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College Of Business and Economics

Master of Business Administration

Analyzing the Factors Influencing Consumer Adoption of Mobile Payment Technologies: In the Case of Tele-birr

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ADDIS ABABA UNIVERSITY, COLLEGE OF BUSINESS AND ECONOMICS, MBA PROGRAM, IN PARTIALFULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MBA (MASTERS OF BUSINESS ADMINISTRATION).

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DECLARATION

I declared that; this research thesis is my original work. And all sources of materials used are well acknowledged.

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Analyzing the Factors Influencing Consumer Adoption of Mobile Payment Technologies: In the Case of Tele-birr

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Abstract

This study sought to investigate the factors influencing consumer adoption of Tele-birr. Quantitative research approach was utilized, which included surveys and data analysis. To attain representativeness by random sampling, a convenience sampling approach was employed with a sample size of 385 individuals. Data was gathered via an online survey questionnaire delivered via Google Forms. A model based on the Extended unified theory on acceptance and use of technology was developed to link the key variables. Multiple regression analysis was used to test the hypotheses. This study used a modified Extended unified theory on acceptance and use of technology framework and identified Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Perceived Value (PV), and Perceived Knowledge (PK) as critical factors that positively influence customer adoption of Tele-birr. These research findings are useful for mobile payment service providers, legislators, researchers, technology developers, and financial institutions alike. Understanding the individual elements that drive consumer adoption of Tele-birr can help lead the creation of effective tactics to promote its use and expedite the wider adoption of mobile payment technology.

Keywords: UTAUT, Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Perceived Value (PV), Perceived Risk (PR) and Perceived Knowledge (PK)

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Acronyms

ANOVA: Analysis Of Variance

Apis: Application Programming Interfaces

CIA: Central Intelligence Agency

EE: Effort Expectancy

ENISA: European Union Agency for Network and Information Security

FC: Facilitating Conditions

Fintech: Financial Technology

GSMA: Global System for Mobile Communication Association

IDT: Innovation Diffusion Theory

NFC: Near-Field Communication

PE: Performance Expectancy

PK: Perceived Knowledge

PV: Perceived Value

Pos: Point-of-sale

PR: Perceived Risk

QR: Quick Response

SI: Social Influence

TAM: Technology Acceptance Model

UTAUT: Unified Theory of Acceptance and Use of Technology

Chapter One

1. Introduction

1.1 Background of the study

The advent of mobile payment technologies has brought about a significant revolution in financial transactions, introducing unparalleled levels of convenience, swiftness, and safety (Raina, 2014). These advancements empower individuals to conduct transactions using their mobile devices, utilizing diverse techniques such as NFC, QR codes, and digital wallets (Agrawal, 2021). According to Raina (2014) the adoption of mobile payment services has broadened the accessibility of banking services, promoting financial inclusion and technological advancement across nations.

According to Young (2009) Mobile payment technologies refer to systems and platforms that enable financial transactions through mobile devices. These technologies leverage mobile networks, smartphones, and other mobile devices to facilitate payments, transfers, and other financial utilities.

According to the World Bank's report in 2021, there has been a notable rise in the ownership of accounts in developing economies when compared to developed economies. Specifically, from 2017 to 2021, there was an average increase of 8% in account ownership in developing economies, with the rate climbing from 63% to 71%. This indicates a substantial rise in financial inclusion across developing nations, driven in part by the adoption of mobile payment technologies. Sub-Saharan Africa, in particular, stands out as a region where mobile money accounts are highly prevalent, with approximately 33% of adults possessing such accounts (The World Bank, 2021).

Ethiopia's adoption of mobile payment systems lags behind its regional counterparts, such as Kenya, Uganda, and Tanzania, in terms of account ownership and digital payment usage. According to the World Bank's Global Findex Database, only 42% of account holders in Ethiopia, representing 20% of adults, used their accounts for digital payments, which is significantly lower than the average digital payment adoption rate of 57% across all developing economies. This figure is also lower than that of Tanzania, where 96% of account holders (50%

of all adults) used digital payments, showcasing Ethiopia's slower pace in adopting digital financial services (The World Bank, 2021).

