Extension of the UTAUT Model*. Frontiers in Psychology [Post-print], 10. Available from http://dx.doi.org/10.3389/fpsyg.2019.01652.

Carl McDaniel, Jr. Roger Gates (2010) *Marketing Research* Ninth Edition: John Wiley & Sons, Inc United states of America

Central Intelligence Agency (2022). *The World Factbook*. [Online] Available at: https://www.cia.gov/the-world-factbook/countries/ethiopia [December 21, 2022].

Chen, Y. and Chang, C. (2012), *"Enhance green purchase intentions: The roles of green perceived value, green perceived risk, and green trust*", Management Decision, Vol. 50 No. 3, pp. 502-520. Doi.org/10.1108/00251741211216250.

Claire Scharwatt, Arunjay Katakam, and Jennifer Frydrych, (2014) *State of the Industry: Mobile Financial Services for the Unbanked*

Coulibaly, Sionfou Seydou (2020). *Financial Inclusion through Mobile Money: An Examination of the Decision to use Mobile Money Accounts in WAEMU Countries*: African Economic Research Consortium, Nairobi

Davis, F.D. (1989) *Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology*. *MIS Quarterly* [Post-print], 13 (3), p. 319. Available from http://dx.doi.org/10.2307/249008.

Demirgukunt, A., Klapper, L., Singer, D. and VanOudheusden, P. (2015). *Global Findex Database 2014: Measuring Financial Inclusion around the World*. Washington, DC: The World Bank.

Dwivedi, Y.K., Rana, N.P., Jeyaraj, A., Clement, M. and Williams, M.D. (2017) *Re-examining the Unified Theory of Acceptance and Use of Technology (UTAUT): Towards a Revised Theoretical Model*. *Information Systems Frontiers* [Post-print], 21 (3), pp. 719–734. Available from http://dx.doi.org/10.1007/s10796-017-9774-y.

Ethio telecom (2021/22) *Annual Business Performance Report.*

EURACTIV.com (2018) [cited December 16, 2022] https://www.euractiv.com/section/africa/news/mobile-money-revolution-hits-ethiopia/

Ezeh, P.C. and Nwankwo, N. (2018) *Factors that Influence the Acceptance of Mobile Money in Nigeria. Journal of Research in Marketing* [Post-print], 8 (2), p. 684. Available from http://dx.doi.org/10.17722/jorm.v8i2.217.

Fryrear, A. (2015). *What's a Good Survey Response Rate*? [Online] Available at: https://www.surveygizmo.com/resources/blog/survey-response-rates/

Gencer, M. (2011) *The Mobile Money Movement: Catalyst to Jump-Start Emerging Markets*. *Innovations: Technology, Governance, Globalization* [Post-print], 6 (1), pp. 101–117. Available from http://dx.doi.org/10.1162/inov_a_00061.

Gharaibeh, M.K., Arshad, M.R. and Gharaibeh, N.K. (2018) *Using the UTAUT2 Model to Determine Factors Affecting Adoption of Mobile Banking Services: A Qualitative Approach*. *International Journal of Interactive Mobile Technologies (iJIM)* [post-print], 12 (4), p. 123. Available from http://dx.doi.org/10.3991/ijim.v12i4.8525.

Haile, Laekemariam 2015. *Factors Affecting the Adoption of Mobile Banking in Commercial Bank of Ethiopia*: St. Marry University, Ethiopia. http://hdl.handle.net/123456789/1648

Hair Jr, JF, Anderson, RE, Tatham, RL, & Black, WC. (1998). *Multivariate data analysis.* 5th Intl. ed Prentice Hall Upper Saddle River: NJ.

Huang, C.-Y. and Kao, Y.-S. (2015). *UTAUT2 Based Predictions of Factors Influencing the Technology Acceptance of Phablets by DNP*. Mathematical Problems in Engineering, Issue http://dx.doi.org/10.1155/2015/603747, pp. 1-13.

