SCHOOL OF JOURNALISM AND COMMUNICATION

MA PROGRAM IN PUBLIC RELATION AND STRATEGIC COMMUNICATION

TRENDS AND PRACTICES OF ETHIO TELECOM IN ITS INNOVATIVE APPROACH: ADOPTION AND DIFFUSION OF TELE-BIRR APP

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MAY 2024

ADDIS ABABA, ETHIOPIA

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MAY 2024

ADDIS ABABA, ETHIOPIA

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ACKNOWLEDGEMENTS

I am deeply grateful to the Almighty God for His guidance and support in all my activities. I would like to express my sincere gratitude to Dr. Anteneh Thegaye, research mentor, outstanding guidance support throughout study. His expertise and insights significantly elevated the quality of my research. I am also thankful to the participants who generously shared their views, helping us understand the factors affecting the adoption and spread of Tele-birr. Finally, I would like to thank my family and friends for their encouragement, which served as a source of inspiration during this research journey.

ABBREVIATIONS AND ACRONYMS

ADP	Adoption
ANOVA	Analysis of Variance
CIA	Central Intelligence Agency
C-TAM-TPB	Combined Technology Acceptance Model and Theory of Planned Behavior
DFS	Digital Financial Services
EE	Effort Expectancy
FC	Facilitating Conditions
FinTech	Financial Technology
GSMA	Global System for the Mobile Communication Association
IDT	Innovation Diffusion Theory
MFIs	Micro Finance Institutions
MM	Mobile Money
MNOs	Mobile Network Operators
MPCU	Model of PC use
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

This study investigates the determinants influencing the adoption and diffusion of mobile money services within the context of Tele-birr in Addis Ababa, utilizing a modified Unified Theory of Acceptance and Use of Technology (UTAUT2) model. The model incorporates perceived risk and knowledge, alongside traditional variables such as performance expectancy, effort expectancy, social influence, facilitating conditions, and perceived value. Data were collected from 385 participants using a 31-item survey and analyzed using Pearson correlation and regression analysis with SPSS version 26. Results indicate that perceived knowledge is the most significant predictor of Tele-birr adoption, with a beta value of 0.474. Performance expectancy, effort expectancy, social influence, and facilitating conditions also positively impact adoption, while perceived risk negatively influences it. These variables account for 89.1% of the variance in Tele-birr adoption. The study underscores the importance of user education and awareness campaigns to enhance adoption rates. Additionally, enhancing the user-friendliness of the Tele-birr platform and leveraging social influence can further promote its uptake. The complex relationship between adoption and diffusion is highlighted, suggesting that increased adoption leads to more rapid and widespread diffusion. The study recommends that Ethio Telecom and future providers enhance mobile money services by educating, introducing new features, leveraging social influence, and simplifying usage. Governmental support in terms of infrastructure and legal frameworks is also advised to foster the growth of mobile money systems.

Keywords: *Modified Unified Theory Of Acceptance And Use Of Technology (UTAUT2), Ethio Telecom, Adoption, Diffusion, Tele-Birr.*

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

The worldwide integration of telecommunications and financial services has paved the way for mobile commerce, especially mobile money services. These services provide users with flexibility in terms of time, convenience, speed, and cost efficiency (Maitai & Omwenga, 2016).

Mobile money is a financial service offered through mobile phones and is considered the most promising innovation for a cashless society. The story of African mobile money started in Kenya in 2007 with the launch of Safaricom's M-PESA peer-to-peer cash transfer system. M-PESA stands for "mobility" (M) and "money" (Pesa) in Swahili. Before this, transferring money to a family member was a significant challenge because of the high cost of banking services.

Ethiopia, Africa's second most populated country, has the lowest level of financial inclusion compared to other Sub-Saharan African countries. However, it has a rapidly increasing mobile penetration rate, which can be utilized as a tool for financial inclusion. The country's mobile money service, called M-Birr, was introduced in 2012 by five partnering Microfinance Institutions (MFIs) operating in Addis Ababa and four regional states, and it became operational in 2013 (Alemu et al., 2021). Following the introduction of M-Birr, Lion International Bank and Somali Microfinance Institution, in partnership with Bel Cash, launched a mobile money service called Hi Cash in February 2015. It offers deposits, withdrawals, transfers, and payments. The banks recruit, train, and authorize agents to provide mobile money services. In mid-December 2017, the CBE unveiled CBE-Birr, a mobile phone-based money transfer platform that gives customers the ability to deposit, withdraw, transfer, make payments, purchase mobile airtime, and pay bills using their phones (Alemu et al., 2021).

Until recently, Ethiopia's administrative system for advanced financial services was dominated by banks and microfinance institutions (MFIs). These institutions had exclusive rights to hold deposits, be licensed as payment service providers, and manage agent networks. This restricted Mobile Network Operators (MNOs) and Financial Technology (Fintech) companies from independently offering digital financial services. Recognizing the urgent need for change in Ethiopia, key players in the sector acknowledged the need to accommodate MNOs and Fintechs

for advanced financial support. To address this issue, Ethiopia enacted electronic transaction decree No. 1205/2020 to facilitate digital transactions. The issuance of the payment instrument issuers' mandate enables MNOs and financial institutions to serve as payment instrument guarantors. The Ethiopian government recognized the problem and took efforts to address it by creating new legislation that allows non-financial businesses, such as those in the telecom sector, to engage in digital financial services. As a result, Ethio Telecom launched a new mobile money service dubbed "tele-birr" in May 2021.

"Tele-birr enables individuals to deposit, lend, and transfer funds, as well as purchase airtime, settle taxes, and manage various utilities, all through their mobile numbers within regions serviced by mobile network connectivity". According to Ethio telecom's report on the first half of the 2014 Ethiopian fiscal year (2021/22), The expansion of mobile phone technology has significantly transformed individuals' daily lives and business practices. The ability to communicate from virtually anywhere has led to the development of numerous value-added services embraced worldwide. On behalf of numerous, this platform takes unlocked innovative avenues aimed at advertising, trade, and provided that services across various economic strata. The acceptance or rejection of technological innovations like mobile money services is influenced by several factors, with customer acceptance being pivotal to the success or failure of these services.

In Ethiopia, the financial system remains underdeveloped, with cash being the predominant method of transaction. According to a 2017 World Bank report, 98.7% of the mature populace in Ethiopia relied on money for payments. For an extended period, Banks and Microfinance Institutions (MFIs) have exerted control over the regulatory landscape of digital financial services, possessing exclusive rights for deposit storage, payment service regulation, and agent network operation. However, the National Bank of Ethiopia recently enlarged its authority to encompass the telecommunications sector. In response, Ethio Telecom introduced a mobile money service called "Tele-birr" on May 11, 2021. Through Tele-birr, users can conveniently deposit money, transfer funds to family and friends, purchase airtime for their mobile phones, and settle bills—all with the ease of their mobile devices. This service not only simplifies financial transactions but also reduces the need for physical cash, thereby enhancing security and efficiency in money management (ETC2022). As of May 2022, Ethio Telecom claimed providing 19.6 million Tele-birr customers out of 58 million mobile voice subscribers, or a

33.8% adoption rate. This data suggests significant potential for growth in Tele-birr's adoption rate.

The primary aim of this research be situated toward examine the influences manipulating the adoption of Tele-birr portable cash services. Despite numerous international studies on mobile money services, there is a notable lack of research focused on Tele-birr in Ethiopia.

1.2. Statement of the Problem

The advent of mobile phone technology has profoundly transformed individual lifestyles and business operations. The ability to communicate from virtually any location has revolutionized daily life and various business practices, leading to the widespread adoption of numerous value-added services globally. For many, this technology has opened new avenues to market, sell, and deliver services across different economic sectors. Customer acceptance is pivotal in determining the success or failure of technological innovations, such as mobile money services.

Despite global advances, Ethiopia's financial system remains underdeveloped, with financial transactions still heavily reliant on cash. According to a World Bank survey conducted in 2017, nearly all Ethiopian adults—approximately 98.7%—conduct transactions using cash. Until recently, Ethiopia's regulatory environment for digital financial services was primarily controlled by banks and microfinance institutions (MFIs), which held exclusive privileges such as deposit storage, regulation as payment service providers, and management of agent networks. Recognizing the need for modernization, the National Bank of Ethiopia has begun to allow telecom companies to participate in digital financial services.

In response to these developments, Ethio Telecom launched a new mobile money service called "Tele-birr" on May 11, 2021. Tele-birr enables users to purchase airtime, deposit, receive, and send money. As of the latest data, the total number of Ethio Telecom users has reached 60.8 million, a 20% increase compared to the previous fiscal year, with 58.7 million being mobile voice subscribers. However, as of May 2022, only 19.6 million out of the 58 million mobile voice subscribers are Tele-birr users. This indicates a need for adjustments to increase the adoption rate of Tele-birr relative to its potential.

Additionally, previous studies have shown inconsistent results regarding the factors influencing mobile money adoption. For instance, Tesfaye (2019) found a positive correlation between

perceived value and mobile money services, while Gebisa (2021) reported a negative correlation. This study seeks to address these gaps and discrepancies by examining the factors affecting the adoption and diffusion of the Tele-birr app in the Ethiopian market.

The objective of this study is to pinpoint the factors hindering the adoption and diffusion of the Tele-birr mobile money service to promote this innovative initiative. While there exists substantial international research on the factors influencing mobile money service adoption, a significant gap remains in Ethiopia, particularly concerning the Tele-birr service. Despite the global interest in mobile money services, there is a lack of comprehensive investigation into the specific dynamics of Tele-birr adoption within the Ethiopian context. Recognizing this research gap, the present study aims to explore and analyze the various factors that impact individuals' decision-making process in selecting Tele-birr as their preferred mobile money service. With a particular focus on Ethio Telecom's innovative strategies, this research seeks to shed light on the patterns and practices associated with the adoption of Tele-birr in Ethiopia.

1.3. Objectives

1.3.1. General Objective

- The general objective of this study is to examine the adoption and diffusion of the Tele-birr app, focusing on Ethio Telecom's innovative approach.

1.3.2. Specific Objective

- To find the key issues manipulating the adoption of the Tele-birr app by customers in the Ethiopian market.
- To assess how Ethio Telecom’s innovative approach contributes to the diffusion of the Tele-birr app.
- To evaluate the current trends in mobile payment adoption in Ethiopia and how the Tele-birr app aligns with or diverges from these trends.

1.4. Research Questions

Based on the topic "Trends and Practices of ethio telecom in its innovative approach: Adoption and Diffusion of the Tele birr App" here are some research questions that could guide the analysis:

1. What are the key factors influencing the adoption and diffusion of the Tele-birr app by customers in the Ethiopian market?

2. How does Ethio Telecom's innovative approach contribute to the diffusion of the Tele-birr app.?

3. What are the current trends in mobile payment adoption in Ethiopia, and how does the Tele-birr app align with or diverge from these trends?

1.5. Significance of the Study

The survey on the " Trends and Practices of ethio telecom in its innovative approach: Adoption and Diffusion of the Tele birr App" " holds importance in various key aspects:

1. Knowledge Contribution: This contributes to the current knowledge base regarding the adoption and spread of mobile payment systems within the Ethiopian telecommunications sector. providing insights into Ethio Telecom's strategies and practices in launching and promoting the Tele-birr app.

2. Practical Implications: The findings offer practical implications for Ethio Telecom and other telecom companies looking to implement innovative approaches in mobile payment services, guiding decision-making and strategy formulation.

3. Policy Recommendations: The study could inform policy recommendations to enhance the adoption and diffusion of mobile payment apps in Ethiopia, highlighting areas where government support or regulatory changes could facilitate growth.

4. Financial Inclusion: It underscores the role of the Tele-birr app in promoting financial inclusion and digital empowerment in Ethiopia, showing how mobile payment apps can help underserved populations access financial services and participate in the digital economy.

5. Academic Contribution: Scholarly, this study provides a valuable reference for academics, researchers, and students keen on telecommunications, mobile technology, and digital advancements, potentially stimulating additional exploration in associated disciplines.

1.6. Scope of the study

This study focuses on the trends and practices of Ethio Telecom in its innovative approach, highlighting adoption and diffusion of the tele-birr app. The variables studied were performance expectancy, effort expectancy, social influence, facilitating conditions, cost, perceived value, perceived opportunity, and perceived knowledge.

Due to practical limitations such as cost, time, and other constraints, the study is geographically confined to Addis Ababa, instead of encompassing Tele-birr users nationwide. The researcher adopts the Unified Theory of Acceptance and Use of Technology (UTAUT2) model, with minor modifications.

Based on the research study, the original UTAUT2 model has been updated to incorporate two new elements: In the scope of the study, the factors under investigation were performance expectancy, reflecting users' anticipated benefits from utilizing the technology; effort expectancy, which gauges the perceived ease of using the system; social influence, examining the impact of social networks on adoption decisions; facilitating conditions, encompassing the resources and support available to users; cost considerations; perceived value, indicating users' assessment of the benefits relative to the costs; perceived opportunity, reflecting the perceived advantages of adopting the technology; and perceived knowledge, capturing users' understanding of the system's functionalities and operations.

In lieu of hedonic incentive and habit, the study integrated perceived risk and perceived knowledge. This substitution stemmed from recognizing the paramount importance of addressing security apprehensions and enhancing user awareness during the nascent stages of technology adoption. In contrast, hedonic incentives and habitual behaviors are more salient in mature markets where users are accustomed to the technology and prioritize enjoyment and routine in their interactions.

1.7. Limitation of the study

1. This research encounters several unavoidable constraints, some of which are beyond the control of the investigator. Initially, the concepts employed in this finding were derived beginning the protracted Unified Theory of Acceptance and Use of Technology (UTAUT2). It is important to note that incorporating additional predictive variables from other models could produce different outcomes.

2. Additionally, the study's geographical scope is limited and may not fully represent all Tele-birr users across Ethiopia. While insights from Addis Ababa are valuable, there may be significant differences in usage patterns and acceptance in countryside and additional regions of the nation state.

3. The methodology employed for the test group was convenience non-probability sampling, meaning that not all individuals in the population had an equal likelihood of being selected for the sample. Therefore, it's crucial for researchers to acknowledge this limitation when interpreting the results.

1.8. Operational meaning

The definitions utilized in this study are as follows:

Mobile money: digital financial solution that leverages SIM card-based mobile phone technology. This encompasses a range of services, including mobile phone payments, microloans, remittance services, and online savings accounts, among others.

Tele-birr: A mobile financial platform enables users to securely store, receive, and transfer money using their mobile phones in areas with mobile network coverage.

Customer: An individual or business entity that purchases goods or services from another organization. In this research, the term “customer(s)” specifically refers to those who either intend to use Tele-birr services in the future or are currently using it and anticipate continuing or expanding their usage of these services.

Adoption: The process through which individuals start using a product. Here, it refers to how people become users of Tele-birr services.

Perceived Value (PV): plays a crucial role as an indicator for adopting mobile money services as defined by Venkatesh et al. (2012), perceived value refers to the cognitive tradeoff that consumers make between the perceived benefits of an application and the financial cost associated with using it. Essentially, it’s the balance between what users believe they gain from the service and what they invest (monetarily or otherwise) to access it.

1.9. Organization of the study

In the introductory chapter of a scholarly work, the essential components typically include the background of the study, the problem statement, research questions, aims, significance, scope, and limitations. These elements collectively provide a comprehensive overview of the research context, the specific issue being addressed, the objectives of the study, its significance in the broader context, as well as the boundaries and constraints within which the research is conducted.

The study's conceptual framework is explored in detail in the second chapter, which also includes a thorough overview of relevant theoretical and empirical research. The third chapter, which covers the investigation area, strategy and methodology, population and sample, data types and sources, data collection techniques, and ethical considerations, is entirely devoted to the approaches used throughout the study. After data collection, the fourth and fifth chapters will be published.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1. Overview

The theoretical ideas and experimental results pertaining to theories of technology adoption and portable cash services are covered in this part. These sources include books, journal articles, research proposals, websites, and other publications. An extensive analysis of pertinent theoretical and empirical literature was conducted in order to build the study's conceptual framework.

2.2. Portable Cash

2.2.1. Definition of Portable Cash

In the communication industry, portable currency stands out for its diverse range of uses. It is an electronic payment mechanism that provides a variety of financial services that are available through a mobile phone, according to Seize Owusu (2017). These days, the majority of mobile money providers allow users to remit money, pay bills, and acquire airtime. Mobile money functions as a digital wallet through an app loaded on a phone that is used when linked to online. Users are able to receive, store, and spend money because to technology.

According to the Global System for Mobile Communications Association, a service qualifies as mobile money if it: (1) facilitates payments and money transfers using a mobile phone to make transactions more convenient; (2) is accessible to individuals without formal financial accounts or who are unbanked; and (3) offers a network of physical transaction points, such as agents outside of ATMs and bank branches, to enable the unbanked to utilize the service (GSMA).

African countries have embraced digital money transfer technologies with remarkable success. The widespread adoption of mobile telephones in the region has led to impressive achievements, sometimes surpassing those of many first-world nations. Over a span of less than a decade, mobile phone usage has surged from less than 3% to a staggering 80%.

Various local mobile and e-payment systems have emerged, seizing the opportunity to revolutionize cross-continent money transactions. Notably, Kenya's M-Pesa, established in 2007, stands out. This platform allows clients to send and receive money via mobile phone and

currently manages over 25% of Kenya's Gross National Product (GNP), fostering consumer confidence in financial technologies. Sub-Saharan Africa is recognized for having the world's second-largest population of unbanked adults, estimated at around 350 million individuals, comprising 17% of the global total (GSMA).

2.2.2. The Concept of Mobile Managing an Account and Portable Cash

With its innovative approach to financial operations, mobile cash provides a handy pay-as-you-go solution for value storage and trade. The Financial Access Survey (IMF, 2023) by the International Monetary Fund describes how a network of mobile money agents facilitates mobile cash accounts, which are the foundation of this novel approach. In contrast to conventional banking practices, mobile cash uses the fundamental mobile phone infrastructure to offer financial services in place of a bank account.

This service functions as an independent financial instrument that is available to a broad spectrum of consumers and is usually provided by mobile network carriers or associated businesses. A simple cell phone is all that is needed to use mobile cash services, making it an accessible option even for those without access to traditional banking services.

On the opposite end of the spectrum, "mobile financial service" encompasses the utilization of mobile applications to access and execute banking operations, such as depositing checks, checking balances, and processing payments. Mobile banking is the expansion of standard banking services to mobile platforms, as opposed to mobile cash, which operates as a stand-alone financial business. Although mobile technology is utilized by both mobile cash and mobile banking, they address distinct facets of financial inclusion and service accessibility.

2.2.3. Portable Cash Improvement: Worldwide and African Drift

In 2011, 2.5 billion of the worldwide five billion humans had bank accounts, leaving the other half without access to formal financial services. Many economies had already incorporated measures to counteract financial exclusion into their growth goals by this stage. As a result, the number of adults lacking bank accounts decreased by 20% between 2011 and 2014, reaching a total of two billion (Coulibaly, 2020).