Ethiopia's account ownership is primarily tied to traditional financial institutions, with only 5% of account owners having a mobile money account, much lower than the Sub-Saharan Africa average of 33%. This discrepancy highlights unique barriers to mobile money adoption in Ethiopia, including the need for broader access to technology and increased use of digital payment methods (Abebe F. a., 2020).

World Bank's Global Findex Database 2021 report revealed that not owning a mobile phone is a common barrier to mobile money account ownership in Ethiopia, with 51% of unbanked respondents citing this reason. Gender disparities are also evident, with 46% of women owning a phone compared to 57% of men. Other barriers include the lack of necessary documentation for account opening, distance to mobile money agents, and the perceived costliness of financial services.

Consumer adoption of mobile payment technologies is influenced by various factors across different theoretical models, including the Technology Acceptance Model (TAM) developed by Davis (1986), Technology Diffusion Theory (TDT) developed by E.M. Rogers in 1962, and the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) developed by Venkatesh (2012) as an extension of the original model Unified Theory of Acceptance and Use of Technology.

TAM focuses on an individual's subjective evaluation of the benefits a technology or system can provide in fulfilling their needs and goals, as well as their perception of the user-friendliness and simplicity of operating the technology or system. According to Davis (1986), TAM suggests that technologies that are perceived as useful and manageable are more likely to be adopted.

TDT highlights the importance of how well a new technology aligns with an individual's established beliefs, perceived simplicity and low risk associated with trying out the technology, and observable results, indicating that innovations that meet user needs and are aligned with their tasks are favored (Ali, 2015).

The Extended unified theory on acceptance and use of technology model improves on and extends prior technology adoption models by including new elements and structures, increasing

its prediction potential and practical applications. In terms of predictive power, the UTAUT2 model provides a more comprehensive understanding of technology adoption by taking into account not just performance and effort expectancy, but also social impact, Facilitating conditions, hedonic incentives, perceived value, and habit. This increased set of characteristics enables more precise predictions of people's intentions to accept and use technology. (Venkatesh V. &., 2016).

These models provide a comprehensive framework for understanding the multifaceted factors influencing consumer adoption of mobile payment technologies, highlighting the importance of perceived benefits, ease of use, social influences, and the supportive environment in driving technology adoption (Tamilmani, 2020).

The Ethiopian government's insistence on mandating digital transactions for fuel purchases, predominantly through the Tele-Birr app, has been met with widespread criticism. Critics argue that this compelled adoption of Tele-Birr, a mobile money platform controlled by the state-owned Ethio Telecom, unfairly suppresses competition and undermines smaller competitors and local fintech companies. The abrupt enforcement, with minimal notice, has caused significant inconvenience among drivers and industry observers, exacerbated by issues such as account activation problems, password recovery difficulties, and system glitches. Furthermore, the government's apparent bias towards Tele-Birr over alternatives like Safaricom's M-Pesa, which faced delays in securing a mobile money license, is viewed as protectionist and potentially detrimental to the fintech sector's growth and broader economic development. This approach raises serious doubts about the government's commitment to fostering a genuinely competitive digital economy and the potential adverse effects on consumer choice and innovation in the digital payment domain (Ethiopia's new digital fuel payment system records over 24 billion birr transaction, 2023).

1.2 Statement of the Problem

The rapid adoption of mobile payment technologies according to Abebe (2020) has transformed how consumers conduct financial transactions. Understanding the characteristics that influence consumer acceptance of mobile payment systems in Ethiopia is critical for maximizing usage and fostering financial inclusion (Abebe F. &., 2020).