International Monetary Fund – IMF (2023) [Internet]. [cited December 13, 2022] Available from https://datahelp.imf.org/knowledgebase/articles/1906552-fas-what-is-mobile-money-how-is-it-different-fro

Kabir, Mohammad. (2013). *Factors Influencing the Usage of Mobile Banking: Incident from a Developing Country*. World Review of Business Research. 3. 96-114.

Kothari, Chakravanti Rajagopalachari. (2004). *Research methodology: Methods and techniques*: New Age International.

Lema, Aulelius (2017). *Factors influencing the adoption of mobile financial services in the unbanked population, University of Dodoma, Tanzania. Inkanyiso*: Journal of Humanities and Social Sciences, 2017, 9

Maitai, James, & Omwenga, Jane. (2016). *Factors influencing the adoption of mobile money transfer strategy in telecommunication industry in Kenya: A case of safaricom–Kenya Ltd*. IOSR Journal of Business and Management, 18(10), 84-94.

Malhotra, Pooja, Kassim, Normalini Md, & Ramayah, T. (2014). *Factors affecting adoption of Internet Banking: A case study from India.* Asia-Pacific Journal of Business, 5(2), 13-24.

McKay, Claudia, and Mark Pickens. 2010. "*Branchless Banking 2010: Who's Served? At What Price? What's Next?*" Washington, D.C.: CGAP, September.

Mothobi, O. and Grzybowski, L. (2017) *Infrastructure deficiencies and adoption of mobile money in Sub-Saharan Africa*. *Information Economics and Policy* [Post-print], 40, pp. 71–79. Available from http://dx.doi.org/10.1016/j.infoecopol.2017.05.003.

Muthiora, Brian (2015). *Enabling Mobile Money Policies in Kenya: Fostering a Digital Financial Revolution*, The GSMA's Mobile Money for the Unbanked (MMU) Programme

Nab Owusu, Tina. (2017). *Factors influencing the usage of mobile money services in Ghana*. Turku School of Economics

National Bank of Ethiopia (NBE), (2017). Ethiopia: National Financial Inclusion Strategy. Addis Ababa.

National Bank of Ethiopia (NBE), 2021- *National digital payment service strategy* (NBE 2021-2024)

Okumus, B., Ali, F., Bilgihan, A. and Ozturk, A.B. (2018) Psychological factors influencing customers' acceptance of smartphone diet apps when ordering food at restaurants. International Journal of Hospitality Management [Post-print], 72, pp. 67–77. Available from http://dx.doi.org/10.1016/j.ijhm.2018.01.001.

Oliveira, T., Faria, M., Thomas, M. and Popovič, A. (2014). *Extending the understanding of mobile banking adoption: When UTAUT meets TTF and ITM*. International Journal of Information Management, Volume 34, pp. 689-703.

Palau-Saumell, R., Forgas-Coll, S., Sánchez-García, J. and Robres, E. (2019). User Acceptance of Mobile Apps for Restaurants: An Expanded and Extended UTAUT-2. Sustainability, 11(DOI 10.3390/su11041210), pp. 1-24.

Pallant, J. (2005). SPSS Survival Manual: A step by step guide to data analysis using SPSS for Windows. 2 ed. Sydney: Allen and Unwin.

Patel, K. J., Modi, P. M. and Kiri, R. D. (2019). Predicting Factors of E-Payment Adoption in India: The Customers' Perspective.: Multi-Disciplinary International Conference.

Qasim, H., & Abu-Shanab, E. (2016). Drivers of mobile payment acceptance: The impact of network externalities. Information Systems Frontiers, 18 (5),1021–1034.

Rest of world. Org [cited December 13, 2022] https://restofworld.org/2021/how-ethiopia-blundered-its-transition-to-mobile-money/

Samuel, D. (2019). Factors Influencing the Adoption of Mobile Banking Service: The Case of Selected Commercial Banks in Addis Ababa, Ethiopia, Addis Ababa: Addis Ababa University.