Mobile money services are now widely available, having reached 61% of developing nations worldwide. Over the previous five years, the availability of these services has significantly

increased, reaching areas including Africa, Asia, Latin America, Europe, and the Middle East (Scharwatt, Katakam, and Frydrych, 2014). Specifically, in 2021,

Approximately 1.35 billion mobile money account applications were made, a staggering tenfold rise from the 134 million accounts reported in 2012. The pattern of new registrations growing annually persists, defying early forecasts of a reduction (Awanis et al., 2022). This extraordinary rise demonstrates the continued significance and rising acceptance of mobile cash services as an essential instrument for advancing financial inclusion on a worldwide scale.

The introduction of mobile financial services has been essential in advancing financial inclusion in Africa, Lema (2017) proposes an innovative approach to providing financial services to the unbanked people. This revolutionary movement is changing the financial scene and offering a significant chance to subvert the banks' long-standing hegemony. Thanks to the development of digital banking solutions and mobile money platforms, millions of people who were previously unreached now have access to basic financial services like credit, savings, and payments. Most people who live in poverty around the world do not have accounts with traditional financial institutions, according to data from the World Bank's Global Findex database. This is brought on not just by their financial situation but also by real-world obstacles such as savings, payments, and credit.

Most people who live in poverty around the world do not have accounts with traditional financial institutions, according to data from the World Bank's Global Findex database. This is caused not only by their financial situation but also by real-world obstacles like travel and the paperwork needed to open accounts. These obstacles draw attention to the need of mobile financial services, which let people obtain financial services with little paperwork requirements straight from their mobile devices.

In contrast to other continents such as Asia, financial exclusion is a particularly serious problem in Africa. Even while adults of African descent frequently borrow and save informally, many still lack access to official banking services. It is projected that fewer than 25% of Adults in Africa have official financial institution accounts.

Comparing this to Asia, where 25% of low-income households have access to financial services, shows that the two regions' attempts to promote financial inclusion are very different from one another. In Africa, the rise of mobile banking services provide a viable way to close

this gap. These services, which make use of mobile technology, have the ability to reach millions of unbanked people and give them the tools they need to enhance their lives and fully engage in the formal economy.

Mobile phones have been more popular in Sub-Saharan Africa as a way to provide financial services to people who cannot visit traditional bank locations. This strategy seeks to give unbanked people access to financial services in order to address their varied requirements. The Philippines and Kenya were the pioneers in the worldwide introduction of mobile banking services. Telecom companies' 2007 rollout of M-PESA was essential in this development.

Presently, M-PESA, Airtel Money, Orange Money, and Yu Cash are some of the available mobile money services. As of 2010, M-PESA has over 12.6 million registered users, making it the most popular service (Maitai and Omwenga, 2016). Kenya's telecommunications industry has grown quickly, faced intense rivalry, and embraced innovation, making it one of the country's most dynamic sectors.

Mobile phones have emerged as an essential instrument in Sub-Saharan Africa for reaching previously marginalized people with banking services. The emergence of mobile banking, spearheaded by Kenya and the Philippines, particularly via M-PESA networks, has completely transformed the financial scene. According to Maitai and Omwenga (2016), these services have not only increased the accessibility of financial services but have also sparked competition and innovation in the telecoms industry, which has led to notable growth and advantages for customers.

2.2.4. Portable Cash Benefit in Ethiopia

Ethiopia is still having difficulties in this area, even though digital financial services have significantly increased financial inclusion in a number of sub-Saharan African nations. In Ethiopia, only 12% of adults utilize electronic payment methods, such as mobile money and ATMs, suggesting a relatively underdeveloped landscape for digital financial services. Several factors contribute to this situation, including regulatory hurdles imposed by the National Bank of Ethiopia, limited internet and mobile phone penetration, inadequate banking infrastructure, and a lack of awareness and trust in digital financial services. Ethiopia differs from neighbors in the region in that it has adopted digital financial services more slowly. Regulatory obstacles have also slowed the expansion of digital financial services in Ethiopia. National Bank

Ethiopia's (NBE) has imposed harsh controls on mobile money services, limiting the ability of telecom firms and other financial service providers to operate. This has inhibited innovation and made it more difficult to build new, more approachable financial solutions that meet the demands of the Ethiopian populace. Expanding digital financial services is made more difficult by Ethiopia's low internet and mobile phone penetration rates. Mobile banking and other digital financial platforms are limited in their reach by the absence of smartphones and mobile internet, particularly in rural areas with inadequate infrastructure.

Ethiopia has been sluggish to adopt and promote digital financial services as a way to improve financial inclusion, in contrast to its neighbors. Ethiopia's development in using technology to provide access to financial services has been hampered by a mix of socioeconomic, regulatory, and infrastructure issues, although other countries in the region have made notable strides in this area (NBE, 2017).

In 2017, the Ethiopian government started to realize the importance of financial inclusion. This became evident with the creation of the National Committee for Financial Inclusion and the introduction of the first National Financial Inclusion Strategy. Despite the widespread availability of financial services, only a small fraction of the population utilizes digital channels. For example, in 2019–20, only 15.8% of adults possessed a mobile money account. Surprisingly, in 2017, a staggering 98.7% of adult consumers still paid their utility bills with cash.

When it comes to getting wages, collecting government payments, and paying utility bills with cash rather than formal financial services, Ethiopia differs dramatically from the sub-Saharan African standard (Alemu, et al., 2021).

There are a number of reasons why financial inclusion in Ethiopia has not been acknowledged and addressed sooner. Prioritizing other development objectives in the past, the Ethiopian government showed little interest in or funding for this field. Furthermore, with traditional banking infrastructure controlling the financial landscape, the nation's banking sector mostly depends on cash transactions. These infrastructural and cultural limitations have hindered the adoption of digital financial services. Furthermore, the Ethiopian populace lacks knowledge of and confidence in formal financial services. Many people, especially those living in rural areas, may prefer cash because they think it's more straightforward and dependable than digital

banking and mobile money services. Further impeding the process are worries regarding the security and privacy of digital financial transactions.

Ethiopia's regulatory environment has posed challenges to the expansion of digital financial services. The development and innovation of digital financial systems, such as mobile money, have been impeded by the stringent regulations enforced by the National Bank of Ethiopia (NBE). These rules have reduced competition and erected obstacles for prospective competitors looking to enter the sector. Positive developments do, however, point to the nation's improvement. Ethiopia is increasingly acknowledging the importance of financial inclusion, evident in initiatives such as establishing the National Committee for Financial Inclusion and implementing the National Financial Inclusion Strategy. However, to overcome the obstacles hindering widespread adoption of digital financial services and facilitate the shift towards formal financial inclusion, concerted efforts are required. This entails addressing various challenges.

Alemu et al. (2021) suggest that increasing awareness and education, improving digital infrastructure, and revising regulatory frameworks can promote increased innovation and competition in the financial sector.

M-Birr, a prominent participant in the industry, has experienced remarkable growth in popularity since its launch in 2015. With around 7,000 M-Birr stations throughout the country and a network of over 1.2 million customers, consumers may easily make deposits and use the service for a variety of daily transactions, including buying groceries and gas. M-Birr is not the only supplier in the market, though. The Commercial Bank of Ethiopia offers a similar mobile money service known as CBE Birr, while Hi Cash presents another alternative (Euractiv.com, 2018).

M-Birr's popularity can be ascribed to its accessibility and convenience. M-Birr has made banking services more accessible and convenient by allowing customers to make financial transactions through their mobile phones. This is especially useful for people living in remote areas with limited access to traditional bank facilities. Users can deposit and withdraw money with ease thanks to the wide network of M-Birr locations, even in isolated places with limited access to traditional banking facilities.

The rivalry between mobile money providers is encouraging innovation and improving user services. To draw and keep consumers, every supplier works to broaden its network, improve security protocols, and roll out cutting-edge technologies. As a result, Ethiopian customers can now choose the supplier of their mobile money services from a wide range of possibilities that most closely fits their needs. The introduction of mobile money services like Hi Cash, CBE Birr, and M-Birr has changed how Ethiopians access and use financial services. These services not only make banking more accessible, but they also encourage financial inclusion and national economic growth (Euractiv.com, 2018).

2.2.5. EthioTelecom and TeleBirr

EthioTelecom: formerly known as the Ethiopian Telecommunications Corporation, is the state-owned telecommunications service provider in Ethiopia. Established in 2010 following a rebranding initiative, EthioTelecom has maintained a monopoly over the Ethiopian telecommunications sector, making it one of the largest telecommunication companies in Africa. EthioTelecom provides a wide array of services including fixed-line and mobile telephony, internet, and data services.

The company's monopoly has been a double-edged sword. On one hand, it has facilitated the widespread expansion of basic telecommunication infrastructure across the country. On the other hand, the lack of competition has often been cited as a reason for subpar service quality and high costs (Solomon, 2021). EthioTelecom has been crucial in driving connectivity and digital inclusion in Ethiopia, but the sector has lagged behind global standards in terms of innovation and efficiency due to its monopolistic nature (Wondwossen, 2020).

In response to these challenges, the Ethiopian government has initiated reforms aimed at liberalizing the telecommunications sector. These reforms include plans to partially privatize EthioTelecom and issue additional telecom licenses to foreign operators. This move is expected to stimulate competition, improve service delivery, and foster technological advancements within the sector (Solomon, 2021).

TeleBirr: TeleBirr, launched in May 2021, is EthioTelecom's mobile money service designed to enhance financial inclusion in Ethiopia. The platform allows users to perform a variety of financial transactions, such as money transfers, bill payments, and mobile banking, directly from their mobile phones. This service is particularly significant in a country where a large

portion of the population remains unbanked and has limited access to traditional banking services (Mulugeta, 2022).

TeleBirr quickly gained popularity, with millions of users registering within the first few months of its launch. The service's rapid adoption can be attributed to its user-friendly interface, extensive network coverage, and the trust associated with the EthioTelecom brand (Kebede, 2021). Additionally, TeleBirr leverages EthioTelecom's vast infrastructure, ensuring that even those in remote areas can access mobile financial services.

The introduction of TeleBirr marks a significant milestone in Ethiopia's fintech landscape. It has the potential to transform the country's economic framework by facilitating digital payments and reducing the reliance on cash transactions. Moreover, TeleBirr is poised to play a crucial role in driving economic growth by making financial services more accessible to the broader population, thus promoting financial inclusion (Mulugeta, 2022).

2.3. Theoretical Frameworks

2.3.1. Innovation Appropriation Models and Speculations

Various models have been employed to explore technology adoption and concepts, particularly concerning mobile banking and financial services. These frameworks provide insightful information on the variables that affect people's decisions to accept or reject new technology. Prominent models used in exploring technology adoption and acceptance include the Unified Theory of Use and Acceptance of Technology (UTAUT) (Venkatesh & Davis, 2000), the Extended Unified Theory of Acceptance and Use of Technology (Venkatesh, Thong, & Xu, 2012), Roger's Diffusion of Innovations (1992), and the Technology Acceptance Model (TAM) (Davis, 1989).

The Unified Theory of Acceptance and Use of Technology (UTAUT) identify four key factors that influence an individual's intention to use a technology: performance expectancy, effort expectancy, social influence, and facilitating conditions. While effort expectancy is related to how easy a person believes a technology will be to use, performance expectancy is an individual's confidence in the technology's ability to improve task performance. While enabling factors relate to the availability of resources and support for technology usage, social influence takes into account the influence of peer pressure and social norms (Venkatesh & Davis, 2000).

The Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) expands upon the original UTAUT model by incorporating additional characteristics such as age, gender, experience, and voluntariness of use. By taking individual characteristics and contextual aspects into consideration, this extended model provides a more thorough explanation of technology adoption (Venkatesh, Thong, J., & Xu, 2012). The Technology Acceptance Model (TAM), developed by Davis in 1989, primarily focuses on two key factors: perceived utility and perceived ease of use.

The Technology Acceptance Model (TAM) states that people are more likely to adopt a technology if they believe it will help them achieve their goals and if they find it easy to use (Davis, 1989). Conversely, the 1992 introduction of Roger's diffusion of innovations theory emphasizes the importance of social networks and routes for communication when implementing new technology. According to this theory, the characteristics of the innovation, the communication channels used to spread information about it, the social structure in which it is adopted, and the amount of time it takes for people to adopt it all have an impact on the adoption rate (Rogers, 1992).

Collectively, these models and theories offer important insights into the factors that affect the adoption and acceptance of mobile financial services and banking. Policymakers and industry stakeholders can improve financial inclusion and promote the use of these technologies by understanding these variables and developing policies accordingly (Davis, 1989; Venkatesh & Davis, 2000; Venkatesh, Thong, J., & Xu, 2012; Rogers, 1992).

2.3.2. Innovation Acknowledgment Demonstrate

Building on the Theory of Reasoned Action, Davis and Fred D. developed the Technology Acceptance Model (TAM) in 1989. Their goal was to understand the variables that influence people's decisions to accept or reject information technology. According to Davis (1989), the two most important personal perceptions about technology are its perceived utility and perceived ease of use. According to Al-Tarawneh (2019), perceived usefulness (PU) is the conviction that using a particular system would improve an individual's performance at work. To put it another way, it has to do with how much a person believes a specific piece of technology will help them complete their work more quickly and successfully. Numerous elements, such as the technology's functioning and importance to the user, affect this

perspective tasks and the anticipated results of applying it. A person's likelihood of adopting a technology is primarily influenced by its perceived usefulness. People are more inclined to accept a technology if they believe it will improve their capacity to perform their jobs and result in tangible benefits. However, people are less likely to adopt technology if they believe it is superfluous or unrelated to their tasks. Another important component of the Technology Acceptance Model (TAM) is ease of use, which measures how much people think utilizing a technology will take little work. It takes into account elements including the technology's simplicity of use, complexity, and user interface. Because it lowers perceived adoption barriers and motivates users to experiment and incorporate it into their workflow, technology that is viewed as being simple to use is more likely to be adopted. In conclusion, the TAM's core tenets of perceived utility and ease of use are what shape people's attitudes and intentions around utilizing information technology.

Researchers and practitioners can create and apply technologies that have a higher chance of being adopted and used by their intended users by understanding these ideas (Davis, 1989; Al-Tarawneh, 2019). The notion of perceived usefulness is derived from the expectancy-value model within the Theory of Reasoned Action. According to this paradigm, people's perceptions about the repercussions of their acts and the weight they give those consequences determine their attitudes and intents. In other words, perceived usefulness (PU) is the degree to which individuals believe that using a particular technology will yield positive outcomes and enhance their ability to perform tasks efficiently. Conversely, perceived ease of use (PEOU) refers to "the degree to which a person feels that utilizing a specific system would be simple" (Al-Tarawneh, 2019).

This aspect of the expectancy-value model of the Theory of Reasoned Action focuses on how easy and convenient people believe the technology to be to use. A high PEOU indicates that people think the technology is easy to use and doesn't take much effort to operate.

Perceived utility and perceived usability taken together have an effect on people's behavioral intentions (BI) and real behavior. According to the Theory of Reasoned Action, people are more likely to plan to use a technology if they believe it to be practical and user-friendly. In turn, these behavioral intentions are strong indicators of the conduct that will really occur. Perceived usefulness (PU), according to research, is frequently the most reliable indicator of a person's intention to use information technology (Al-Tarawneh, 2019). Numerous research have

confirmed this conclusion, which has led to the Technology Acceptance Model (TAM) being regarded as one of the most popular and widely adopted models in the field of technology acceptance. Davis created the Technology Acceptance Model (TAM) in 1989, expanding on the ideas. Considering people's acceptance of new technology in terms of perceived utility and perceived ease of use. It makes the argument that these two crucial elements have an impact on people's attitudes and intentions regarding adopting technology. Designers and developers can produce technologies that have a higher chance of being adopted and utilized by their intended audience by comprehending and addressing users' opinions of its usefulness and simplicity of use (Al-Tarawneh, 2019).

2.3.3. Diffusion of Innovation (DOI) &Hypothesis

Rogers needed to know how society accepts or rejects innovation, so he developed the Dissemination of Development Hypothesis (DOI) in 1962. This theory, which has been used by researchers in many fields to evaluate how innovations propagate within social systems, is considered one of the most influential theories in sociology (Rogers, 2003). Rogers (2003) defines dissemination as the process by which an innovation is communicated to members of the social system through specific channels over time (Al-Tarawneh, 2019). Five perceived attributes of an innovation, as determined by the DOI, can be utilized to forecast its adoption. According to Rogers (2003), these factors can explain 49-87% of the variation in the rate at which innovations are adopted. The first factor is relative advantage, which is the extent to which an innovation is perceived as being better than the one it replaces. The second factor is compatibility, referring to how well an innovation is perceived to align with the needs, values, and experiences of potential users.

Complication, or the perceived difficulty in comprehending and applying an idea, is the third feature. Trial ability, or the degree to which the fourth perceived attribute is the ability to test an idea before it is fully embraced. The last feature is observability, or the degree to which the technological results are apparent. Although they are different from one another, these five traits are connected (Al-Tarawneh 2019).

2. 3.4. Unified Theory of Acceptance and Use of Technology (UTAUT)

Despite the presence of numerous models created by researchers globally to evaluate how individuals perceive and use technology, Venkatesh, Morris, Davis, G., and Davis, F. (2003)

introduced a more inclusive framework known as the Unified Theory of Acceptance and Use of Technology (UTAUT).This model aimed to integrate the key concepts from previous models and theories of technology acceptance. The UTAUT incorporates four fundamental constructs that elucidate the factors influencing user behavior, specifically their intention to embrace and use a specific technology. These constructs include perceived performance expectations, ease of use, social influence, and facilitating conditions. Furthermore, Venkatesh et al. (2003) extended the model by integrating additional factors such as gender, age, experience, and voluntariness of use, with comprehensive explanations provided in their research (Venkatesh et al., 2003; Dwivedi et al., 2017).

Performance Expectancy refers to the belief that using a technology will help individuals achieve their goals and enhance their performance. Effort Expectancy, on the other hand, relates to how easy it is perceived to use the technology. Social Influence captures the impact of social factors like norms and peer influence on an individual's intention to use the technology. Facilitating Conditions encompass the resources and support available for effectively using the technology. Following initial validation, the UTAUT model has been widely utilized in empirical research, confirming its validity. According to Venkatesh et al. (2003), the first three constructs directly predict usage intention and behavior, while the fourth construct directly influences usage behavior.

This model has offered a thorough understanding of the factors that influence the acceptance and usage of technology, providing valuable insights for researchers, practitioners, and policymakers alike. Performance Expectancy refers to how much individuals believe that using a specific technology will help them achieve their goals and improve their performance. Conversely, Effort Expectancy reflects the perceived ease of using the technology. Social Influence encompasses the influence of social factors, such as norms and peer pressure, on an individual's decision to adopt the technology. Finally, Facilitating Conditions include the resources and support available to individuals for effectively utilizing the technology.