In Ethiopia, due to the scarcity of conventional banking options, Tele-birr has become a groundbreaking tool to advance financial inclusivity and spur the uptake of digital transactions (Yimam, 2023). Capitalizing on its significant customer following and wide-reaching network, Ethio Telecom has utilized its strong market position to roll out Tele-birr as a user-friendly and easily accessible mobile payment service for a vast audience (Adame, 2021).

Ethio telecom reported 34.5 million Tele birr subscribers in 2023, which is a small proportion of the population. Even if each subscription is unique, they account for only 28.6% of the total population. Just 42% of account holders in Ethiopia, or 20% of adults, used their accounts to make digital payments. Ethiopia's digital payment adoption percentage is much lower than the average rate of 57% in all developing nations. This figure is also lower than in Tanzania, where 96% of account holders (50% of all adults) used digital payments, indicating Ethiopia's delayed adoption of digital financial services (The World Bank, 2021).

The importance of studying Tele-birr lies in its potential impact on consumer behavior, financial habits, and the overall financial ecosystem in Ethiopia. As one of the primary mobile payment platforms in the country, Tele-birr has the potential to drive the adoption of digital payments and reshape the way individuals and businesses engage in financial transactions (Yimam, 2023) (Muhaba, 2023).

Despite the growing interest in mobile payment technologies, there is a significant lack of understanding in existing literature about the specific elements that encourage consumer uptake of Tele-birr (Atalay, 2022). The existing literature in the field of mobile payments primarily focuses on global trends, experiences from other countries, and general factors influencing mobile payment adoption for banks (Abebe F. &., 2020). Although, there is a scarcity of focused research examining the unique elements contributing to Tele-birr adoption within the Ethiopian context. This research seeks to address the following knowledge gap:

The current body of literature does not offer a thorough grasp of the particular elements that motivate consumer adoption of Tele-birr (Muhaba, 2023). This study aims to pinpoint and scrutinize the specific factors influencing consumer adoption, encompassing perceived advantages, simplicity of use, security issues, trustworthiness, accessibility, and awareness.

By tackling this knowledge deficit, this research endeavors to enrich the existing literature with detailed insights into the factors driving consumer adoption of Tele-birr in Ethiopia. The outcomes of this study will be instrumental for policy makers, financial organizations, and service companies in developing targeted strategies to boost the adoption and application of Tele-birr, thereby fostering financial inclusivity and propelling the digital economy forward in Ethiopia.

To address this problem, it is crucial to identify the key determinants that influence consumer adoption of Tele-birr. Factors such as Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Perceived Value, Perceived Risk, Perceived Knowledge, Habit and Hedonic Motivation may play pivotal roles in shaping consumer attitudes and behaviors towards Tele-birr adoption (Muhaba, 2023). Furthermore, socio-cultural, economic, and regulatory factors unique to the Ethiopian context may also impact consumer adoption patterns (Workneh, 2014).

Therefore, performing a thorough analysis of the elements that sway consumer adoption of digital payment technologies is crucial to provide guidance for policymakers, financial entities, and service providers (Abebe F. a., 2020). By understanding these factors, stakeholders can develop targeted marketing strategies, improve user experiences, address barriers, and promote the benefits of mobile payment services, ultimately fostering financial inclusion and advancing the digital transformation of the Ethiopian economy (Workneh, 2014).

1.3 Research Questions:

- To what extent does performance expectancy affect adoption of Tele-birr?
- To what extent does effort expectancy affect the adoption of Tele-birr?
- To what extent does social influence affect adoption of Tele-birr?
- To what extent does facilitating conditions affect adoption of Tele-birr?
- To what extent does the perception of risk influence the adoption of Tele-birr?
- To what extent does price value affect adoption of Tele-birr?
- To what extent does perceived knowledge affect the adoption of Tele-birr?

1.4 Objective of the study

The goal of this investigation is to dissect the elements that prompt consumer adoption of Tele-birr, a mobile payment innovation spearheaded by Ethio Telecom in Ethiopia.