Sanjeewa, H.H.D. and Yatigammana, M.R.K.N. (2021) Factors Affecting Intention to use Mobile Money Service in Sri Lanka: Moderating Effect of Demographic Factors with reference to Western Province of Sri Lanka. Kelaniya Journal of Management [Post-print], 10 (2), pp. 147–171. Available from http://dx.doi.org/10.4038/kjm.v10i2.7696.

Saunders, M, Lewis, P, & Thornhill, A. (2012). Research Methods for Business Students‟‟‟6th edition, Pearson Education Limited

Scharwatt, Claire, Arunjay Katakam, Jennifer Frydrych, Alix Murphy, and Nika Naghavi (2014). *State of The Industry - Mobile Financial Services for The Unbanked:* Global System for Mobile Telecommunication Association (GSMA)

Stehlik-Barry, K. and Babinec, A. J. (2017). Data Analysis with IBM SPSS Statistics. 1st ed. Birmingham: Packt Publishing Ltd.

Tabachnick, B. G. and Fidell, L. S. (2013). Using Multivariate Statistics. 6th ed. California: Pearson Education, Inc.

Tekabe, S. and Gadise, G. (2016). Challenges and Opportunities of E-payment in Ethiopia Banking Industry: With the reference of private commercial banks. International Journal of Scientific and Research Publications, 6(8), pp. 502-509

Tesfaye, Yeshitla. (2019). Assessing Opportunities and Challenges of CBE–Birr Mobile Money Service: Case Study on Commercial Bank of Ethiopia. St. Mary's University

Tiwari, Prashant, Shiv Kant Tiwari and Ashish Gupta (2021). Examining the Impact of Customers' Awareness, Risk and Trust in M-Banking Adoption. Fortune Institute of International Business (FIIB) Business Review 10(4) 413–423, 2021

The Better Than Cash Alliance [updated 2002 May 16; cited December 13, 2022]. Available from: https://www.betterthancash.org/define-digital-payments

The World Bank Group (2016). Innovation in Electronic Payment Adoption: The case of Small Retailers, Washington DC: The World Bank Group.

Tobbin, P. E. (2010). Modeling Adoption of Mobile Money Transfer: A Consumer Behavior Analysis. Paper presented at the 2nd International Conference on Mobile Communication Technology for Development, Kampala, Uganda

UN-Habitat (2008) Available at: https://unhabitat.org/ethiopia-addis-ababa-urban-profile [Accessed December 15, 2022].

Venkatesh, V. and Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. Journal of Management Science, 46(2), p. 186–204.

Venkatesh, V., Morris, M., Davis, G. and Davis, F. (2003). User Acceptance of Information Technology: Towards a Unified View. MIS Quarterly, 27(3), pp. 425-478

Venkatesh, V., Thong, J. and Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. MIS Quarterly, 36(1), pp. 157-178.

Worku, G. (2010) "Electronic-Banking in Ethiopia- Practices, Opportunities and Challenges," *The Journal of Internet Banking and Commerce*, 15(2), pp. 1–8. Available at: https://www.icommercecentral.com/open-access/electronicbanking-in-ethiopia-practices-opportunities-and-challenges-1-8.pdf.

ANNEX I: SURVEY QUESTIONNAIRE
ADDIS ABABA UNIVERSITY, SCHOOL OF COMMERCE
DEPARTMENT OF MARKETING MANAGEMENT

Dear respondent,

This study is intended for partial fulfillment for an MA degree in Marketing Management at Addis Ababa University. The research focuses on factors affecting adoption of mobile money services in case of Telebirr, with specific focus in Addis Ababa. I assure you that your responses to this survey will be held confidential and all information will be used for this academic purpose only. I would like to thank you for your kind cooperation in advance. Please note that you are not required to write your name.