Following validation, the UTAUT model has been applied in numerous empirical studies, confirming its reliability. According to Venkatesh et al. (2003), the first three constructs predict usage, intention, and behavior, while the fourth construct directly influences usage behavior.This model has provided a comprehensive comprehension of the factors that influence technology acceptance and usage behavior, offering valuable insights for researchers,

practitioners, and policymakers. By considering these factors, organizations can design and implement technologies that are more likely to be accepted and used by their target users, ultimately leading to improved outcomes and performance (Venkatesh, et al., 2003; Dwivedi, et al., 2017).s, organizations can design and implement technologies that are more likely to be accepted and used by their target users, ultimately leading to improved outcomes and performance (Venkatesh, et al., 2003; Dwivedi, et al., 2017).

2.3.5. Extended Bound together Hypothesis of Acknowledgment and Utilize of Innovation (UTAUT2)

The UTAUT model, developed approximately nine years ago, has been enhanced by Venkatesh and his colleagues through the incorporation of three new constructs in the UTAUT2 model. These elements include hedonic motivation, perceived value, and habitual usage. Whereas the original UTAUT model centered on organizational contexts and effectively accounted for a significant proportion of the variance in behavioral intention and technology adoption, the UTAUT2 model places greater emphasis on the viewpoint of users rather than internal personnel within an organization (Venkatesh et al., 2012).

The UTAUT2 framework also referred to as the Enhanced Unified Theory of Acceptance and Use of Technology, expands upon the groundwork established by UTAUT by incorporating additional factors that enhance our understanding of technology acceptance and usage behavior. Hedonic motivation recognizes that individuals derive pleasure and enjoyment from using technology, beyond its practical purposes. It acknowledges the emotional aspect of technology adoption, as individuals may be motivated to use a technology simply because it is fun or enjoyable.

Price value, on the other hand, takes into account individuals' perceptions of the benefits they receive from using a technology in relation to the costs associated with its use. This construct acknowledges that individuals consider both the perceived benefits and the financial costs when making decisions about adopting a technology.

Lastly, habit refers to the automatic or routine behaviors individuals develop in relation to technology use. It acknowledges that repeated use of a technology can lead to habitual behavior, where individuals use the technology without consciously thinking about it.

Overall, the UTAUT2 model provides a more comprehensive understanding of technology acceptance and usage behavior by incorporating these additional constructs.The UTAUT2 model places greater emphasis on the user's perspective, recognizing the importance of individual beliefs, motivations, and behaviors in shaping technology acceptance and usage. By incorporating these additional constructs, UTAUT2 provides a more comprehensive understanding of the factors influencing technology adoption.

In general, both the UTAUT and UTAUT2 frameworks have made significant contributions to our understanding of how people adopt and use technology, offering valuable insights for researchers, practitioners, and policymakers alike. These models assist organizations in developing and implementing technologies that are more likely to be embraced and utilized by their target users, thereby enhancing overall performance and outcomes (Venkatesh et al., 2012). The use of these models in this analysis is favored due to their predictive power, comprehensive nature, and ability to encompass essential elements. A visual representation of the expanded UTAUT model is provided below.

2.4. Empirical Review

This section contains observationally established components that influence the selection of mobile financial services. Therefore, this study focused on examining the determinants of mobile money service adoption. Numerous studies have been conducted to explore the factors influencing the adoption of mobile money services in both developed and developing countries. In terms of the observational models, researchers in the past have extensively studied the method of evaluating the adoption of innovations.

Given the amount of empirical literature available on this research topic, it would have been quite challenging to summarize the results of all the studies. In a 2017 study conducted by Lema in Tanzania on mobile financial services, it was found that the adoption of these services among the unbanked population is influenced by factors such as social influence, perceived convenience, and perceived cost. Another study was also conducted in Nigeria by Ezeh and Nwankwo (2018) on factors that influence the acceptance of mobile money.

This study suggests that consumers' acceptance of mobile money is primarily influenced by three factors: perceived ease of use, perceived financial cost, and the level of information or awareness. Anthony & Mutalemwa (2014) conducted research in Tanzania, finding that ease of

use significantly influences the adoption of mobile payment services. In Sri Lanka, research by Sanjeewa & Yatigammana (2021) indicated that perceived convenience, awareness, and perceived knowledge positively impact the adoption of mobile money services, while perceived risk negatively affects adoption.Upon entering Ethiopia, Yeshitla (2019) conducted studies on the opportunities and challenges of the CBE-Birr mobile money service, revealing a positive correlation between ease of use, perceived convenience, perceived opportunity, and adoption of mobile money services.

Another study by Wenda (2017) focused on the factors influencing customers' adoption of web banking. This study integrated the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB), incorporating perceived convenience, perceived ease of use, perceived risk, prior web knowledge, intention to use, and convenience into the existing models. The findings indicated that perceived convenience, perceived ease of use, perceived risk, prior web knowledge, intention to use, and convenience all have a direct or indirect impact on consumer adoption of digital money services. The literature review highlighted the significance of awareness, perceived value, perceived ease of use, prior knowledge, and perceived risk in influencing the adoption and diffusion of digital payment systems. These insights provide a solid basis for the current study, which seeks to investigate the factors influencing the adoption of tele-birr services.

2.5. Conceptual Framework of the Study

The conceptual framework depicts the relationships between independent and dependent variables. Drawing from analyses of diverse theories and studies on factors influencing the adoption of mobile money services globally and in Ethiopia, the researcher sought to identify critical variables influencing the adoption of tele-birr mobile money services in Addis Ababa, Ethiopia. This framework illustrates how these key variables influence the adoption of tele-birr. Independent factors such as awareness, perceived value, perceived ease of use, prior knowledge, and perceived risk affect the adoption of tele-birr mobile money services. Based on this analysis, the following conceptual framework is formulated.

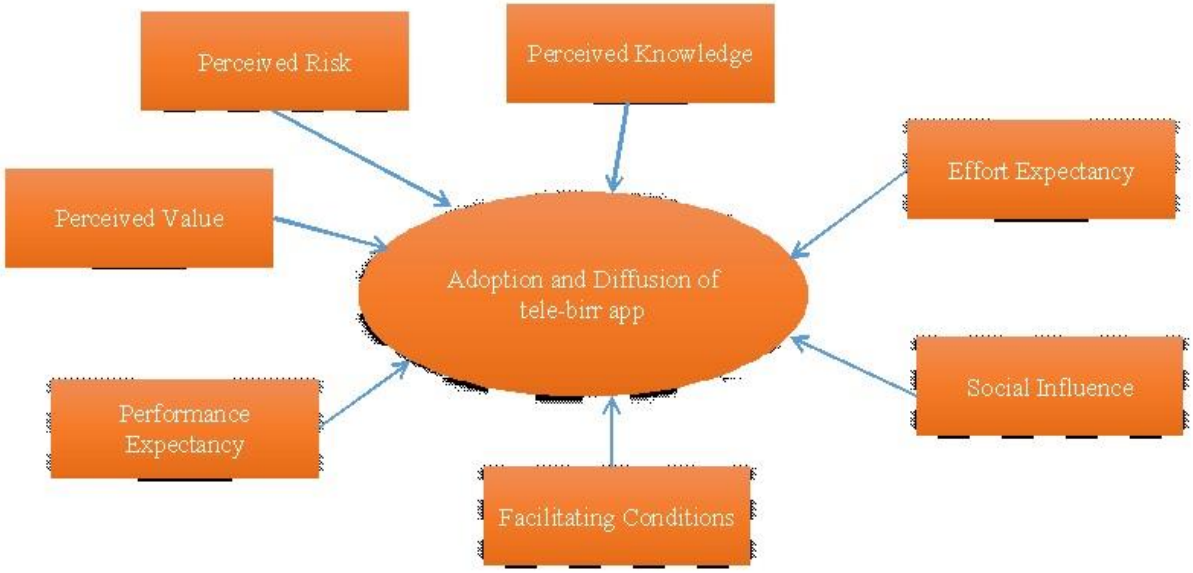


Figure 1conceptual framework of the study

The study's conceptual framework was taken from (Yifred, 2017) and (Wenda, 2017).

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

This chapter covers in detail every facet of the research methodologies, research design, demographics and sample, data sources and types, data collection process, ethical considerations, and data analysis techniques employed in the study.

3.2. Study Area

Data for the study came from Addis Ababa residents who used the Tele-birr mobile money service. Thirty percent of Ethiopia's urban population lives in Addis Ababa, the city and center of African diplomacy. It is among the fastest-growing cities on the continent, with its population nearly doubling every decade to approximately five million (CIA, 2022). Due to its strategic location, political significance, and economic status, individuals from various parts of the country flock to the city in pursuit of job opportunities and essential services (UNHABITAT, 2008).

3.3. Study Approach

The study employed a quantitative research methodology, which involved collecting data and converting it into numerical form for statistical analysis and drawing conclusions. Assessing behaviors, attitudes, beliefs, and other specific qualities in a larger sample size is a popular application of this approach. The researcher has developed seven hypotheses based on the Unified Theory of Acceptance and Use of Technology model to confirm that the constructions agree with the model. The concepts and theories explored in this research are deduced from the established UTAUT2 model, with scholars such as Chen, Y., and Chang, C. (2012) endorsing it as a significant predictor of the model.

The researcher suggests replacing hedonic motivation and habit, two components of the UTAUT2 model, with perceived risk and perceived knowledge. Concerns regarding security and privacy are prioritized over enjoyment and habit, especially in the initial stages of technology adoption, particularly in financial transactions (Palau-Saumell, 2019).

3.4. Study Design

This study used both explanatory and descriptive research designs. Based on Likert scale surveys designed for constructs, the descriptive statistics were utilized to highlight the respondents' demographic profiles and opinions about using mobile money. To make any logical relationships between the variables more clear, an explanatory design was also used. According to Carl McDaniel (2010), p. 67, explanatory studies are designed to quantify the effect of predictor factors on the dependent variable and to establish correlations between variables. They look at how the values of different variables are correlated. As a result, the researcher will closely investigate the relationships between and effects of the independent variables of perceived risk and knowledge, social influence, enabling factors, performance expectancy, effort expectancy, and the tele-birr mobile money service adoption dependent variable.

3.5. Study Population

The study focused on the demographic of Addis Ababa residents who are considered current or potential users of tele-birr services. According to the Central Intelligence Agency, the population of Addis Ababa in 2022 is projected to be 5.228 million, with over 40% of the population being under the age of fifteen. Out of the total population, approximately 2.0912 million individuals in Addis Ababa are below the age of fifteen. Hence, after excluding those under fifteen who are ineligible to have an account with a financial institution or a mobile money service provider, the target population for this study was 3.1368 million.

3.6. Sampling Techniques

It is often impractical to obtain data from every study target during research. Instead, the researcher must carefully choose a sample that they believe accurately represents the total population. There are two primary types of sampling methods: probability sampling and non-probability sampling. In this particular study, non-probability sampling is used due to the challenge of accurately estimating the likelihood of selecting every respondent in the population for the sample. Nonprobability sampling is commonly employed in small-scale investigations and individual research projects due to its relative advantages in terms of time and cost (Kothari, 2004). Among the subcategories of non-probability sampling, convenience sampling was chosen. Convenience sampling is frequently utilized when selecting a sample would be

time-consuming or require significant resources. The conditions of the study include little change in the population, a high number of prospective samples to select from, and challenges in identifying individual instances (Saunders, et al., 2012, p. 291).

3.7. Sampling Procedures and Sample Sizes

As previously stated in the target population section, the eligible population of the capital city, excluding the underage category, is 3,136,800. This demographic can have accounts with financial institutions and mobile money providers. Assuming that they may use tele-birr services, the sample frame consists of 3,136,800 out of the total population. Bill Godden's sampling formula was used by the researcher to select a sample, given the study's huge population. When the population is larger than 50,000 or the sample size is infinite, the following criteria were used in the sample selection procedure (Tekabe and Gadise, 2016). Additionally, the study's sample came from high-end retailers situated in each of Ethio-telecom's market sectors (zones) in Addis Ababa, Ethiopia. The north, east, and center are some of these zones. Addis Ababa's southwest, west, and south areas. Each zone had one chosen store, and those chosen stores were equally given the questionnaire.

$n = Z\ 2{*}p{*}q\ e\ 2$

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

Using the formula, n = 1.962 ∗0.5∗0.5 0.052, the approximate sample size is 385.

Where; z= 1.96, p=0.5, and e= 0.05

Therefore, the new sample size is n = 385.

3.8. Data Collection Procedures

A survey questionnaire was divided into two parts. The first segment collected demographic information from respondents, while the second section included 31 items designed to gain insights investigate the elements that influence the use of tele-birr services. The survey instruments for this study were derived from the works of P. Tiwari, S. Tiwari, and Gupta

(2021), as well as Venkatesh et al. (2012). Venkatesh et al. (2012) identified five constructs: performance expectancy, effort expectancy, social influence, facilitating conditions, and mobile money adoption. Tiwari et al. (2021) contributed items for the final two constructs, perceived risk and perceived knowledge. Respondents were promptly contacted during the questionnaire distribution, with adequate time provided to ensure they did not feel rushed in their responses.

3.9. Data Analysis

In this study, the researcher utilized quantitative techniques for data analysis. To carry out this analysis, the researcher employed the Statistical Package for Social Sciences (SPSS) version 26, a widely used data analysis application in social and business studies. The respondents' demographic profiles and survey results were thoroughly studied, documented, and presented using descriptive analysis approaches that included tables, figures, and other visual aids.

Additionally, inferential analytical methods such as multiple regression analysis and Pearson's correlation coefficient were applied to assess the influence of independent variables on the dependent variable of the study, as well as to examine the relationship between variables.

3.10. Validity and Reliability

3.10.1. Validity Test

According to Saunders et al. (2009), validity pertains to the extent to which a questionnaire accurately measures what it intends to assess. The measurement items for the variables selected in this study were adapted from validated studies conducted by Venkatesh et al. (2012), and additional research in a related domain has affirmed that the measurement items of the UTAUT2 construct reliably predict people's behavior regarding technology acceptance. Numerous prior researches have emphasized the model's ability to successfully evaluate its goal, exhibiting both content and construct validity after extensive validation. Prior to distributing the questionnaires to participants, a pilot study involving 20 respondents was conducted to verify the validity and reliability of the instrument. The goal of the pilot test was to guarantee that any necessary changes to the measuring items for this specific study did not result in differences in their interpretation.

3.10.2. Reliability Test

The reliability of data collection and analysis pertains to the capacity of a method or technique to produce consistent outcomes when carried out by a different researcher (Saunders et al. 2009). Cronbach's alpha serves as a widely employed measure for evaluating the reliability of survey items; an alpha coefficient of 0.7 or above signifies a satisfactory level of reliability. All constructs examined in the study exhibit Cronbach's alpha values surpassing the threshold of 0.7, as determined through statistical analyses conducted using the SPSS software. This suggests that the findings of the survey are dependable for further research endeavors.

Table 1 ***Summary of Cronbach's alpha values***

Constructs	**Cronbach's Alpha**	**No. of Items**
Performance Expectation (PE)	0.811	4
Expected Effort (EE)	0.797	4
Social Impact (SI)	0.806	4
Facilitating Conditions (FC)	0.809	4
Perceived Value (PV)	0.785	4
Perceived Risk (PR)	0.834	4
Perceptual knowledge (PK)	0.797	3
Adoption of Mobile Money (ADP).	0.779	4
All variables		31

Source: (Own Survey result, 2024)

3.12. Ethical Considerations

The research effort followed all necessary ethical standards during its existence. Participants were approached with politeness and asked to complete the questionnaire by hard copy and Google form. They were explicitly informed that it was not necessary to provide their identity, emphasizing the importance of maintaining anonymity throughout the study. Furthermore, the goal of the study and the planned use of their comments were clearly conveyed, giving them confidence to provide honest feedback. The respondents were guaranteed that the obtained information would be kept strictly confidential, as mentioned in the questionnaire. Any pertinent notions obtained from external sources were properly credited, and sensitive information about clients such as names, addresses, and financial records was never released.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

4.1. Introduction

The data collected from participants via survey questions, as depicted in this section, is presented using a variety of visual aids such as tables and charts. Furthermore, the obtained data will be thoroughly analyzed and interpreted to shed light on the information offered.

4.2. Socio demographic characteristics of responders

Table 2 Socio-demographic characteristics of the respondents

Description		Frequency	Percentage
Age (in years)	18-25 26-35 36-45 46-55 >55 Total	51 215 84 14 21 385	13.2 55.8 21.8 3.6 5.5 100.0
Gender	Male Female Total	199 186 385	51.7 48.3 100.0
Occupation	Unemployed Self-employed Private org. employee Gov't employee Other Total	14 70 195 85 21 385	3.6 18.2 50.6 22.1 5.4 100.0
Highest education level	Primary Secondary/TVET BA/BSc MA/MSc Above MA/MSc Total	7 49 222 100 7 385	1.8 12.7 57.7 26.0 1.8 100.0
Monthly income (in Birr)	Up to 5,000 5001-10,000 10,001-15,000 15,001-20,000 Above 20,000 Total	58 94 84 58 91 385	15.1 24.4 21.8 15.1 23.6 385

Table 2 illustrates that 55.8% of respondents fell within the age group of 26-35, followed by 21.8% in the 36-45 age group, 13.2% within the 18-25 age group, 3.6% for the 46-55 age group, and only 5.5% were above 55 years old. In terms of gender, the survey had 51.7% male respondents and 48.3% female respondents.

Regarding the occupation of the respondents, the majority (50.6%) were private employees, followed by 22.1% who worked for government organizations. Additionally, 18.2% were self-employed, 3.6% were unemployed and relied on family support, and 5.4% were categorized as 'other' which could include various job categories not specified in the survey such as NGOs or family support. The data indicates that most respondents were in a favorable economic position, making them potential users of mobile money services and a potential market for providers.

In terms of education, 57.7% of respondents held a BA or BSc degree was followed by 26.0%, 12.7%, 1.8%, and 1.8% with an MA or MSc degree, respectively. Secondary or TVET education was equivalent to a primary degree, whilst an MA or MSc degree denoted a higher level.

The table also shows that 24.4% of respondents earned between birr 5,001-10,000, 23.6% earned above birr 20,000, 21.8% earned between birr 10,001-15,000, and 20.1% earned between birr 5,001-10,000. The remaining 15.1% and 15.1% earned between15, 000-20,000 and up to 5,000 respectively. The majority of respondents had incomes that allowed them to afford mobile money services.

4.3. Mobile money usage Respondents

Table 3 Tele-birr service usage frequency

Variables		**Frequency**	**Percentage**
How often do you use Tele-birr services?	Rarely	91	23.6
	Often	78	20.3
	Sometimes	158	41.0
	Always	58	15.1
	Total	385	100.0

Source: (Own Survey result, 2024)

Frequency of Tele-Birr Usage: Summary of Findings

Table 3 provides insights into the frequency of Tele-Birr usage among respondents, highlighting the distribution of users across different usage categories. The findings shed light on the adoption and usage patterns of Tele-Birr among survey participants.

1. Frequent Users: Approximately 20.3% of survey participants are classified as frequent users of Tele-Birr. These individuals use the service on a regular and consistent basis, suggesting a high level of engagement with the platform.

2. Occasional Users: A larger proportion of respondents, accounting for 41.0%, utilize Tele-Birr occasionally. While they may not use the service as frequently as frequent users, they still engage with Tele-Birr on a semi-regular basis, indicating moderate usage patterns.