1.4.1 Specific objectives of the study

The specific objectives of the study are:

- To Study the effect of performance expectancy on consumers' decisions to adopt Tele-birr.
- To Investigate the effect of effort expectancy on consumers' decisions to adopt Tele-birr.
- To Evaluate the impact of social influence on consumers' decisions to adopt Tele-birr.
- To Analyze the effect of facilitating conditions on consumers' decisions to adopt Tele-birr.
- To Examine the effect of perceived risk on consumers' decisions to adopt Tele-birr.
- To Investigate the effect of perceived value on consumers' decisions to adopt Tele-birr.
- To Assess the effect of perceived knowledge on consumers' decisions to adopt Tele-birr.

By achieving these objectives, the study aims to provide valuable insights into the factors influencing the adoption of Tele-birr mobile payment services.

1.6 Significance of the Study

This study holds considerable significance for several reasons. It enhances our understanding of consumer behavior in financial transactions by investigating the adoption factors of mobile payment technologies, assisting service providers, policymakers, and financial institutions in developing more effective strategies to promote the adoption of mobile payment solutions such as Tele-birr. Furthermore, the insights generated from this research empower service providers, including Ethio Telecom, to improve their marketing strategies, enhance user experiences, and address adoption challenges, leading to increased consumer engagement and usage. Governments and regulatory bodies can utilize the study's findings to formulate policies and regulations that support the growth of mobile payment technology, contributing to financial inclusion and economic progress. Additionally, by examining the influences on adoption, this study promotes financial inclusion in Ethiopia, particularly for those without access to traditional banking services. Finally, it enriches the academic discussion on consumer behavior and mobile

payment technologies within Ethiopia, providing a foundation for future research and scholarly inquiry. Ultimately, the study's importance lies in its ability to generate practical benefits for service providers, policymakers, and researchers, thereby fostering the adoption and skilled use of mobile payment technologies like Tele-birr and advancing financial inclusion in Ethiopia.

1.7 Scope of the study

The scope of this research study analyzing the factors influencing consumer adoption of mobile payment technologies, specifically focusing on Tele-birr, within the framework of the extended unified theory on acceptance and use of technology theory, encompasses the following aspects:

Geographic Scope

This study will be conducted within the geographical boundaries of Ethiopia, with a particular emphasis on the adoption of Tele-birr as a mobile payment technology. The research will target consumers residing in various regions of Ethiopia to ensure a diverse representation of participants.

Participant Profile

The study will target a wide range of participants who have experience or knowledge of mobile payment technologies, including Tele-birr. Participants may include individuals from different age groups, genders, and educational backgrounds, aiming to gain a holistic view of consumer adoption behaviors.

Extended unified theory on acceptance and use of technology framework

The primary theoretical framework guiding this study is the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2). The research will focus on exploring the constructs of UTAUT2, namely performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, and price value, to understand their influence on consumer adoption of Tele-birr.

Methodology Scope

The research will employ a quantitative research approach with exploratory research design, utilizing a survey questionnaire as the primary data collection instrument. The survey will be

administered to a sample of participants, and their responses will be analyzed to identify significant factors influencing Tele-birr adoption. The survey included closed-ended questions to gather quantitative insights.

1.8 Limitations

It is important to acknowledge the limitations of this study. The research will be restricted to the information and data obtained from the survey responses of the participants. The findings may be influenced by self-reported biases and may not capture the entire population's perspectives. Additionally, the study's scope is confined to the extended unified theory on acceptance and use of technology framework and may not encompass all possible factors influencing consumer adoption.

By clearly defining the scope of the study, this research aims to provide valuable insights into the factors influencing consumer adoption of Tele-birr and contribute to the existing body of knowledge on mobile payment technologies within the Ethiopian context.

Chapter Two

2. Literature Review

2.1 Introduction

According to Bezovski (2016) mobile payment technologies have witnessed remarkable growth and are transforming the financial industry worldwide. As smartphones become increasingly prevalent and digital transactions grow in importance, mobile payments have evolved into a quick and effective method of payment, serving as a modern alternative to traditional payment techniques. This section delves into the significance of mobile payment technologies, providing a theoretical foundation, conducting an empirical review, and establishing a conceptual framework for the study.