Muhammed Muhaba
Email: muhammed_muhaba@yahoo.com
Tel: 0911135580

Part I: Demographic data: please put a tick mark [✓] in the box of your choice

1. **Age (in years):** 18-25 ☐ 26 – 35 ☐ 36 – 45 ☐
   46 - 55 ☐ Above 55 ☐
2. **Gender:** Male ☐ Female ☐
3. **Occupation/work:** Unemployed ☐ Self-Employed ☐ Private org. employee ☐
   Government employee ☐ Other ☐
4. **Highest education level attained:** Primary/Elementary ☐ Secondary/TVET ☐
   BA/B.Sc. degree ☐ MA/M.Sc. degree ☐
   Above MA/M.Sc. ☐
5. **Monthly income (in Birr):** Up to 5,000 ☐ 5,001 - 10,000 ☐ 10,001 - 15,000 ☐
   15,001 - 20,000 ☐ Above 20,000 ☐
6. **How often do you use Telebirr service?** Always ☐ Often ☐ Sometimes ☐
   Rarely ☐ Never ☐

7. Which Telebirr services do you use? Tick all that apply

Send money ☐ Deposit cash ☐ Withdraw cash ☐ Buy airtime/package ☐

Receive payment ☐ Pay with Telebirr (For bills, merchant, utility, ticket, traffic penalty etc.) ☐

Financial services (Telebirr mela, sanduk and endekise) ☐ Other ☐

Note: In this survey, Tele-birr mean a digital money that enables you access a variety of financial services such as cash deposit and withdrawal, money transfer, online goods & services purchase, international remittance, telecom services purchase (airtime, package), credit services and many more.

Part II – Factors affecting adoption of Telebirr mobile money services

Please indicate the level of your agreement with the following statements by putting a tick ✓ mark under the dedicated answer. Which is labeled as 1. Strongly Disagree 2. Disagree 3. Neural 4. Agree 5. Strongly Agree

	Items	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
	Performance Expectancy					
1	I find Telebirr services useful in my day-to-day life.					
2	Using Telebirr services increases my productivity.					
3	Using Telebirr services increases my chances of achieving things.					
4	Using Telebirr helps me to accomplish things more quickly.					
	Effort Expectancy					
5	Learning how to use Telebirr is easy for me.					
6	My interaction with Telebirr system is clear and understandable.					
7	I find Telebirr easy to use.					
8	It is easy for me to become skillful at using Telebirr services					
	Social Influence					
9	People who are important to me (family/friends/relatives) think that I should use Telebirr services.					
10	People who influence my behavior think that I should use Telebirr services.					
11	People whose options I value prefer that I use Telebirr services.					
12	People who are important to me recommend me to use Telebirr services.					

	Items	1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	Facilitating conditions					
13	I have the necessary resources to use Telebirr services.					
14	I have the knowledge necessary to use Telebirr services.					
15	Telebirr services are compatible with other technologies I use.					
16	I can get help from others when I have difficulties using Telebirr services.					
	Perceived value					
17	Telebirr services are reasonably priced.					
18	Telebirr service is a good value for the money I pay.					
19	At the current price, Telebirr services provide a good value.					
20	I can save money when I use Telebirr services.					
	Perceived risk					
21	Using Telebirr services subject my Telebirr account to potential fraud					
22	I think using Telebirr services subject my Telebirr account to financial risk					
23	I think using Telebirr services puts my privacy at risk					
24	Hackers might take control of my account if I use Telebirr services					
	Perceived knowledge					
25	When needed, I will get enough guidance from the company related to Telebirr services					
26	I have received enough information about the benefits of using Telebirr services.					
27	In general, I know about Telebirr services					
	Adoption of mobile money service					
28	I intend to continue using Telebirr services in the future.					
29	I will always try to use Telebirr services in my daily life.					
30	I plan to continue to use Telebirr services frequently.					
31	I recommend others to use Telebirr systems.					

Thank you for your precious time!