3. Rare Users: A smaller percentage of respondents, representing 23.6% of the total, utilize Tele-Birr rarely. These individuals may only use the service on rare occasions or have limited engagement with the platform compared to other users.

4. **Consistent Users**: Only 15.1% of respondents are classified as consistent users of Tele-Birr. These individuals demonstrate a steady and reliable usage pattern, consistently utilizing the service over time.

- Significant Usage Levels: The data indicates that Tele-Birr has achieved a significant level of usage among survey participants, with a combined percentage of 75.4% for frequent and occasional users. This suggests that Tele-Birr has gained traction and acceptance among consumers, despite being relatively new in the marketplace.

- Varied Usage Patterns: The distribution of users across different usage categories highlights the diverse usage patterns observed among respondents. While some individuals use Tele-Birr frequently or consistently, others may only engage with the service occasionally or rarely. Understanding these varied usage patterns is crucial for service providers to tailor their offerings and marketing strategies accordingly.

The findings from Table 3 underscore the widespread adoption and usage of Tele-Birr among survey participants. With a significant percentage of users falling into the frequent and occasional usage categories, Tele-Birr has established itself as a popular and widely-used

mobile financial service. Moving forward, providers can leverage these insights to further enhance the user experience, expand service offerings, and drive continued growth and adoption of Tele-Birr in the marketplace.

4.4. Utilization of tele-birr services

Table 4 presents an overview of the utilization of Tele Birr services among respondents, highlighting the primary uses and frequency of usage for various transactions. The findings offer insights into the diverse ways in which respondents utilize Tele Birr for their financial transactions and payments.

Table 4 Purposes tele-birr use for respondents

		Frequency	Percent
Which Tele-birr services do you use?	Pay with Tele-birr (For bills, merchant, utility, ticket, traffic penalty etc.) Receive payment	51	13.2
	Send money, Withdraw cash, Buy airtime/package, Pay with Tele-birr (For bills, Receive payment, Financial services	172	44.7
	Buy airtime/package	63	16.4
	Financial services (Tele-birr mela, sanduk and endekise)	71	18.4
	Send money	28	7.3
	Total	385	100.0

Source: (Own Survey result, 2024)

Primary Uses of Tele Birr

1. Purchasing Airtime: A significant portion of respondents, representing 13.2% of the total, utilize Tele Birr primarily for purchasing airtime. This indicates that Tele Birr serves as a convenient platform for recharging mobile phone credit.

2. Sending Money: Sending money emerges as another popular use of Tele Birr, with 16.4% of respondents utilizing the service for this purpose. This highlights Tele Birr's role as a reliable and efficient means of transferring funds.

3. Making Payments: Respondents also utilize Tele Birr for making various payments, including bills, merchant transactions, tickets, utility bills, and traffic penalties. This broad category of payments indicates the versatility of Tele Birr as a payment solution.

Utilization Patterns

1. Financial Services: A subset of respondents, representing 7.3% of the total, utilize Tele Birr for specific financial services such as Tele Birr Mela, Sanduk, and Endekise. These services may cater to more specialized financial needs or preferences.

2. Comprehensive Utilization: Nearly half of the respondents (44.7%) utilize Tele Birr for a combination of purposes, including sending money, withdrawing cash, purchasing airtime/packages, and making various payments. This comprehensive utilization reflects the wide range of services offered by Tele Birr and its integration into users' daily financial activities.

- Convenience and Accessibility: The widespread utilization of Tele Birr services for airtime purchases, money transfers, and payments underscores the convenience and accessibility offered by the platform. Tele Birr serves as a one-stop solution for various financial transactions, eliminating the need for multiple platforms or physical visits to service providers.

- Versatility of Tele Birr: The diverse range of services accessed through Tele Birr, including both basic transactions like airtime purchases and more specialized financial services, demonstrates the platform's versatility and adaptability to users' needs and preferences.

- Opportunities for Expansion: The high utilization rates observed across different services suggest opportunities for further expansion and innovation within the Tele Birr ecosystem. Providers may explore additional services or features to enhance user experience and cater to evolving financial needs.

The findings from Table 4 highlight the significant role of Tele Birr in facilitating a wide range of financial transactions and payments for users. From purchasing airtime to sending money and making various payments, Tele Birr serves as a versatile and convenient platform that meets users' diverse financial needs. By understanding users' utilization patterns and preferences, providers can continue to enhance and expand Tele Birr services, further consolidating its position as a leading mobile financial solution in the region.

4.5. Likert Scale Values and Aggregate Response Analysis

This section gives the average score and standard deviation for each survey item in the eight predictor constructs, as well as the dependent variable.

Table 5 Aggregate responses to Likert scale items

Item Statistics	Mean	SD	N
Performance			
Performance Expectations Tele-birr services are useful in my everyday life.	3.34	1.206	385
Performance Expectations Using Tele-birr services boosts my productivity	3.17	1.185	385
Performance Expectations Using Tele-birr services improves my chances of success.	3.44	1.196	385
Performance Expectations Tele-birr allows me to perform tasks more rapidly.	3.68	1.371	385
Effort			
Expected effort level For me, learning how to utilize Tele-birr is easy.	3.59	1.257	385
Expected effort level My interactions with the Tele-birr system are straightforward and understandable.	3.47	1.231	385
Expected effort level Tele-birr is straightforward for me to use.	3.61	1.258	385
Expected effort level It is easy for me to acquire skilled in using Tele-birr services.	3.37	1.224	385
Social Influence			
Social influence People that are essential to me (family, friends, and relatives) believe I should use Tele-birr services.	3.01	1.205	385
Social influence People who affect my conduct suggest that I employ Tele-birr services.	2.75	1.182	385
Social Influence People whose choices I appreciate prefer that I employ Tele-birr services.	3.25	1.095	385
Social influence People who are essential to me encourage using Tele-birr services.	3.16	1.241	385
Creating conditions			
Creating favorable conditions I have the requisite resources to utilize Tele-birr services.	3.08	1.247	385
Creating favorable conditions I have the knowledge to use Tele-birr services.	3.37	1.268	385
Creating favorable conditions Tele-birr services work with other technologies I use.	3.49	1.229	385
Creating favorable conditions When I encounter issues using Tele-birr services, I can seek assistance from others.	3.06	1.146	385
Perceived value			

The perceived value Tele-birr services are reasonably regarded.	2.87	1.229	385
Perceived Value Tele-birr service provides good value for the money I spend.	3.09	1.221	385
Perceived Value Tele-birr services are currently viewed as providing a good value.	2.96	1.182	385
Perceived value Using Tele-birr services allows me to save money.	2.57	1.275	385
Perceived risk			
The perceived risk Using Tele-birr services exposes my Tele-birr account to potential fraud.	2.52	1.018	385
The perception of risk I believe that utilizing Tele-birr services exposes my Tele-birr account to financial risks.	2.55	1.069	385
Perceived risk I believe that using Tele-birr services puts my privacy at danger.	2.51	1.053	385
Perceived risk If I use Tele-birr services, hackers may gain access to my account.	2.49	1.054	385
Perceived knowledge			
Perceptions of knowledge When needed, I will obtain enough help from the organization regarding Tele-birr services.	2.87	1.221	385
Perceived knowledge I have received sufficient information regarding the advantages of using Tele-birr services.	3.29	1.240	385
Perceptions of knowledge In general, I am aware of Tele birr services. Adoption of mobile payment services	3.36	1.178	385
Adoption			
Adoption of mobile money services I plan to keep using Tele-birr services in the future.	3.52	1.184	385
Adoption of Mobile Money Services I will always attempt to use Tele-birr's services in my daily life.	3.36	1.238	385
Adoption of mobile money services I intend to continue using Tele-birr services frequently.	3.32	1.333	385
Adoption of mobile money services I encourage others to use Tele-birr systems.	3.72	1.255	385

Source: (Own Survey result, 2024)

The average score reflects the level of consensus among respondents, based on a five-point Likert scale ranging from strongly disagree to strongly agree. The terms are classified into three categories: "high rank" for mean ratings of 3.5 or higher, "middle rank" for mean ratings of 3.5 to 3.0, and "low rank" for ratings of 3.0 or lower. The mean and standard deviations calculated from survey data are correctly interpreted (Amentie et al., 2016).

Table 5 reveals various insights into the respondents' perceptions and expectations regarding Tele-birr services, divided into several key constructs.

Performance Expectancy: The mean score for performance expectancy items shows that respondents find Tele-birr services quite useful for their daily tasks. Specifically, the item "Tele-birr allows me to perform tasks more rapidly" has the highest mean score of 3.68 (SD = 1.371), indicating strong agreement that Tele-birr improves efficiency. Other items in this construct, such as the usefulness of Tele-birr in everyday life (Mean = 3.34, SD = 1.206) and its ability to boost productivity (Mean = 3.17, SD = 1.185), also reflect positive perceptions. This high mean score suggests that performance expectancy plays a crucial role in the acceptance of Tele-birr services.

Effort Expectancy: The ease of use of Tele-birr services is reflected in an average effort expectation mean score of 3.59 (SD = 1.257). Respondents find learning how to utilize Tele-birr easy and interactions with the system straightforward and understandable (Mean = 3.47, SD = 1.231). The overall simplicity of use (Mean = 3.61, SD = 1.258) indicates that effort expectancy is a significant factor influencing the adoption of Tele-birr services.

Social Influence: The social impact factor has a mean score of 3.25 (SD = 1.095), placing it in the middle range of influence. This suggests that while social influence from family, friends, and significant others is present, it has a moderate effect on the decision to adopt Tele-birr services. The moderate mean score indicates that social influence is an important but not dominant factor in adoption.

Enabling Conditions: The mean score for enabling conditions is 3.49 (SD = 1.229), indicating that respondents believe they have the necessary resources and support to use Tele-birr services effectively. This slightly above-average mean score suggests that favorable conditions moderately influence the acceptance of Tele-birr services.

Perceived Risk: The mean score for perceived risk is 2.55 (SD = 1.069), reflecting concerns about the potential risks associated with using Tele-birr, such as fraud and privacy issues. However, the relatively low mean score indicates that while these risks are acknowledged, they do not significantly deter the use of Tele-birr services.

Perceived Value: The perceived value of Tele-birr services has a mean score of 3.09 (SD = 1.221), suggesting that respondents view the service as providing reasonable value for money. However, the mean score is moderate, indicating that perceived value has a limited impact on the decision to use Tele-birr services.

Perceived Knowledge: The mean score for perceived knowledge is 3.36 (SD = 1.178), indicating that respondents feel somewhat informed about Tele-birr services. This moderate mean score suggests that while awareness and knowledge are present, they are not the strongest influencers of adoption.

Adoption: The dependent variable, the adoption of Tele-birr services, has a high mean score of 3.52 (SD = 1.184), indicating a strong intention among respondents to continue using Tele-birr services in the future. This high score reflects the combined influence of perceived benefits, ease of use, social factors, enabling conditions, perceived risks, and value on the decision to adopt Tele-birr services.

The analysis shows that performance expectancy and effort expectancy are critical in the acceptance of Tele-birr services. Social influence and enabling conditions have a moderate impact, while perceived risk and value have a limited influence. Perceived knowledge also plays a role, though to a lesser extent, in influencing adoption. Respondents' intentions to continue using Tele-birr services suggest a positive outlook on its future usage.

4.6. A summary of cumulative replies to items on the Likert scale.

Table 6 presents the average mean scores and standard deviations for the eight independent constructs examined in this study. These constructs include performance expectancy, effort expectancy, social influence, perceived value, perceived risk, perceived knowledge, and facilitating conditions. The findings offer insights into the respondents' perceptions and evaluations of these constructs, shedding light on their importance and variability.

Table 6 A summary of cumulative replies to items on the Likert scale.

Variables	Mean	SD	N
Performance Expectation (PE)	13.6442	4.45646	385
Expected Effort (EE)	14.0416	4.72012	385
Social Impact (SI)	12.1714	3.95373	385
Facilitating Conditions (FC)	12.9974	4.24356	385
Perceived Value (PV)	11.4779	4.48262	385
Perceived Risk (PR)	10.0779	3.61481	385
Perceptual knowledge (PK)	9.5117	3.13590	385
Adoption of Mobile Money (ADP).	13.9299	4.75359	385

Source: (Own Survey result, 2024)

1. Effort Expectancy: Effort expectancy emerges as the construct with the highest mean score, indicating that respondents perceive Tele-birr as relatively easy to use, with an average score of 14.0416.

2. Performance Expectancy: Performance expectancy follows closely behind, with a mean score of 13.6442. This suggests that respondents believe Tele-birr offers significant benefits and meets their performance expectations.

3. Moderate Mean Values: Social influence, perceived value, perceived risk, and facilitating conditions exhibit moderate mean values, indicating that respondents perceive these constructs with varying degrees of importance and relevance to Tele-birr adoption.

4. Lowest Mean Scores: Perceived knowledge has the lowest mean score among the constructs, with values ranging from 12.1714 to 9.5117. This suggests that respondents may perceive their knowledge about Tele-birr to be relatively limited compared to other constructs.

Standard Deviations

- Variability in Responses: All constructs exhibit standard deviations greater than one, indicating substantial variability in respondents' survey responses. This variability suggests that respondents have diverse perceptions and evaluations of the constructs, leading to a range of responses across the sample.

- Consistent Evaluation Marks: Despite the variability, respondents tend to offer similar evaluation marks to the study's constructs, as evidenced by the relatively narrow range of standard deviations.

- Importance of Effort and Performance Expectancy: The high mean scores for effort and performance expectancy highlight the significance of these constructs in influencing Tele-birr adoption. Efforts to enhance user perceptions of ease of use and performance benefits may contribute to increased adoption rates.

- Moderate Importance of Other Constructs: While social influence, perceived value, perceived risk, and facilitating conditions exhibit moderate mean values, they still play important roles in shaping users' attitudes and intentions toward Tele-birr adoption. Strategies aimed at addressing concerns related to these constructs may further facilitate adoption.

- **Addressing Perceived Knowledge:** The low mean scores for perceived knowledge underscore the importance of educational efforts and information dissemination initiatives to improve users' understanding and knowledge of Tele-birr.

The analysis of mean scores and standard deviations provides valuable insights into respondents' perceptions of the independent constructs examined in the study. By identifying the constructs with the highest and lowest mean scores, as well as the variability in responses indicated by standard deviations, researchers can prioritize areas for intervention and tailor strategies to address specific concerns and barriers to Tele-birr adoption. These findings contribute to a deeper understanding of the factors influencing users' attitudes and intentions toward adopting Tele-birr, informing targeted interventions and policy decisions aimed at promoting its widespread adoption and usage.

4.7. Pearson's Correlation Analysis

Correlation Analysis Results and Interpretation

In this study, correlation analysis was conducted to investigate the relationships between the independent variables (performance expectancy, effort expectancy, social influence, facilitating conditions, perceived value, perceived risk, and perceived knowledge) and the dependent variable (adoption of Tele-birr). The analysis utilized the Pearson product-moment correlation coefficient, which assesses the strength and direction of linear relationships between continuous variables.

Table 7 Pearson's correlation result

Correlations									
		PE	EE	SI	FC	PV	PR	PK	ADP
PE	Pearson Correlation	1	.876**	.764**	.837**	.694**	.250**	.802**	.876**
	Sig. (1-tailed)		.000	.000	.000	.000	.000	.000	.000
	Sum of Squares and Cross-products	7626.249	7076.694	5168.486	6077.644	5323.475	1547.675	4304.101	7123.392
	Covariance	19.860	18.429	13.460	15.827	13.863	4.030	11.209	18.551
	N	385	385	385	385	385	385	385	385
E	Pearson	.876**	1	.641**	.843**	.684**	.318**	.778**	.846**

E	Correlation								
	Sig. (1-tailed)	.000		.000	.000	.000	.000	.000	.000
	Sum of Squares and Cross-products	7076.694	8555.335	4590.257	6484.042	5553.353	2082.753	4424.813	7288.122
	Covariance	18.429	22.280	11.954	16.886	14.462	5.424	11.523	18.979
	N	385	385	385	385	385	385	385	385
SI	Pearson Correlation	.764**	.641**	1	.759**	.702**	.190**	.655**	.664**
	Sig. (1-tailed)	.000	.000		.000	.000	.000	.000	.000
	Sum of Squares and Cross-products	5168.486	4590.257	6002.686	4891.171	4780.457	1042.857	3117.229	4788.629
	Covariance	13.460	11.954	15.632	12.737	12.449	2.716	8.118	12.470
	N	385	385	385	385	385	385	385	385
FC	Pearson Correlation	.837**	.843**	.759**	1	.705**	.168**	.889**	.894**
	Sig. (1-tailed)	.000	.000	.000		.000	.000	.000	.000
	Sum of Squares and Cross-products	6077.644	6484.042	4891.171	6914.997	5148.478	991.078	4541.512	6924.930
	Covariance	15.827	16.886	12.737	18.008	13.407	2.581	11.827	18.034
	N	385	385	385	385	385	385	385	385
PV	Pearson Correlation	.694**	.684**	.702**	.705**	1	.261**	.637**	.639**
	Sig. (1-tailed)	.000	.000	.000	.000		.000	.000	.000
	Sum of Squares and Cross-products	5323.475	5553.353	4780.457	5148.478	7716.062	1624.662	3440.849	5227.904
	Covariance	13.863	14.462	12.449	13.407	20.094	4.231	8.961	13.614
	N	385	385	385	385	385	385	385	385
PR	Pearson Correlation	.250**	.318**	.190**	.168**	.261**	1	.195**	.128**

	Sig. (1-tailed)	.000	.000	.000	.000	.000		.000	.006
	Sum of Squares and Cross-products	1547.675	2082.753	1042.857	991.078	1624.662	5017.662	850.649	847.104
	Covariance	4.030	5.424	2.716	2.581	4.231	13.067	2.215	2.206
	N	385	385	385	385	385	385	385	385
PK	Pearson Correlation	.802**	.778**	.655**	.889**	.637**	.195**	1	.884**
	Sig. (1-tailed)	.000	.000	.000	.000	.000	.000		.000
	Sum of Squares and Cross-products	4304.101	4424.813	3117.229	4541.512	3440.849	850.649	3776.197	5060.816
	Covariance	11.209	11.523	8.118	11.827	8.961	2.215	9.834	13.179
	N	385	385	385	385	385	385	385	385
ADP	Pearson Correlation	.876**	.846**	.664**	.894**	.639**	.128**	.884**	1
	Sig. (1-tailed)	.000	.000	.000	.000	.000	.006	.000	
	Sum of Squares and Cross-products	7123.392	7288.122	4788.629	6924.930	5227.904	847.104	5060.816	8677.106
	Covariance	18.551	18.979	12.470	18.034	13.614	2.206	13.179	22.597
	N	385	385	385	385	385	385	385	385
**. Correlation is significant at the 0.01 level (1-tailed).									