2.2 Importance of Mobile payment technologies

Technologies within the realm of mobile payments have witnessed significant expansion and are significantly reshaping the financial landscape in Ethiopia, despite the fact that only around 20% of the population has access to digital payment systems, as per data from The World Bank (2021). The rising prominence of mobile payment technologies in Ethiopia can be traced back to several contributing factors, including heightened smartphone usage, addressing the constraints of limited banking infrastructure, enhancing convenience and accessibility, advancing financial inclusion, governmental backing and regulation, and other influential elements (Workneh, 2014).

1. Convenience and Accessibility: Mobile payments enable users to execute transactions at any time and from any location, using their cell phones or other handheld devices. This ease of use eliminates the need for actual wallets, cash, or cards, allowing for simple transactions with little effort. Mobile payment solutions enable easy and immediate payment operations, considerably increasing customer convenience (Andi Wijaya, 2022).
2. Enhanced Financial Inclusion: As noted by Aijaz A. Shaikh in 2023, mobile payment technologies have played a crucial part in aiding economic inclusion, particularly in locations with no conventional banking facilities. Mobile payments allow individuals without access to traditional banking infrastructure to participate in the financial ecosystem, empowering them to make payments, receive funds, and engage in financial activities (Abebe F. &., 2020).

3. Enhanced Security: Raina (2014) states that mobile payment technologies use advanced security features such as tokenization, biometric verification, and encryption to protect consumers' financial information. When compared to traditional payment methods, mobile payments provide an additional degree of protection against theft and unapproved transactions.
4. Improved Efficiency and Cost Savings: According to Medius (2023), mobile payments improve the payment process by eliminating the need for tangible currency transfer and reducing transaction times. For businesses, mobile payments can enhance operational efficiency by automating payment processes and reducing the costs associated with cash handling and reconciliation.
5. Mobile banking technologies frequently interact with other apps and services, including reward programs, digital wallets, and personal finance management applications. This integration provides users with a comprehensive financial ecosystem, allowing them to manage their finances, track expenses, and access additional benefits through a single platform. (Raina, 2014)
6. Innovation and Technological Advancements: According to Bezovski (2016) Mobile payment technologies continue to evolve, driven by ongoing technological advancements and innovation. This includes the integration of new technologies, for example Near Field Communication, QR codes, and digital wallets, enabling new payment experiences and expanding the possibilities for mobile payments.
7. Impact on Small Businesses: Mobile payment technologies have particularly benefited small businesses by offering cost-effective payment solutions and providing low-cost payment solutions and allowing them to take electronic transactions with no requirement for costly infrastructure. This has opened up new business opportunities and expanded market reach for small merchants and entrepreneurs (Afeti, 2022).
8. The increasing adoption of mobile payment technologies has led to a shift in consumer habits, with greater numbers of individuals enjoying the ease and perks of electronic commerce. This change in customer habits has prompted businesses to respond to the shifting payment environment and provide alternative methods of payment to fulfill client expectations (Liu, 2020).

The growing significance of mobile payment technologies has resulted in increased competition among payment service providers, financial institutions, and technology companies (Tricarico, 2023). This competition drives continuous innovation and the development of new features and functionalities to enhance the mobile payment experience. Shaping the future of payments and altering how consumers and organizations participate in financial transactions As mobile payment technologies develop, their impact on the financial industry is expected to expand even more (Abebe F. &., 2020).

2.3 Theoretical Background

Several theories and models have been developed since the 1960s to explain technology usage behavior, with notable ones including the Technology Acceptance Model (TAM) by Fred Davis, Innovation Diffusion Theory (IDT) developed by E.M. Rogers in 1962, and the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. This section outlines the theory selected for the research study, which aligns with both the research question and objectives.