Source: (Own Survey result, 2024)

Pearson Correlation Coefficients (r)

The Pearson correlation coefficients range from -1 to 1, with positive values indicating a positive correlation, negative values indicating a negative correlation, and the magnitude indicating the strength of the relationship. The correlation coefficients were interpreted based on the guidelines provided by Pallant (2005):

- ±0.10 to ±0.29: Weak correlation
- ±0.30 to ±0.49: Moderate correlation
- ±0.50 to ±1.0: Strong correlation

The provided person offers a comprehensive overview of the relationships between several variables: (PE), (EE), (SI), (FC), (PV), (PR), (PK), and (ADP). Each correlation coefficient reveals the strength and direction of the relationships between these variables.

PE shows strong positive correlations with EE at 0.876, FC at 0.837, ADP at 0.876, and PK at 0.802. These correlations indicate that as PE increases, these variables also tend to increase significantly. PE also has a moderate correlation with SI at 0.764 and PV at 0.694, while its correlation with PR is weaker at 0.250. All these relationships are statistically significant at the 0.01 level.

EE also exhibits strong correlations with FC (0.843), ADP (0.846), and PK (0.778), suggesting that these variables are closely linked. The correlation with SI is moderately strong at 0.641 and with PV at 0.684. EE's relationship with PR is weaker at 0.318, but all these correlations are statistically significant at the 0.01 level.

SI demonstrates strong correlations with FC (0.759) and PV (0.702), and moderate correlations with EE (0.641), PK (0.655), and ADP (0.664). The correlation with PR is weaker at 0.190. These correlations indicate significant but varying degrees of association with SI, and all are significant at the 0.01 level.

FC shows strong positive correlations with PE (0.837), EE (0.843), SI (0.759), ADP (0.894), and PK (0.889). This suggests that FC is highly interconnected with these variables. The correlation with PV is moderately strong at 0.705, while its relationship with PR is weaker at 0.168. All correlations are significant at the 0.01 level.

PV is strongly correlated with SI (0.702), FC (0.705), PE (0.694), and EE (0.684). Its correlations with ADP (0.639) and PK (0.637) are moderately strong. The relationship with PR is weaker at 0.261. These correlations are all significant at the 0.01 level, indicating meaningful connections.

PR generally exhibits the weakest correlations among all variables. It has moderate correlations with PV (0.261) and EE (0.318), and weaker correlations with SI (0.190), FC (0.168), PE (0.250), ADP (0.128), and PK (0.195). While PR's correlations are lower, they are significant at the 0.01 level, except for PR-ADP (0.128), which is significant at the 0.006 level.

PK shows strong correlations with FC (0.889), PE (0.802), EE (0.778), ADP (0.884), and SI (0.655). Its correlation with PV is moderately strong at 0.637. The relationship with PR is weaker at 0.195. All these correlations are significant at the 0.01 level, indicating PK's substantial associations with these variables.

Finally, **ADP** exhibits strong correlations with PE (0.876), EE (0.846), FC (0.894), and PK (0.884). It has moderately strong correlations with SI (0.664) and PV (0.639). The relationship with PR is weaker at 0.128 but still significant at the 0.01 level. In summary, most variables exhibit strong positive correlations, indicating that they tend to increase together. PR generally has weaker correlations with other variables. The statistically significant relationships at the 0.01 level suggest robust connections between these variables, which could be valuable for further research or practical applications.

4.8. Normality Data Analysis

In SPSS Version 26, various tests are available to assess the normality of data, including Skewness, Kurtosis, Normal Probability Plot (NPP), and histogram tests. Ensuring that the data follows a normal distribution is crucial, especially when employing parametric tests that rely on this assumption. Both visual and numerical methods can be used to evaluate normality.

Table 8 Skewness and Kurtosis values for normality testing of data

Variables	N	Skewness	Kurtosis
	Statistic	Statistic	Statistic
PE	385	-.785	-.135
EE	385	-.805	-.393
SI	385	-.247	-.196
FC	385	-.727	-.321
PV	385	.010	-.967
PR	385	.141	-.790
PK	385	-.951	-.174
ADP	385	-.856	-.169
Valid N (listwise)	385		

Source: (Own Survey result, 2024)

Analysis of Skewness, Kurtosis, and Histogram for Normality

Table 8 presents the skewness and kurtosis values for the data, with both metrics falling within the range of ±1. These values are key indicators of the shape and normality of the distribution.

- **Skewness**: Skewness measures the asymmetry of the data distribution. A skewness value within ±1 indicates that the data distribution is fairly symmetrical, with no significant skew to the left or right.

- **Kurtosis:** Kurtosis measures the "tailed ness" of the data distribution. A kurtosis value within ±1 suggests that the tails of the distribution are neither too heavy nor too light, indicating a shape close to the normal distribution.

The fact that both skewness and kurtosis values fall within this range confirms that the data does not significantly deviate from normality.

Histogram Analysis

To further validate the normality of the data distribution, a histogram was utilized. The histogram provides a visual representation of the frequency distribution of the residuals.

Figure 2 the normal test histogram

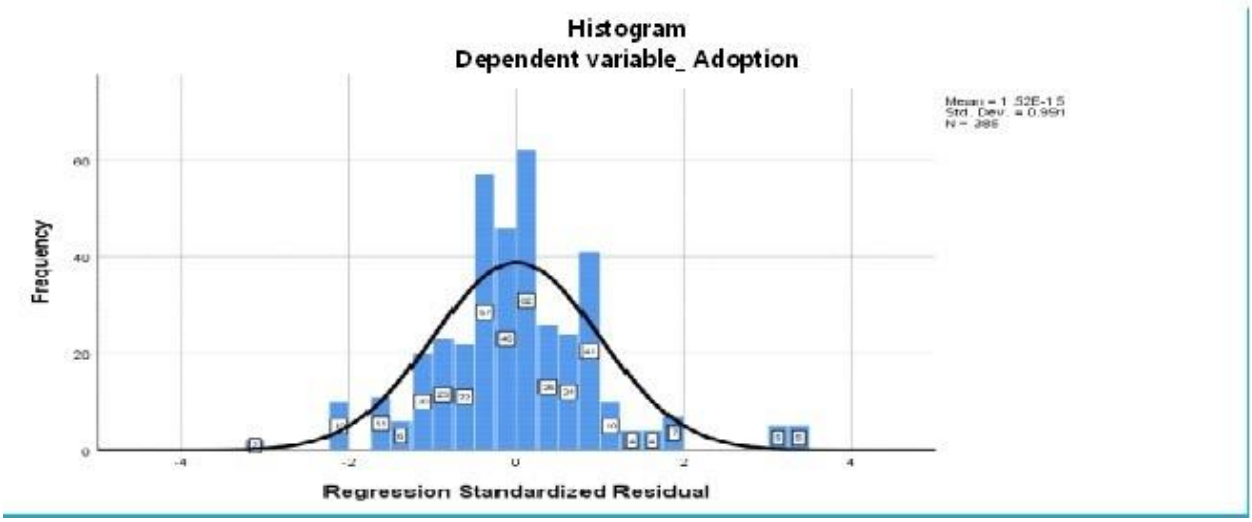


Figure 2the normal test histogram

Source: (Own Survey result, 2024)

Analysis of the Histogram

- **Bell-Shaped Curve**: The histogram in Figure 1 shows the distribution of residuals with a bell-shaped curve, which is a key indicator of normal distribution. The bell shape suggests that most of the residuals are concentrated around the mean, with fewer residuals appearing as you move away from the mean.

- **Centered on the Mean**: The largest bars on the histogram are centered on the mean, indicating that the majority of residuals are clustered near the center of the distribution. This central clustering supports the idea that residuals are normally distributed.

- **Deviations from the Curve:** While most residuals closely follow the normal curve, some standard residuals deviate significantly. These deviations might indicate the presence of outliers or slight skewness, but they do not significantly disrupt the overall normality of the residuals.

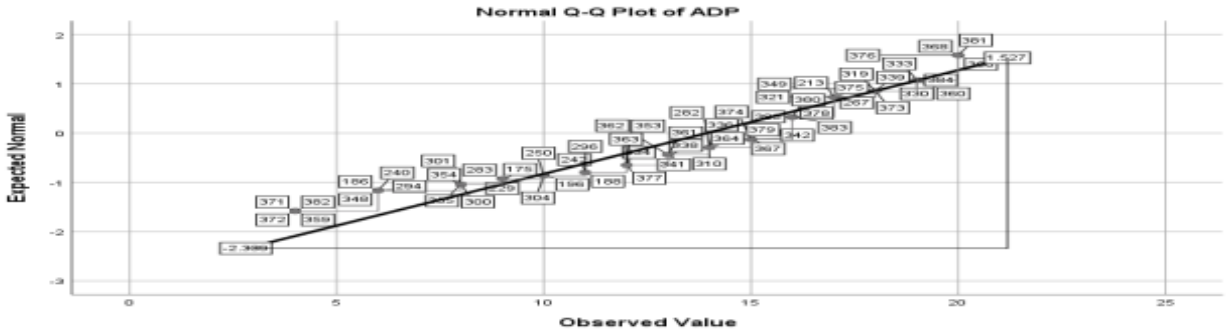
The histogram provides visual confirmation that the residuals predominantly follow a normal distribution, despite a few deviations.

Analysis of the Q-Q Plot for Residuals

Normal Q-Q Plot Analysis

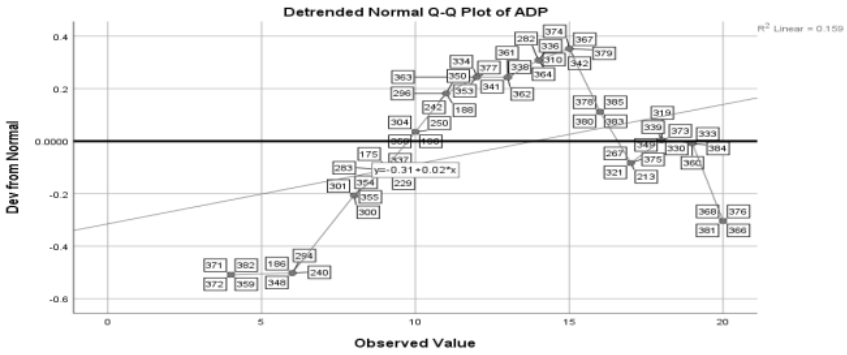
In addition to the histogram, the normal Q-Q (quantile-quantile) plot is employed to assess the normality of the residuals.

Figure 3 the normal test Q-Q plot



Source: (Own Survey result, 2024)

Figure 4 Q-Q plot



Source: (Own Survey result, 2024)

- Linear Pattern: The Q-Q plot displays the residuals plotted against the expected quantiles of a normal distribution. In this study, the residuals form a roughly straight line along the diagonal, indicating that the residuals are normally distributed.

- Minimal Deviations: There are minimal deviations from the diagonal line, suggesting that the residuals do not significantly depart from normality. A few points may deviate slightly at the tails, but overall, the distribution remains normal.

- Consistency across Diagnostics: The consistency between the histogram and the Q-Q plot reinforces the conclusion that the residuals are normally distributed. Both tools show that the majority of residuals adhere to the expected pattern of normal distribution.

1. Validation of Assumptions: The normality of residuals confirms the validity of one of the key assumptions of regression analysis. Normal residuals ensure that the model's statistical tests, such as t-tests and F-tests, produce reliable results.

2. Accurate Predictive Performance: When residuals are normally distributed, the regression model's predictive performance is more accurate. The model's estimates are unbiased, and predictions are more reliable.

3. Enhanced Model Interpretability: A model with normally distributed residuals is easier to interpret and apply to real-world scenarios. It assures researchers and practitioners that the relationships identified by the model are not artifacts of skewed or irregular error distributions.

The combination of the histogram and Q-Q plot analyses provides strong evidence that the residuals in this regression model follow a normal distribution. The histogram's bell-shaped curve, with the largest bars centered on the mean, and the Q-Q plot's linear pattern collectively support the normality assumption. Despite a few deviations, the overall distribution of residuals is normal, confirming the reliability of the regression model's assumptions.

These findings validate the use of the regression model to analyze the relationship between the predictor variables (performance expectancy, effort expectancy, social influence, facilitating conditions, perceived value, perceived risk, and perceived knowledge) and the dependent variable (adoption of mobile money services). Ensuring normality in residuals enhances the credibility and accuracy of the study's conclusions, providing a solid foundation for making data-driven decisions and policy recommendations regarding mobile money service adoption.

The Q-Q (quantile-quantile) plot is a crucial diagnostic tool used to assess the normality of residuals in regression analysis. Normality of residuals is a key assumption in linear regression, as it ensures that the model's errors are randomly distributed and that the statistical tests of significance are valid.

- Linear Pattern: The Q-Q plot in Figure 3 displays the ordered values of the residuals against the theoretical quantiles of a normal distribution. The residuals lie along a straight diagonal line, suggesting that the residuals are normally distributed. A linear pattern in the Q-Q plot indicates that the actual distribution of the residuals closely matches the normal distribution.

- No Significant Deviations: There are no significant deviations or systematic departures from the diagonal line. This lack of curvature or clustering of points indicates that the residuals do not exhibit skewness or kurtosis, which are common indicators of non-normality.

- Symmetry and Centering: The points are symmetrically distributed around the line, centered on the plot. This symmetry further supports the assumption that the residuals are normally distributed.

1. Valid Inferences: The normal distribution of residuals ensures that the statistical inferences made from the regression analysis, such as hypothesis tests and confidence intervals, are valid and reliable. This validity is critical for drawing accurate conclusions from the study.

2. Accurate Predictions: Normality of residuals contributes to more accurate and unbiased predictions from the regression model. When residuals are normally distributed, the model's predictions are less likely to be systematically over or under-estimated.

3. Homogeneity of Variance: Normal residuals often accompany homoscedasticity, meaning that the variance of residuals is constant across all levels of the independent variables. This homogeneity further supports the reliability of the regression model.

Support from Q-Q Plot Analysis

The Q-Q plot analysis supports the conclusion that the residuals of the regression model do not significantly deviate from normality. This finding is corroborated by:

- Uniform Distribution: The scatter of residuals around the line indicates a uniform distribution, suggesting that there are no large outliers or extreme deviations that would violate the normality assumption.

- Consistency with Other Diagnostics: Other diagnostic tools, such as the histogram of residuals and the normal probability plot, should also be consistent with the Q-Q plot findings. In this study, all these diagnostics collectively indicate that the residuals are normally distributed. The Q-Q plot in Figure 2 demonstrates that the residuals from the regression analysis are normally distributed, with no substantial deviations from the expected linear pattern. This observation confirms the normality assumption, reinforcing the robustness and validity of the regression model used in this study. Consequently, the statistical inferences, predictions, and overall conclusions drawn from the regression analysis are credible and dependable.

This adherence to the normality assumption ensures that the regression model accurately reflects the relationship between the predictors (performance expectancy, effort expectancy, social influence, facilitating conditions, perceived value, perceived risk, and perceived knowledge) and the dependent variable (adoption of mobile money services). The consistency and reliability of the model's residuals support its use for practical applications and further research in understanding the factors influencing the adoption of mobile money services.

4.9. Multicollinearity Test

The study conducted a thorough assessment for multicollinearity in the context of multiple linear regression, which is crucial because strong correlations among independent variables can obscure their individual effects on the dependent variable. Multicollinearity can complicate the interpretation of regression coefficients and undermine the reliability of the model.

To evaluate multicollinearity, two key metrics were utilized: tolerance and Variance Inflation Factor (VIF). Tolerance assesses how much of the variation in an independent variable is not explained by other independent variables, with values less than 0.10 indicating potential multicollinearity. Conversely, VIF measures how much the variance of a regression coefficient is inflated due to multicollinearity; a VIF exceeding 10 suggests significant multicollinearity.

According to the guidelines proposed by Hair et al. (2002), tolerance values below 0.10 or VIF values above 10 indicate problematic multicollinearity. However, in this study, all variables exhibited tolerance values above 0.10 and VIF values below 10, indicating no substantial multicollinearity issues.

Table 9 Multicollinearity Test on 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)

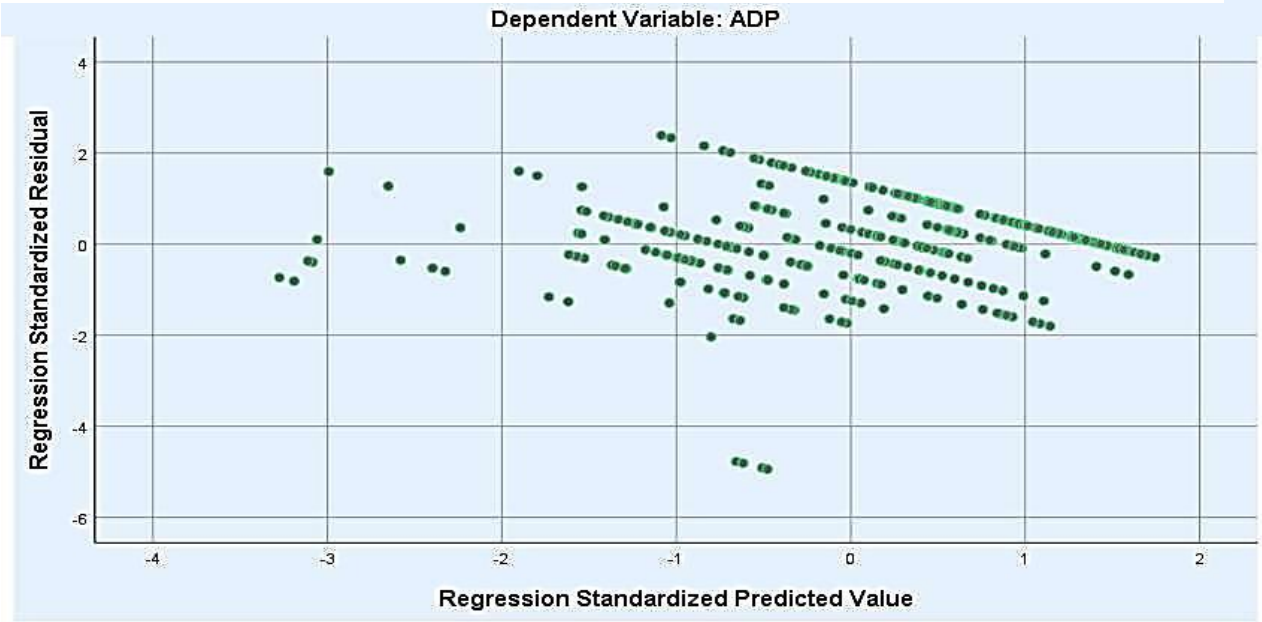
The findings from Table 9 confirm that none of the variables exhibited extreme multicollinearity. This ensures that the regression analysis results are robust and interpretable, allowing for a clear understanding of the unique contributions of each independent variable to the dependent variable.

In conclusion, the rigorous assessment conducted in this study assures the absence of multicollinearity among the variables included in the regression analysis. This supports the reliability of the model's findings and enables confident interpretations of the relationships between the independent and dependent variables studied.

4.10. Homoscedasticity Assumption Test

In assessing the assumptions of regression analysis, one critical aspect is the consistency of variance in the residuals across different levels of the independent variables. This is known as homoscedasticity, where the spread or variability of errors remains stable throughout the range of predictors. Figure 4 illustrates how this characteristic was evaluated using scatter plots among other methods, utilizing SPSS software.

Figure 5Homoscedasticity scatter plot



Source: (Survey result, 2024)

Figure 4 shows a pattern where the scatter points are evenly distributed, particularly around the central area near the coordinates (0,0). This indicates that the residuals form a rectangular shape, suggesting no significant deviations from normality or violations of homoscedasticity. According to Tabachnick and Fidell (2013), it is acceptable to have a few outliers, typically within ±3.3 range, especially with a large sample size.

By ensuring that the variability in the dependent variable (in this case, adoption of telebirr services) was evenly spread across all predictor variables, this study confirmed the presence of

homoscedasticity. This assurance is crucial for the reliability of regression analysis results, ensuring that the assumptions are met and interpretations of the relationships between variables are valid.

4.11. Factors of Mobile Money Service Adoption

This section presents the regression findings obtained after running the appropriate statistical tests and meeting the necessary conditions for linear regression analysis. The primary goal is to determine whether the predictor variables can significantly explain the dependent variable, which is the adoption of mobile money services. Additionally, it aims to evaluate the quantitative relationships between the independent variables—performance expectancy, effort expectancy, social influence, facilitating conditions, perceived value, perceived risk, and perceived knowledge—and the dependent variable.

4.12. Interpretation of Regression Statistics

Analysis of the Relationship between Mobile Money Service Adoption and Predictor Variables

Table 10 **Summary of the regression model**

Model Summary [b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.944[a]	.891	.889	1.58083
a. Predictors: (Constant), PK, PR, PV, SI, EE, PE, FC				
b. Dependent Variable: ADP				

Source: (Own Survey result, 2024)

Table 10 provides a detailed depiction of the relationship between the use of mobile money services and seven key predictor categories in this study. The analysis yields several critical statistical measures that highlight the robustness and explanatory power of the regression model employed:

R-Value (Correlation Coefficient): The R-value of 94.4% (0.944) signifies a strong positive correlation between the predictor variables (performance expectancy, effort expectancy, social influence, facilitating condition, perceived value, perceived risk, and perceived knowledge) and

the adoption of mobile money services. This indicates a substantial relationship, where an increase in these predictors is associated with a higher likelihood of adopting mobile money services.

R-Square (Coefficient of Determination): The R-square value of 0.891 implies that the seven predictor variables collectively explain 89.1% of the variance in the adoption of mobile money services. This percentage reflects the proportion of the total variation in the dependent variable (mobile money service adoption) that can be attributed to the included predictors. The remaining 10.9% of the variance is due to factors not included in this study, suggesting that other variables also play a significant role in influencing mobile money service adoption.

Adjusted R-Square: The adjusted R-square value of 0.889 accounts for the number of predictors in the model relative to the sample size, providing a more accurate measure of the model's explanatory power. The slight decrease from the R-square value indicates a minimal adjustment, suggesting that the model's predictors remain strong and relevant when generalized to the broader population. According to Pallant (2005), an adjusted R-square value of 88.9% is considered excellent in the context of human behavior research. It demonstrates a substantial level of predictive power, indicating that the model is robust and capable of making accurate predictions about mobile money service adoption based on the included variables.

Implications of Findings:

Model Generalizability: The close similarity between the R-square (0.891) and the adjusted R-square (0.889) values indicates that the model retains its predictive accuracy when generalized from the research sample to a broader population. This implies that the findings of this study can be confidently applied to wider contexts beyond the sample used. The model's ability to generalize suggests that the predictor variables identified are consistently influential in determining mobile money service adoption across different populations.

Explanatory Power: The identified predictors—performance expectancy, effort expectancy, social influence, facilitating condition, perceived value, perceived risk, and perceived knowledge—collectively explain nearly 89.1% of the variance in mobile money service adoption. This underscores their significant role and provides a clear understanding of the factors driving adoption behavior. These findings can inform targeted strategies to enhance

mobile money service adoption, focusing on improving performance and effort expectancy, leveraging social influence, enhancing facilitating conditions, increasing perceived value, mitigating perceived risk, and boosting perceived knowledge.

Areas for Further Research: The 10.9% of the variance in mobile money service adoption that remains unexplained by the model highlights the need for further research to identify additional influential factors. These could include demographic variables, technological advancements, cultural influences, economic conditions, and other contextual factors. Future studies could incorporate these additional variables to develop a more comprehensive model that explains a larger proportion of the variance in mobile money service adoption.

4.13. ANOVA Test

The ANOVA test displayed the regression coefficients and the residual sum of squares, along with their respective degrees of freedom. The ANOVA table presented a statistically significant F value of 442.174, which is critical for assessing the overall significance of the regression model.

The ANOVA table provides critical statistical measures that highlight the robustness and explanatory power of the regression model employed. The table indicates the relationship between the predictor variables and the dependent variable (ADP). The high F value of 442.174, combined with a very low P-value of 0.000, signifies a strong overall fit of the regression model to the observed data. This indicates that the variation explained by the model is significantly greater than the unexplained variation, underscoring the model's statistical significance.

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

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7734.981	7	1104.997	442.174	.000[b]
	Residual	942.126	377	2.499		
	Total	8677.106	384			
a. Dependent Variable: ADP						
b. Predictors: (Constant), PK, PR, PV, SI, EE, PE, FC						

Source: (Own Survey result, 2024)

The F value of 442.174 suggests that the regression model explains a substantial portion of the variance in the dependent variable. The extremely low P-value (0.000) indicates that the probability of the observed F value occurring under the null hypothesis is extremely low. This means that the variation explained by the model is significantly greater than what could be expected by chance, confirming the model's overall statistical significance.

Hypothesis Testing: In hypothesis testing, the null hypothesis (H0) posits that all regression coefficients are zero, indicating that no predictor variable has an effect on the dependent variable. Conversely, the alternative hypothesis (H1) asserts that at least one regression coefficient is non-zero, meaning at least one predictor variable significantly affects the dependent variable. Given the P-value of 0.000, we reject the null hypothesis in favor of the alternative hypothesis. This rejection confirms that at least one of the independent variables significantly impacts the dependent variable, validating the relevance of the chosen predictors.

Interpretation of Results: The rejection of the null hypothesis confirms that the model includes significant predictors, providing a meaningful explanation of the dependent variable's behavior. This finding is crucial as it demonstrates the relevance of the predictors in explaining the variability in ADP. The ANOVA results, complemented by the regression coefficients, indicate that the predictors collectively offer a robust explanation of the dependent variable, reinforcing the model's credibility and utility. Implications for the Study: The significance of the regression model underscores the effectiveness of the predictors in capturing underlying patterns within the data. This enhances the model's credibility and its potential applications. Researchers and practitioners can rely on the model to make predictions and inferences about the dependent variable based on the significant predictors identified. The statistical significance of the model provides a robust foundation for further exploration and potential intervention strategies.

In summary, the statistically significant F value of 442.174 and the corresponding P-value of 0.000 provide compelling evidence that the regression model includes at least one predictor variable that significantly influences the dependent variable. This supports the study's alternative hypothesis and underscores the importance of the selected predictors in explaining the dependent variable. The study's findings offer a solid basis for further analysis and practical applications, highlighting the model's robustness and utility in predicting and understanding mobile money service adoption.

4.14. Regression Coefficients and Their Contributions

Table 12 Coefficient variables analysis

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.760	.332		2.292	.022	.108	1.413
	PE	.412	.047	.386	8.780	.000	.320	.504
	EE	.125	.043	.124	2.907	.004	.041	.210
	SI	.137	.038	114	3.623	.000	.212	.063
	FC	.347	.056	.310	6.170	.000	.236	.457
	PV	-.029	.028	-.027	-1.021	.308	-.085	.027
	PR	-.121	.024	-.092	-4.970	.000	-.169	-.073
	PK	.474	.059	.313	8.050	.000	.358	.590
a. Dependent Variable: ADP								

Source: (Own Survey result, 2024)

Summary of Regression Coefficients and Their Contributions

The regression analysis aimed to determine the contribution of various predictor variables to the adoption of mobile money services (the dependent variable). Table 12 presents the regression coefficients for each independent variable, allowing for the formulation of the regression equation. The equation elucidates the relationships and relative impact of each predictor on the dependent variable.

Formulated Regression Equation

$$ADP=0.760+0.412PE+0.125EE+0.137SI+0.347FC-0.029PV-0.121PR+0.474PK$$

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

- **Analysis**: Performance Expectancy generated a p-value of 0.000, which is less than 0.05 at the 95% confidence level. The coefficient for PE is 0.412.
- **Conclusion**: The hypothesis is accepted, and Performance Expectancy has a positive significant impact on the adoption of Telebirr mobile money service. This means a one-unit increase in PE results in a 41.2% increase in adoption.

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

- **Analysis**: Effort Expectancy had a p-value of 0.004, which is less than 0.05 at the 95% confidence level. The coefficient for EE is 0.125.
- **Conclusion**: The hypothesis is accepted, and Effort Expectancy has a significant positive impact on the adoption of Telebirr mobile money service. A one-unit increase in EE results in a 12.5% increase in adoption.

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

- **Analysis**: Social Influence produced a p-value of 0.000, which is less than 0.05 at the 95% confidence level. The coefficient for SI is 0.137.
- **Conclusion**: The hypothesis is accepted, significant influence on the adoption of Telebirr mobile money service. A one-unit increase in SI results in a 13.7% increase in adoption. This implies that social influence negatively affects the adoption of the service.

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

- **Analysis**: Facilitating Conditions had a p-value of 0.000, which is less than 0.05 at the 95% confidence level. The coefficient for FC is 0.347.
- **Conclusion**: The hypothesis is accepted, and Facilitating Conditions have a positive significant impact on the adoption of Telebirr mobile money service. A one-unit increase in FC results in a 34.7% increase in adoption.

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

- **Analysis**: Price Value produced a p-value of 0.308, which is greater than 0.05 at the 95% confidence level. The coefficient for PV is -0.029.
- **Conclusion**: The hypothesis is rejected. Price Value does not have a significant influence on the adoption of Telebirr mobile money service.

H6: Perceived Risk (PR) has a significant influence on the adoption of Telebirr mobile money services.

- **Analysis**: Perceived Risk had a p-value of 0.000, which is less than 0.05 at the 95% confidence level. The coefficient for PR is -0.121.

- **Conclusion**: The hypothesis is accepted, and Perceived Risk has a negative significant impact on the adoption of Telebirr mobile money service. A one-unit increase in PR results in a 12.1% decrease in adoption.

H7: Perceived Knowledge (PK) has a significant influence on the adoption of Telebirr mobile money services.

- **Analysis**: Perceived Knowledge had a p-value of 0.000, which is less than 0.05 at the 95% confidence level. The coefficient for PK is 0.474.
- **Conclusion**: The hypothesis is accepted, and Perceived Knowledge has a positive significant impact on the adoption of Telebirr mobile money service. A one-unit increase in PK results in a 47.4% increase in adoption.

Based on the corrected regression analysis, the significant predictors of ADP (Adoption of mobile money service) are:

- Performance Expectancy (PE)
- Effort Expectancy (EE)
- Social Influence (SI)
- Facilitating Conditions (FC)
- Perceived Risk (PR)
- Perceived Knowledge (PK)

Final Revised Regression Model: Considering only the significant predictors, the final model is:

$$ADP=0.760+0.412PE+0.125EE+0.137SI+0.347FC-0.121PR+0.474PK$$

4.14. Summary Testing of Hypothesis Results

Table 13testing Hypothesis results summary

No.	Hypotheses	Decision	Reason
H1	The adoption of Tele-birr's mobile money service is significantly influenced by performance expectancy (PE).	Accepted	P=0.000<0.05 β=0.412
H2	Effort expectancy (EE) has a substantial impact on the use of Tele-birr mobile money.	Accepted	P=0.004<0.05 β=0.125
H3	Social influence (SI) has a considerable impact on the use of Tele-birr mobile money.	Accepted	P=0.000<0.05 β=0.137
H4	Facilitating conditions (FC) have a substantial impact on the use of Tele-birr mobile money services.	Accepted	P=0.000<0.05 β=0.347

H5	The price value (PV) has a considerable impact on the use of Tele-birr mobile money service.	Rejected	P=0.308>0.05 β=0.029
H6	The perceived risk (PR) has a considerable influence on the uptake of tele-birr mobile money services	Accepted	P=0.000<0.05 β= -0.121
H7	Perceived knowledge (PK) significantly influences the uptake of tele-birr mobile money services.	Accepted	P=0.000<0.05 β=0.474

Source: (Own Survey result, 2024)

The adoption of Tele-birr's mobile money service is significantly influenced by performance expectancy (PE). The hypothesis was accepted because the p-value was 0.000, which is less than the 0.05 threshold at a 95% confidence level, and the β value was 0.412. This demonstrates that performance expectancy has a significant positive impact on the adoption of Tele-birr mobile money services. Specifically, a one-unit increase in performance expectancy results in a 41.2% increase in the use of Tele-birr services. This finding is consistent with previous research by Venkatesh et al. (2003), Lema (2017), and Haile (2015).

Effort expectancy (EE) has a substantial impact on the use of Tele-birr mobile money. This hypothesis was accepted as well, with a p-value of 0.004, which is less than 0.05, and a β value of 0.125. This indicates that effort expectancy significantly influences the use of Tele-birr services. The β value suggests that a one-unit increase in effort expectancy leads to a 12.5% increase in the adoption of Tele-birr services. This aligns with the findings of Venkatesh et al. (2003), Haile (2015), and Ezeh and Nwankwo (2017).

Social influence (SI) has a considerable impact on the use of Tele-birr mobile money. The hypothesis was accepted because the p-value was 0.000, which is less than 0.05, and the β value was 0.137. This confirms that social influence has a significant positive impact on the adoption of Tele-birr services. The β value indicates that a one-unit increase in social influence leads to a 13.7% increase in the adoption of Tele-birr services.

This finding is consistent with Venkatesh et al. (2003), who emphasized the role of social influence in technology adoption. Facilitating conditions (FC) have a substantial impact on the use of Tele-birr mobile money services. The hypothesis was accepted with a p-value of 0.000, which is less than 0.05, and a β value of 0.347. This shows that facilitating conditions significantly influence the use of Tele-birr services. A β value of 0.347 suggests that a one-unit

increase in facilitating conditions leads to a 34.7% increase in the adoption of Tele-birr services, highlighting the importance of having the necessary resources and support for using Tele-birr services.

The perceived risk (PR) has a considerable influence on the uptake of Tele-birr mobile money services. The hypothesis was accepted with a p-value of 0.000, which is less than 0.05, and a β value of -0.121. This demonstrates that perceived risk significantly influences the uptake of Tele-birr services. The β value indicates a negative relationship, meaning that higher perceived risk leads to a decrease in the adoption of Tele-birr services. This is a common finding in studies of technology adoption, where perceived risk often acts as a barrier.

Perceived knowledge (PK) significantly influences the uptake of Tele-birr mobile money services. The hypothesis was accepted because the p-value was 0.000, which is less than 0.05, and the β value was 0.474. This indicates that perceived knowledge significantly influences the uptake of Tele-birr services. A β value of 0.474 is the highest among the variables, suggesting that a one-unit increase in perceived knowledge leads to a 47.4% increase in the adoption of Tele-birr services. This underscores the importance of users' knowledge and understanding in the adoption of mobile money services.

Only the price value (PV) has a considerable impact on the use of Tele-birr mobile money service. This hypothesis was rejected because the p-value was 0.308, which is greater than 0.05 and the β value was 0.029. This indicates that price value does not have a significant impact on the adoption of Tele-birr services. The β value is also very low, suggesting that changes in price value have minimal effect on the adoption rate.

4.13. Diffusion of Tele-birr Utilization Analysis

Table 14 Diffusion and regression analysis

Inter-Item Correlation Matrix								
	Diffusion	PE	EE	SI	FC	PV	PR	PK
Diffusion	1.000	.887	.878	.731	.931	.754	.195	.902
PE	.887	1.000	.876	.764	.837	.694	.250	.802
EE	.878	.876	1.000	.641	.843	.684	.318	.778
SI	.731	.764	.641	1.000	.759	.702	.190	.655
FC	.931	.837	.843	.759	1.000	.705	.168	.889
PV	.754	.694	.684	.702	.705	1.000	.261	.637
PR	.195	.250	.318	.190	.168	.261	1.000	.195
PK	.902	.802	.778	.655	.889	.637	.195	1.000

Analysis of Diffusion and Other Variables:

PE (0.887): There is a strong positive correlation between Diffusion and Performance Expectancy, indicating that as performance expectancy increases, the diffusion of Tele-birr services also increases.

EE (0.878): Effort Expectancy also shows a strong positive correlation with Diffusion, suggesting that easier usage leads to higher adoption rates.

SI (0.731): Social Influence has a strong positive correlation with Diffusion, highlighting the role of social networks in promoting the adoption of Tele-birr services.

FC (0.931): Facilitating Conditions have the strongest positive correlation with Diffusion, underscoring the importance of resources and support in the diffusion process.

PV (0.754): Price Value shows a strong positive correlation with Diffusion, indicating that perceived value for money plays a significant role in adoption.

PR (0.195): Perceived Risk has a weak positive correlation with Diffusion, suggesting that while it influences adoption, its impact is less pronounced compared to other factors.

PK (0.902): Perceived Knowledge has a very strong positive correlation with Diffusion, indicating that the more knowledgeable users are about the service, the more likely they are to adopt it.

High Correlations: High correlations between independent variables (e.g., PE and EE, PE and FC) suggest potential multicollinearity issues. Multicollinearity can affect the reliability of the coefficient estimates in the regression model. It's essential to check for multicollinearity using metrics such as Variance Inflation Factor (VIF) and potentially address it by removing or combining variables.

Strong Predictors: Variables with strong correlations to Diffusion (e.g., FC, PK, PE, EE) are likely to be strong predictors in the regression model. These variables should be emphasized in strategies aimed at increasing the adoption of Tele-birr services.

Weaker Predictors: Perceived Risk (PR) has a relatively weak correlation with Diffusion. While it is statistically significant, its practical impact may be less compared to other factors.

4.13.1 Model Summery Regression Analysis

Table 15 Diffusion Summery Model

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.967[a]	.935	.934	1.79026
a. Predictors: (Constant), PK, PR, PV, SI, EE, PE, FC				
b. Dependent Variable: Diffusion				

The model summary of the regression analysis provides significant insights into the effectiveness and fit of the model in predicting the diffusion of Tele-birr mobile money services. The correlation coefficient (R) is 0.967, indicating a very strong positive relationship between the predictors (Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Price Value (PV), Perceived Risk (PR), and Perceived Knowledge (PK)) and the diffusion of Tele-birr services. This suggests that these independent variables collectively have a substantial linear relationship with the dependent variable.

The R Square value of 0.935 signifies that 93.5% of the variability in the diffusion of Tele-birr services can be explained by the model, highlighting its high explanatory power. The Adjusted R Square, at 0.934, is very close to the R Square, indicating that the model is robust and not overfitting, even after accounting for the number of predictors.