The Technology Acceptance Model

According to Davis (1989), technology acceptance occurs in three stages, typically beginning by outside forces such as system design elements that trigger cognitive reactions, notably the degree to which individuals perceive how easy it is to use the technology and the extent to which individuals believe how useful the technology would be. These cognitive responses are subsequently translated into an emotive response, which is defined by an attitude toward technology use and intention of behavior. Finally, the affective response determines the actual use behavior.

According to Ma, Qingxiong & Liu, Liping (2005), the Theory of Acceptance proposes that a person's decision to accept or reject an item of technology is based on two key factors: perceived ease of use and perceived usefulness.

Perceived usefulness, as defined by Davis F. D. (1989), pertains to the belief that employing a specific technology will boost performance or increase productivity in a given task or setting. When individuals view a technology as beneficial, they are inclined to embrace and utilize it. Similarly, perceived ease of use, also highlighted by Davis (1989), signifies the level at which

individuals find a technology simple to operate, requiring little mental or physical exertion. The perception of a technology being user-friendly increases the likelihood of its acceptance and adoption.

Perceived ease of use and perceived usefulness are direct determinants of an individual's attitude towards using a technology as acknowledge by the Theory of Acceptance, which subsequently impacts their decision to adopt it. Both attitude and intention are crucial indicators of whether someone will actually adopt a technology (Ma, 2005).

Furthermore, the Theory of Acceptance by Ma, Qingxiong & Liu, Liping (2005) recognizes that outside variables such as social influence, facilitating conditions, and personality traits can all influence technological acceptance and adoption. For example, social norms, the availability of technical support, and personal characteristics such as innovativeness and prior experience can all impact a person's choice to embrace or reject an innovation.

Innovation Diffusion Theory

E.M. Rogers published Innovation Diffusion Theory in 1962, which attempts to illuminate why and how novel concepts, innovations, goods, or actions are adopted and spread by people or groups within a community. Everett Rogers developed the idea in 1962, and it provides insights into how innovations are conveyed, accepted, and eventually integrated into social systems (Ali, 2015).

According to the theory, the adoption and diffusion of innovations occur through a series of stages, and the rate of adoption can vary among individuals or groups. In 1962, Rogers recognized five important phases of the adoption of innovations procedure:

During the initial stage, individuals become cognizant of an innovation's existence and start learning about its potential advantages and applications. Subsequently, they develop a positive attitude towards the innovation, seeking further information to weigh its pros and cons (Taylor, 2018). Following this, individuals make a deliberate choice to either adopt or abandon the innovation, influenced by their assessment of its perceived benefits and how well it aligns with their existing beliefs, values, and needs (Ali, 2015). As they move forward, individuals begin integrating the innovation into their daily lives or work processes to varying degrees. Finally, they evaluate the outcomes and results of their adoption decision; if the innovation fulfills their

expectations and delivers the anticipated benefits, they are more inclined to continue using and endorsing it (Miller, 2015).

According to Sahin (2006) the adoption of innovations hinges on several key factors identified by diffusion of innovations theory, including relative advantage, compatibility, complexity, trialability, and observability. Relative advantage refers to the perceived benefits and advantages of the innovation compared to existing alternatives, emphasizing the value proposition of the new idea. Compatibility addresses how well the innovation aligns with the values, experiences, and needs of potential adopters, suggesting that for an innovation to be accepted, it must resonate with the audience's existing lifestyle or work practices. Complexity highlights the perceived difficulty or ease of understanding and using the innovation, indicating that innovations perceived as too complex may face resistance (Sahin, 2006). Trialability allows potential adopters to experiment with the innovation on a limited scale before committing fully, providing a safety net that can encourage adoption (Miller, 2015). Observability focuses on the visibility of the innovation's results and benefits, meaning that when the outcomes are clear and observable, the innovation becomes more appealing to others. Together, these factors play a crucial role in determining the success of an innovation's adoption (Ali, 2015).