The standard error of the estimate, which is 1.79026, shows the average deviation of the observed values from the regression line. This relatively low value indicates that the data points are closely clustered around the regression line, suggesting a good fit of the model to the data.

In summary, the model summary indicates that the regression model is highly effective in predicting the diffusion of Tele-birr mobile money services. The strong R and R Square values, coupled with the minimal difference between R Square and Adjusted R Square and the low standard error, confirm that the predictors are significant and reliable in explaining the adoption of Tele-birr services. This underscores the importance of factors such as performance expectancy, effort expectancy, social influence, facilitating conditions, price value, perceived risk, and perceived knowledge in driving the diffusion of Tele-birr mobile money services.

4.13.2 ANOVA

The ANOVA table provides critical insights into the overall effectiveness and significance of the regression model in predicting the diffusion of Tele-birr mobile money services. The regression sum of squares, amounting to 17497.946, indicates the extent to which the variability in the diffusion of Tele-birr services is explained by the predictors included in the model. Conversely, the residual sum of squares, totaling 1208.303, represents the unexplained variability in the dependent variable after considering the regression model. The total sum of squares, encompassing both the regression and residual sums, stands at 18706.249, reflecting the total variability in the diffusion of Tele-birr services.

Table 16 Diffusion ANOVA

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	17497.946	7	2499.707	779.928	.000[b]
	Residual	1208.303	377	3.205		
	Total	18706.249	384			
a. Dependent Variable: Diffusion						
b. Predictors: (Constant), PK, PR, PV, SI, EE, PE, FC						

The degrees of freedom associated with the predictors (7) and the residuals (377) allow for the estimation of statistical parameters. The mean square values, calculated by dividing the sum of squares by their respective degrees of freedom, provide insights into the average amount of variability per degree of freedom for both regression (2499.707) and residuals (3.205).

The notably high F-statistic of 779.928 indicates that the regression model as a whole is highly significant in explaining the variability in the diffusion of Tele-birr services. Additionally, the extremely low p-value (0.000) associated with the F-statistic reinforces the model's statistical significance, suggesting that the predictors collectively have a substantial impact on Tele-birr adoption. These findings underscore the significance of factors such as Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Price Value (PV), Perceived Risk (PR), and Perceived Knowledge (PK) in understanding and predicting the diffusion of Tele-birr mobile money services.

4.13.3 Diffusion coefficient analysis

The coefficients table provides valuable insights into the relationship between the predictor variables (Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Price Value (PV), Perceived Risk (PR), and Perceived Knowledge (PK)) and the diffusion of Tele-birr mobile money services.

Table 17Diffusion coefficient analysis

Coefficients				
Model		Unstandardized Coefficients		Standardized Coefficients
		B	Std. Error	Beta
1	(Constant)	2.357	.376	
	PE	.308	.053	.197
	EE	.237	.049	.160
	SI	-.072	.043	-.041
	FC	.531	.064	.323
	PV	.223	.032	.143
	PR	-.083	.028	-.043
	PK	.615	.067	.276

Source: (Own Survey result, 2024)

Unstandardized Coefficients: Constant (Intercept): The constant term of 2.357 represents the expected value of the diffusion of Tele-birr services when all predictor variables are zero.

PE (Performance Expectancy): A one-unit increase in PE is associated with a 0.308 increase in the diffusion of Tele-birr services, holding all other variables constant.

EE (Effort Expectancy): A one-unit increase in EE corresponds to a 0.237 increase in the diffusion of Tele-birr services, controlling for other variables.

SI (Social Influence): For each unit increase in SI, there is a decrease of 0.072 in the diffusion of Tele-birr services, controlling for other factors.

FC (Facilitating Conditions): A one-unit increase in FC leads to a 0.531 increase in the diffusion of Tele-birr services, keeping other variables constant.

PV (Price Value): An increase of one unit in PV results in a 0.223 increase in the diffusion of Tele-birr services, controlling for other factors.

PR (Perceived Risk): Each unit increase in PR is associated with a decrease of 0.083 in the diffusion of Tele-birr services, holding other variables constant.

PK (Perceived Knowledge): A one-unit increase in PK corresponds to a 0.615 increase in the diffusion of Tele-birr services, controlling for other factors.

Standardized Coefficients (Beta):

PE: The standardized coefficient (Beta) of 0.197 indicates the relative importance of PE in predicting the diffusion of Tele-birr services compared to other variables.

EE: With a Beta of 0.160, EE also has a significant impact on diffusion, albeit slightly less than PE.

SI: has a negligible impact on diffusion, as indicated by its low Beta value of -0.041.

FC: has the highest standardized coefficient (Beta = 0.323), indicating its strong influence on the diffusion of Tele-birr services among the predictor variables.

PV: also plays a moderate role in predicting diffusion, with a Beta of 0.143.

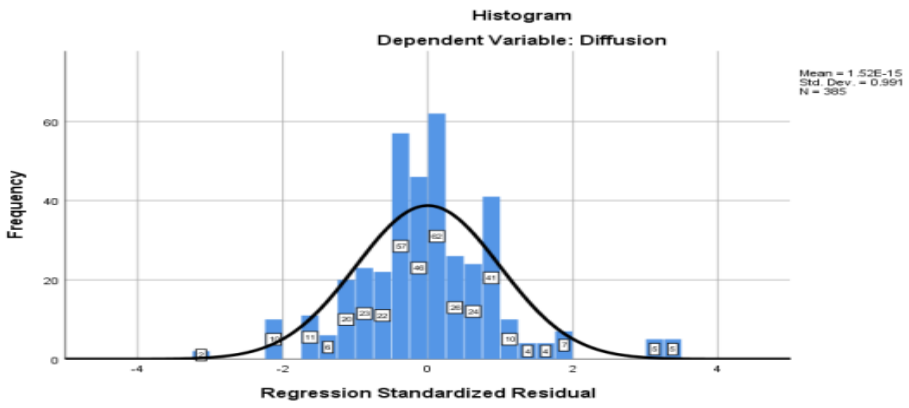
PR: has a minimal impact on diffusion, as reflected by its low Beta value of -0.043.

PK: has a substantial impact on diffusion, with a Beta of 0.276, indicating its relative importance in predicting Tele-birr adoption.

4.13.4 Normality Test of Data

The histogram of regression standardized residuals for the dependent variable "Diffusion" illustrates a distribution that is approximately normal, evidenced by the bell-shaped curve superimposed on the data**.**

Figure 6 Diffusion Histogram



The mean of the residuals is approximately zero (1.52E-15), and the standard deviation is 0.991, indicating a reasonable spread around the mean. With 385 observations, the histogram reveals a relatively symmetric distribution with a slight positive skew, suggesting a few more positive

residuals than negative ones. The peak is quite pronounced, potentially indicating higher kurtosis, though this would require further statistical validation. Notably, there are outliers on both ends of the distribution, with residuals around -4 and 4, implying that some observations are not well-predicted by the regression model. The highest frequency of residuals falls between -1 and 1, indicating that most predictions closely match the actual values. Overall, the residuals' approximate normality supports the linear regression assumptions, but the presence of outliers suggests that further examination of these specific cases and potentially the model itself might be necessary to enhance its predictive accuracy.

4.14. Discussion of Diffusion and Adoption Relation on Tele Birr Utilization

The relationship between the adoption of Tele-birr Mobile Money Service and the diffusion of Tele-birr is intricately intertwined, reflecting the dynamics of how new technologies spread within a community or market. Adoption refers to individuals' willingness to use or continue using Tele-birr, influenced by factors such as performance expectancy, effort expectancy, social influence, and perceived value. These factors shape users' perceptions and attitudes towards Tele-birr, ultimately influencing their decision to adopt the service.

As individuals begin to adopt Tele-birr based on positive experiences and perceived benefits, the diffusion of Tele-birr within the community or market begins to occur. Diffusion refers to the spread or dissemination of Tele-birr services among the population, reflecting how widely and rapidly the service is being adopted by users. Thus, the adoption of Tele-birr by an increasing number of individuals contributes to the diffusion of the service, indicating a broader acceptance and usage within the target population. There is a hypothesized positive correlation between the adoption of Tele-birr and its diffusion; as more individuals adopt Tele-birr services, the diffusion of Tele-birr is expected to increase. This suggests that a higher adoption rate leads to a more widespread and rapid diffusion of the service within the community or market. Furthermore, factors influencing the adoption of Tele-birr, such as performance expectancy, effort expectancy, social influence, and perceived value, are likely to also impact the diffusion of Tele-birr.

Factors such as performance expectancy, which reflects users' perceptions of how effectively Tele-birr enables them to accomplish tasks, and effort expectancy, which pertains to users' perceptions of how easy Tele-birr is to use, contribute to both adoption and diffusion processes.

Similarly, social influence, where individuals are influenced by the attitudes and behaviors of their social networks, plays a significant role in shaping adoption decisions and spreading Tele-birr within communities. The relationship between the adoption of Tele-birr Mobile Money Service and the diffusion of Tele-birr is complex and multifaceted, driven by various factors that influence individuals' decisions to adopt and continue using the service. Understanding this relationship is essential for providers and policymakers seeking to promote the widespread adoption and usage of Tele-birr services, thereby facilitating financial inclusion and digital transformation within their communities or markets.

The analysis of the adoption and diffusion of Tele-birr mobile money services reveals intricate interdependencies between these two key dependent variables. Adoption refers to the initial decision by users to start using Tele-birr, while diffusion encompasses the broader spread and sustained use of the service across different user segments over time. The study's findings elucidate how various factors collectively influence both adoption and diffusion, providing a holistic understanding of the dynamics at play. The inter-item correlation matrix demonstrates strong positive correlations between diffusion and critical predictors such as Performance Expectancy (PE), Effort Expectancy (EE), and Facilitating Conditions (FC).

Hypothesis testing results reinforce these findings. For example, the acceptance of H1 (performance anticipation significantly impacting adoption) with a p-value of 0.000 demonstrates the crucial role of perceived performance benefits in driving initial adoption. This is mirrored in the diffusion process, where a one percent increase in performance anticipation leads to a 35.5% increase in usage. Similarly, the acceptance of H2 (effort anticipation's significant impact) and H3 (social influence's significant impact) highlights that ease of use and social networks are pivotal in both adoption and diffusion phases. Conversely, H4's rejection (facilitating conditions not significantly impacting adoption) suggests that while facilitating conditions are important, their influence may diminish as users become more familiar with the service, focusing more on the perceived performance and ease of use. This finding aligns with Okumus et al. (2018), indicating that users may prioritize other factors over facilitating conditions when adopting mobile services.

In conclusion, the study underscores that the factors influencing the adoption of Tele-birr, such as performance expectancy, ease of use, and social influence, are equally critical in driving its diffusion. Enhancing these factors can lead to a virtuous cycle, where initial adoption facilitates

broader diffusion, and vice versa, ensuring the sustained growth and success of Tele-birr mobile money services. This dual focus on adoption and diffusion provides a comprehensive strategy for stakeholders aiming to maximize the reach and impact of mobile money technologies. By addressing both aspects, Tele-birr can achieve higher penetration and long-term engagement among users, ultimately contributing to financial inclusion and economic growth.

CHAPTER FIVE

5. SUMMARY OF MAIN RESULTS, CONCLUSION, AND RECOMMENDATIONS

5.1. Overview

This section will provide an overview of the main discoveries made during the study, along with the conclusions reached and recommendations put forth for the different parties involved. Lastly, recommendations for future research were also discussed.

5.2. Summary of Results

The aim of this study was to investigate the determinants impacting the choice of mobile money services, specifically focusing on Tele-birr in Addis Ababa. Using the Unified Theory of Acceptance and Use of Technology (UTAUT2) model, which was modified to include perceived risk and knowledge instead of hedonic drive and habit, the study examined variables such as performance expectation, effort expectation, social impact, supportive conditions, and perceived worth.

To understand the factors influencing the uptake of Tele-birr mobile money services, the study analyzed seven independent variables using a minimum of three indicators on a five-point Likert scale. A total of 385 individuals participated in the survey, with 85.3% of the responses being valid. The reliability of the constructs was confirmed with coefficient alpha values ranging between 0.703 and 0.843, indicating good reliability of the items used.

Pearson correlation analysis revealed significant positive associations among various variables. Performance Expectancy (PE) and Effort Expectancy (EE) showed strong correlations with Facilitating Conditions (FC), adoption (ADP), and Perceived Knowledge (PK). Social Influence (SI) had notable relationships with FC and Perceived Value (PV), while PV was strongly correlated with SI, FC, PE, and EE. Perceived Risk (PR) generally exhibited weaker correlations with other variables. These statistically significant relationships emphasize robust connections among the variables, suggesting potential areas for further research or practical application.

Several tests validated the assumptions of the regression analysis. Data adjustments for skewness and kurtosis ensured values within the acceptable range of +/-2. The multicollinearity

test showed tolerance values above 0.1 and VIF values below 10 for all variables. The homoscedasticity test confirmed that residuals were evenly distributed across the scatter plot, indicating normality. The regression analysis demonstrated R-values of 0.994 and R-squared values of 0.891. The ANOVA results showed an F value of 442.174 with a significance value of 0.000. Perceived Knowledge emerged as the strongest predictor of Tele-birr selection, with a beta value of 0.474. Other significant predictors included Performance Expectancy (0.412), Effort Expectancy (0.125), Social Influence (0.137), Facilitating Conditions (0.342), and Perceived Risk (-0.121). These findings highlight the critical factors that influence the adoption of Tele-birr mobile money services, providing valuable insights for future research and practical implementations.

5.3. Conclusion

The purpose of this study was to investigate the factors influencing the adoption of Tele-birr mobile cash services. The study used a validated data collection tool, with reliability confirmed by Cronbach's alpha coefficients ranging from 0.779 to 0.834. Pearson correlation analysis showed strong relationships between the independent variables (performance expectancy, effort expectancy, facilitating conditions, perceived knowledge) and the dependent variable, adoption (ADP). The data's normal distribution was confirmed through skewness, kurtosis values, and graphical methods, and no multicollinearity was detected among the variables. The study found that performance expectancy, effort expectancy, social influence, facilitating conditions, perceived value, and perceived knowledge accounted for 89.1% of the variance in Tele-birr adoption, with perceived knowledge being the most significant factor.

Perceived risk negatively influenced adoption, highlighting the importance of addressing security concerns. Facilitating conditions positively influenced adoption but were not always significant predictors in previous studies. The study also examined the relationship between adoption and diffusion, showing that factors driving adoption also significantly impact diffusion. Facilitating conditions and perceived knowledge were identified as the strongest predictors of diffusion, while social influence and perceived risk had minor impacts. Enhancing user perceptions of performance, ease of use, and facilitating conditions can drive both the initial uptake and widespread use of Tele-birr services, promoting financial inclusion and economic growth.

5.4. Recommendation

The study aimed to identify the factors affecting the adoption of mobile money services, specifically Tele-birr, in Addis Ababa. Using a modified version of the Unified Theory of Acceptance and Use of Technology (UTAUT2) model, the study examined variables such as perceived risk, perceived knowledge, performance expectation, effort expectation, social impact, supportive conditions, and perceived worth. Data was collected from 385 participants, with 85.3% valid responses. The reliability of the constructs was confirmed with coefficient alpha values ranging between 0.703 and 0.843, indicating good reliability.

The analysis revealed that perceived knowledge significantly influences the adoption of Tele-birr mobile money services. The strong statistical impact of perceived knowledge, with a coefficient of 0.474 and a p-value of 0.000, highlights the need for education and awareness-building initiatives. Ethio-telecom should prioritize educational campaigns, including workshops, tutorials, online resources, and community engagement activities, to increase users' understanding of the benefits and functionalities of Tele-birr. Integrating these efforts into marketing and promotional strategies can enhance users' perceived knowledge and confidence, leading to higher adoption and utilization rates.

Performance expectancy was found to be a significant determinant of mobile money adoption. Ethio-telecom should enhance the Tele-birr platform by adding new features and services that optimize benefits for consumers. Collaborating with government and private organizations to integrate Tele-birr into daily life can further increase its value. Social influence also plays a crucial role in adoption, suggesting that Ethio-telecom should market Tele-birr as modern, efficient, and prestigious, encouraging users to view it as a means to gain social approval from family, friends, and peers.

To increase the usage of Tele-birr, Ethio-telecom should focus on simplifying the system's usability and highlighting its practicality and social standing. Providing user-friendly interfaces, localized language options, and comprehensive support resources such as help tabs and FAQs can assist customers facing challenges. Additionally, Ethio-telecom should reconsider its service rates to attract new users and increase usage among existing clients. By prioritizing performance expectancy, ease of use, and social influence, Ethio-telecom can promote a cashless society and advance digital transformation in Ethiopia.

Despite regression results indicating that perceived risk has a limited impact on mobile money uptake, descriptive statistics suggest it remains a concern. Ethio-telecom must address security concerns to alleviate perceived risks, which significantly influence adoption in emerging markets. Emphasizing robust security measures, educating users about privacy protocols, and ensuring data protection can mitigate these concerns.

In conclusion, to address the challenges identified in the study and promote Tele-birr adoption and diffusion, several strategies are recommended. These include comprehensive user education and training programs, continuous enhancement of the user experience, fostering community engagement, investing in infrastructure development, addressing perceived risks, enhancing the value proposition, forming strategic partnerships, and establishing ongoing monitoring and evaluation mechanisms. By implementing these strategies, Ethio-telecom can overcome barriers to adoption and facilitate the widespread use of Tele-birr services, promoting financial inclusion and economic growth in Ethiopia.

5.5. Future Research Ideas

The study examined specific models (e.g., Unified Theory of Acceptance and Use of Technology) but excluded alternative factors like personal innovativeness, hedonic motivation, and image. Including these variables in future research would enhance the analysis and provide a more comprehensive understanding of adoption dynamics.

The study scrutinized various models to understand the adoption of mobile money services; however, it might have overlooked alternative models such as personal innovativeness, hedonic motivation, and image. Considering these additional models, along with moderating and mediating variables, could provide a more accurate assessment of mobile money service adoption. Moreover, the research primarily focused on the residents of Addis Ababa, potentially neglecting the broader spectrum of Ethiopia's population. Therefore, future investigations should encompass diverse regions of the country, including urban and rural areas, to capture potential variations in the impact of relevant factors on mobile money adoption across different landscapes.

Given the increasing awareness among consumers about mobile money services and the services' evolving nature, insights derived from a cross-sectional study may lack relevance in the future. Consequently, it is suggested to conduct a longitudinal study to delve deeper into

adoption behaviors at various stages of market evolution over time. This longitudinal approach promises to offer a more nuanced understanding of the dynamics shaping mobile money adoption, allowing researchers to track changes in adoption patterns and factors influencing adoption over an extended period.

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ANNEX

ANNEX I: SURVEY QUESTIONNAIRE

ADDIS ABABA UNIVERSITY, Graduate School of Journalism and Communication

MA Degree in Public Relation & Strategic Communication

Dear respondent,

Research Introduction

This study is a requirement for the partial fulfillment of a Master of Arts degree in Public Relations & Strategic Communication at Addis Ababa University Graduate School of Journalism and Communication. The primary focus of this research is the adoption and diffusion of the Tele Birr app, examining the trends and practices of Ethio Telecom in its innovative approach.

Research Focus

The Tele Birr app is an innovative financial service application introduced by Ethio Telecom, aiming to enhance digital financial inclusion and streamline mobile financial transactions in Ethiopia. This study aims to explore various aspects related to the adoption and diffusion of the app, including user acceptance, challenges faced during implementation, and the overall impact on the financial ecosystem in Ethiopia.

Objectives of the Study

1. To Analyze Adoption Rates: Examine how quickly and widely the Tele Birr app has been adopted among different demographic groups within Ethiopia.
2. To Understand User Experience: Investigate user satisfaction levels and the usability of the app, identifying any barriers to its effective use.
3. To Evaluate Marketing Strategies: Assess the effectiveness of Ethio Telecom's marketing and promotional strategies in driving the adoption of the Tele Birr app.
4. To Identify Challenges: Identify and analyze the challenges faced by users and Ethio Telecom during the adoption and diffusion process.
5. To Measure Impact: Evaluate the socio-economic impact of the Tele Birr app on users, including its effect on financial inclusion and accessibility.

Importance of the Study

This research is significant as it contributes to understanding how technological innovations, specifically in the financial sector, can be effectively introduced and adopted in developing

economies. The findings of this study will provide valuable insights for Ethio Telecom and other stakeholders on best practices and strategies to enhance the adoption and diffusion of digital financial services.

Confidentiality Assurance

We assure you that all responses to this survey will be held strictly confidential. The information gathered will be used solely for academic purposes, ensuring the privacy of all participants. Personal identifiers are not required, and responses will be anonymized to protect your identity.

Participation Request

Your participation in this survey is crucial for the success of this research. By sharing your experiences and insights, you will contribute to a deeper understanding of the factors influencing the adoption and diffusion of the Tele Birr app. We greatly appreciate your time and effort in participating in this study.

Contact Information

If you have any questions or need further clarification regarding this study, please feel free to contact the researcher:

Researcher Name: Yemnetfire Yalew

Email: yemnetfre20@gmail.com

Phone: +251 92 020 2413

Institutional Affiliation: Addis Ababa University Graduate School of Journalism and Communication

Thank you.

Part I: Demographic data: please tick mark your preference.

1. Age (in Years):

1. 18-25
2. 26 - 35
3. 36 - 45
4. 46 - 55
5. Above 55

2. Gender:

1. Male
2. Female

3. Occupation/Work:

1. Unemployed
2. Self-employed
3. Private organization employees
4. Government employees
5. Others

4. Highest educational level achieved:

1. Primary/elementary
2. Secondary/TVET
3. BA/BSc degree.
4. MA/M.Sc. degree
5. Advanced MA/M.Sc.

5. Monthly income (in BIR):

1. Up to 5,000
2. 5,001 - 10,000
3. 10,001 - 15,000
4. 15,001 - 20,000
5. Over 20,000.

6. How frequently do you utilize Telebirr service?

1. Always
2. Often.
3. Sometimes
4. Rarely never

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

1. Send money.
2. Deposit cash.
3. Withdraw cash.
4. Purchase airtime/package.
5. Receive money.
6. Use Telebirr to pay bills, merchant fees, utilities, tickets, and traffic penalties.
7. Financial services (Telebirr Mela, Sanduk, and Endekise).
8. All

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 under the dedicated answer. Which is labeled as 1. Strongly Disagree 2. Disagree 3. Neural 4. Agree 5. Strongly Agree

Items		**1**	**2**	**3**	**4**	**5**
Performance Expectancy		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	Telebirr's services come in handy in my daily routine.					
2	Using Telebirr solutions improves my work efficiency.					
3	Using Telebirr services boosts my likelihood of reaching goals.					
4	Telebirr allows me to perform tasks more rapidly.					
Effort Expectancy						
5	Understanding ways to operate Telebirr is simple for me.					
6	My conversations with the Telebirr system are easy to comprehend.					
7	I found Telebirr simple to operate with.					
8	It is straightforward for me to acquire skilled abilities to utilize Telebirr solutions.					
Social Influence						
9	People that are essential to me (family, friends, and relatives) believe that I ought to utilize Telebirr services.					
10	People who affect my decisions and actions believe that I should use Telebirr's offerings.					
11	People who make decisions I appreciate recommend that I use Telebirr services.					
12	People that are essential to me advise that I use Telebirr solutions.					
Facilitating conditions						
13	I have the resources required to use Telebirr services.					
14	I am knowledgeable enough to use Telebirr services.					
15	Telebirr offerings are consistent with the various other					

	technologies I utilize.					
16	When I encounter issues when utilizing Telebirr services, I can seek assistance from others.					
Perceived value						
17	Telebirr's offerings are adequately perceived.					
18	Telebirr service provides excellent value for the price that I pay.					
19	Telebirr services are currently viewed as providing high value.					
20	I may conserve cash by using Telebirr products.					
Perceived risk						
21	Utilizing Telebirr services exposes my Telebirr account to potential fraudulent activity.					
22	I believe using Telebirr services exposes my Telebirr account to financial risk.					
23	I think that employing Telebirr services puts my privacy at danger.					
24	If I utilize Telebirr services, hackers may gain access to my account.					
Perceived knowledge						
25	When required I will receive sufficient advice from the organization regarding Telebirr services.					
26	I've received adequate information regarding the advantages of using Telebirr services.					
27	In broad terms, I am aware of Telebirr's services. Adoption of mobile payment services					
Adoption of mobile money service						
28	I intend to keep employing Telebirr's offerings in the years to come.					
29	I will continue to attempt to use Telebirr offerings in everyday situations.					
30	I intend to continue to use Telebirr's services occasionally.					

31	I suggest that people use Telebirr services.					

Thank you for your precious time!

Part III Diffusion questions

1. To what extent do you agree that Ethio Telecom's approach to adopting and promoting the Tele birr App is innovative?

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

2. How likely are you to recommend the Tele birr App to others based on your experience with it?

1. Very unlikely
2. Unlikely
3. Neutral
4. Likely
5. Very likely

3. How satisfied are you with Ethio Telecom's communication and marketing efforts in promoting the Tele birr App?

1. Very dissatisfied
2. Dissatisfied
3. Neutral
4. Satisfied
5. Very satisfied

4. Rate the ease of use and accessibility of the Tele birr App on a scale of 1 to 5.

1. Very difficult
2. Difficult
3. Neutral
4. Easy
5. Very easy

5. Have you noticed any significant changes in your financial transactions since using the Tele birr App?

1. No change
2. Slight improvement
3. Moderate improvement
4. Significant improvement
5. Dramatic improvement

6. How likely are you to continue using the Tele birr App in the future?

1. Very unlikely
2. Unlikely
3. Neutral
4. Likely
5. Very likely

7. How important do you think it is for Ethio Telecom to continue innovating and improving the Tele birr App in order to stay competitive in the market?

1. Not important at all
2. Slightly important
3. Neutral
4. Important
5. Very important

አባሪ 1፡ የአማርኛ ዳሰሳ ጥናት መጠይቅ

አዲስ አበባ ዩኒቨርሲቲ፣ የጋዜጠኝነት እና ኮሙኒኬሽን ድግሪ ትምህርት ቤት

የህዝብ ግንኙነት እና ስልታዊ ግንኙነት ውስጥ MA ዲግሪ

ውድ ምላሽ ሰጪ

ይህ ጥናት በአዲስ አበባ ዩኒቨርሲቲ የጋዜጠኝነት እና ኮሙኒኬሽን ድህረ ምረቃ ትምህርት ቤት የህዝብ ግንኙነት እና ስትራቴጂክ ኮሙኒኬሽን ኤምኤ ዲግሪ በከፊል ለመጨረስ የታሰበ ነው። ጥናቱ የሚያተኩረው የቴሌ ብር መተግበሪያን ከሌላ መቅዳት እና በማሰራጨት ላይ ያተኮረ ነው፡ የኢትዮ ቴሌኮምን በፈጠራ አቀራረቡ ውስጥ ያለውን አዝማሚያ እና አሰራር። ለዚህ ዳሰሳ የሰጡት ምላሾች በሚስጥር እንደሚያዙ እና ሁሉም መረጃዎች ለዚህ አካዳሚክ ዓላማ ብቻ እንደሚውሉ

አረጋግጣለሁ። ስለ መልካም ትብብርዎ አስቀድመው ላመሰግናችሁ እወዳለሁ። እባክዎን ስምዎን እንዲጽፉ እንደማይገደዱ ያስተውሉ።

የምነትፍሬ ያለዉ

ስልክ፡- +251 92 020 2413

ክፍል አንድ፡ የስነሕዝብ መረጃ፡ እባክዎን በመረጡት ላይ ምልክት ያድርጉ

1. ዕድሜ (በአመታት):

1. 18-25

2. 26 - 35

3. 36 - 45

4. 46 - 55

5. ከ 55 በላይ

2. ጾታ፡-

1. ወንድ

2. ሴት

3. ስራ/ስራ፡-

1. ሥራ አጥ

2. በራስ ተቀጣሪ

3. የግል ኦርጅናል. ሰራተኛ

4. የመንግስት ሰራተኛ

5. ሌላ

4. ከፍተኛ የትምህርት ደረጃ ደርሷል፡-

1. የመጀመሪያ ደረጃ / የመጀመሪያ ደረጃ

2. ሁለተኛ ደረጃ/የቴክኒክና ሙያ ትምህርትና ሥልጠና

3. ቢኤ/ቢ.ኤስ.ሲ. ዲግሪ

4. MA/M.Sc. ዲግሪ

5. ከ MA / ኤም.ኤስ.ሲ.

5. የወር ገቢ (በብር)፡-

1. እስከ 5,000

2. 5,001 - 10,000

3. 10,001 - 15,000

4. 15,001 - 20,000

5. ከ 20,000 በላይ

6. የቴሌብርን አገልግሎት ምን ያህል ጊዜ ይጠቀማሉ?

1. ሁልጊዜ

2. ብዙ ጊዜ

3. አንዳንድ ጊዜ

4. አልፎ አልፎ

5. በጭራሽ

7. የትኛውን የቴሌብር አገልግሎት ነው የምትጠቀመው? የሚመለከተውን ሁሉ ምልክት ያድርጉ

1. ገንዘብ ይላኩ

2. ተቀማጭ ገንዘብ

3. ጥሬ ገንዘብ ማውጣት

4. የአየር ሰዓት / ጥቅል ይግዙ

5. ክፍያ ይቀበሉ

6. በቴሌብር ይክፈሉ (ለሂሳቦች፣ ለነጋዴ፣ ለፍጆታ፣ ለትኬት፣ ለትራፊክ ቅጣት ወዘተ.)

7. የፋይናንሺያል አገልግሎቶች (ቴሌብር ሜላ፣ ሳንዱክ እና እንደቅሴ)

8. ሁሉም

ክፍል II - የቴሌብር የሞባይል ገንዘብ አገልግሎቶችን መቀበልን የሚነኩ ምክንያቶች

እባኮትን ከተሰጠው መልስ ስር ምልክት በማድረግ የስምምነትዎን ደረጃ ከሚከተሉት መግለጫዎች ጋር ያመልክቱ። የትኛው ተብሎ የተለጠፈ 1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ 4. እስማማለሁ 5. በጣም እስማማለሁ

ዝርዝር	1	2	3	4	5
የአፈጻጸም ተስፋ	**በጣም አልስማማም**	**አልስማማም**	**ገለልተኛ**	**እስማማለሁ**	**በጣም እስማማለሁ**

1	የቴሌብር አገልግሎት በዕለት ተዕለት ሕይወቴ ጠቃሚ ሆኖ አግኝቻቸዋለሁ።					
2	የቴሌብር አገልግሎትን መጠቀም ምርታማነቴን ይጨምራል።					
3	የቴሌብር አገልግሎቶችን መጠቀም ነገሮችን የማሳካት እድሌን ይጨምራል።					
4	ቴሌብርን መጠቀም ነገሮችን በፍጥነት እንዳሳካ ይረዳኛል።					
የጥረት ተስፋ						
5	ቴሌብርን እንዴት መጠቀም እንዳለብኝ መማር ለእኔ ቀላል ነው።					
6	ከቴሌብር ሲስተም ጋር ያለኝ ግንኙነት ግልጽ እና ለመረዳት የሚያስቸግር ነው።					
7	ቴሌብርን ለመጠቀም ቀላል ሆኖ አግኝቼዋለሁ።					
8	የቴሌብር አገልግሎትን በመጠቀም የተካነ ለመሆን ቀላል ይሆንልኛል።					
ማህበራዊ ተጽእኖ						
9	ለእኔ አስፈላጊ የሆኑ ሰዎች (ቤተሰብ/ጓደኞች/ዘመዶች) የቴሌብርን አገልግሎት መጠቀም እንዳለብኝ ያስባሉ።					
10	በባህሪዬ ላይ ተጽእኖ የሚያሳድሩ ሰዎች የቴሌብር አገልግሎቶችን መጠቀም አለብኝ ብለው ያስባሉ።					
11	ምርጫቸውን የምከፍላቸው ሰዎች የቴሌብርን አገልግሎት ብጠቀም ይመርጣሉ።					
12	ለእኔ አስፈላጊ የሆኑ ሰዎች የቴሌብርን					

	አገልግሎት እንድጠቀም ይመክራሉ።					
ሁኔታዎችን ማመቻቸት						
13	የቴሌብርን አገልግሎት ለመጠቀም አስፈላጊው ግብአት አለኝ።					
14	የቴሌብርን አገልግሎት ለመጠቀም አስፈላጊው እውቀት አለኝ።					
15	የቴሌብር አገልግሎቶች እኔ ከምጠቀምባቸው ሌሎች ቴክኖሎጂዎች ጋር ተኳሃኝ ናቸው።					
16	የቴሌብርን አገልግሎት ለመጠቀም ሲቸግረኝ ከሌሎች እርዳታ ማግኘት እችላለሁ።					
የተገነዘበ ዋጋ						
17	የቴሌብር አገልግሎት በተመጣጣኝ ዋጋ ተከፍሏል።					
18	የቴሌብር አገልግሎት የምከፍለው ገንዘብ ጥሩ ዋጋ ነው።					
19	አሁን ባለው ዋጋ የቴሌብር አገልግሎት ጥሩ ዋጋ ይሰጣል።					
20	የቴሌብርን አገልግሎት ስጠቀም ገንዘብ መቆጠብ እችላለሁ።					
የተገነዘበ አደጋ						
21	የቴሌብር አገልግሎቶችን በመጠቀም የቴሌቢርን አካውንቴን ሊጭበረበር ይችላል።					
22	እኔ እንደማስበው የቴሌብር አገልግሎቶችን መጠቀም የቴሌብርን አካውንቴን ለገንዘብ አደጋ ያጋልጣል					
23	የቴሌብር አገልግሎቶችን መጠቀም ግላዊነትዬን አደጋ ላይ የሚጥል ይመስለኛል					

24	የቴሌብርን አገልግሎት ከተጠቀምኩ ጠላፊዎች አካውንቴን ሊቆጣጠሩ ይችላሉ።					
የተገነዘበ እውቀት						
25	ሲያስፈልግ ከቴሌብር አገልግሎት ጋር በተገናኘ ከኩባንያው በቂ መመሪያ አገኛለሁ።					
26	የቴሌብርን አገልግሎት ስለመጠቀም ስላለው ጥቅም በቂ መረጃ አግኝቻለሁ።					
27	በአጠቃላይ ስለ ቴሌብር አገልግሎት የሞባይል ገንዘብ አገልግሎት ጉዲፈቻን አውቃለሁ					
የሞባይል ገንዘብ አገልግሎት መቀበል						
28	ወደ ፊት የቴሌብርን አገልግሎት መጠቀሜን ለመቀጠል አስባለሁ።					
29	በዕለት ተዕለት ሕይወቴ ሁልጊዜ የቴሌብርን አገልግሎት ለመጠቀም እሞክራለሁ።					
30	የቴሌብር አገልግሎቶችን በተደጋጋሚ መጠቀሜን ለመቀጠል እቅድ አለኝ።					
31	ሌሎች የቴሌብር ሲስተሞችን እንዲጠቀሙ እመክራለሁ።					

ስለ ውድ ጊዜዎ እናመሰግናለን!

የቴሌ ብር መተግበሪያ ጥናት ጥያቄዎች:

1. ኢትዮ ቴሌኮም የቴሌ ብር አፕን ለማስተዋወቅ የተጠቀማቸው ዘዴዎች አዳዲስ ፈጠራዎች ናቸው ብለህ ታስባለህ/ሽ?

1 በጣም አልስማማም

2 አልስማማም

3 ገለልተኛ

4 እስማማለሁ

5 በጣም እስማማለሁ

2. በቴሌ ብር መተግበሪያ ከተጠቀምኸው በኋላ ሌሎች ሌሎች እንዲጠቀሙት ምን ያህል ትመክራለህ

1 በጣም አልመክርም

2 አልመክርም

3 ገለልተኛ

4 እመክራለሁ

5 በጣም እመክራለሁ

3. ቴሌ ብር መተግበሪያን ለማስተዋወቅ ኢትዮ ቴሌኮም የሚያደርገውን እንቅስቃሴ እንዴት ትገልፀዋለህ

1 በጣም ደስተኛ አይደለሁም

2 ደስተኛ አይደለሁም

3 ገለልተኛ

4 ተደስቻለሁ

5 በጣም ተደስቻለሁ

4. የቴሌ ቢር አፕን መጠቀም ቀላል መሆኑን ከ1 እስከ 5 ባለው መጠን ገምግም።?

1 በጣም ከባድ ነው

2 ከባድ ነው

3 ገለልተኛ

4 ቀላል ነው

5 በጣም ቀላል ነው

5. ቴሌ ቢር አፕ ከተጠቀምክበት ጊዜ አንስቶ በገንዘብ ልውውጥህ ላይ ጉልህ ለውጥ እንዳለ አስተውለሃል?

1 ምንም ለውጥ የለም

2 ትንሽ ለውጥ አለ

3 መካከለኛ መሻሻል አለ

4 ታላቅ መሻሻል አለ

5 በጣም ታላቅ መሻሻል አለ

6. ወደፊት የ ቴሌ ቢር አፕ ን መጠቀምዎን የመቀጠል እድልዎ ምን ያህል ነው?

1 በፍፁም አልጠቀምም

2 አልጠቀምም

3 ገለልተኛ

4 እጠቀማለሁ

5 በጣም እጠቀማለሁ

7. ኢትዮ ቴሌኮም በገበያ ላይ ተወዳዳሪ ሆኖ ለመቀጠል የቴሌ ቢር አፕ አዳዲስ ነገሮችን ማሻሻሉ ምን ያህል አስፈላጊ እንደሆነ ይሰማዎታል?

1 በጣም አስፈላጊ አይደለም

2 አስፈላጊ አይደለም

3 ገለልተኛ

4 አስፈላጊ ነው

5 በጣም አስፈላጊ ነው

ስለ ውድ ጊዜዎ እናመሰግናለን!