Innovation Diffusion Theory, initially proposed by E.M. Rogers in 1962, has been broadly utilized across various sectors, encompassing technology adoption, healthcare, agriculture, and organizational transformation. By comprehending the elements that shape the adoption and dissemination of innovations, researchers and practitioners can devise tactics to expedite the adoption process, ultimately culminating in the successful implementation and widespread utilization of novel concepts or technologies (Sahin, 2006).

Unified Theory on Acceptance and Use of Technology Model

The Unified Theory on Acceptance and Use of Technology (UTAUT) model, developed by Venkatesh in 2003, serves as a widely acknowledged theoretical framework aimed at elucidating and forecasting individuals' acceptance and utilization of technology. This model amalgamates and expands upon several existing theories of technology acceptance to offer a holistic understanding of the factors that influence the adoption of technology. It integrates insights from the Theory of Reasoned Action, Technology Acceptance Model, Motivational Model, Theory of Planned Behavior, Diffusion of Innovation, and Social Cognitive Theory, among others, to

provide a comprehensive framework for studying technology adoption behaviors (Momani, 2020).

The model proposes four key constructs that influence individuals' behavioral intentions and actual technology usage:

1. Performance Expectancy: This construct refers to the perceived usefulness and benefits that individuals associate with using a particular technology. It depicts the magnitude by which people think employing technology could assist them complete their work more effectively and efficiently (Venkatesh V. &., 2003).
2. Effort Expectancy: This concept focuses on the assumed simplicity and ease of utilizing technology. It represents individuals' beliefs about the level of work required to master and navigate technology successfully (Venkatesh V. &., 2003).
3. Social Influence: This construct describes the influence of social elements on technology acceptance. This contains subjective norms, which reflect individuals' perceptions of the pressure from society to utilize the innovation; and social influence, which refers to the effect of important others, such as friends, colleagues, or leaders, on an individual's decision to embrace and use the technology (Venkatesh V. &., 2003).
4. Facilitating Conditions: This construct focuses on people's perceptions about the availability of resources and support to help them use technology. It encompasses variables such as technical infrastructure, training, and support services that allow individuals to proficiently use the innovation (Venkatesh V. &., 2003).

According to Venkatesh (2003) the UTAUT model also incorporates four moderating variables that influence the strength of the relationships between the four key constructs and technology acceptance:

1. Gender: gender differences can influence individuals' perceptions and attitudes toward technology, potentially impacting their acceptance and use (Venkatesh V. &., 2003).
2. Age: Age-related factors, such as technology experience and familiarity, can influence individuals' acceptance and use of technology (Venkatesh V. &., 2003).
3. Experience: Prior experience with similar technologies or related tasks can affect individuals' perceptions of the technology and their willingness to adopt and use it (Venkatesh V. &., 2003).

4. Voluntariness: Individuals' acceptance and use of technology might be influenced by whether they believe it is optional or mandatory (Venkatesh V. &., 2003).

The UTAUT model has been widely applied in various contexts, including e-commerce, healthcare, education, and organizational settings. Researchers and practitioners can use the model to identify and comprehend the elements that impact people's acceptance and utilization of technology, thereby informing the planning and execution of initiatives to encourage successful technology adoption and utilization (Yanartaş, 2020).

The Extended Unified Theory of Acceptance and Use of Technology (UTAUT2)

The Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) is an enhanced version of the original unified theory on acceptance and use of technology model that was developed to provide a comprehensive understanding of technology acceptance and usage behavior. UTAUT2 builds upon the foundation laid by UTAUT and incorporates additional constructs and moderating factors to improve the model's explanatory power (Tamilmani, 2020).

The extended unified theory on acceptance and use of technology model comprises Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions, as mentioned above on the UTAUT framework. The UTAUT2 model further adds the following variables:

- **Hedonic Motivation:** According to Tamilmani (2020) the pleasure and enjoyment of utilizing technology. It captures the intrinsic motivation to use a technology for the sake of enjoyment and fun.
- **Price Value:** The perceived value or benefit an individual expects to gain from using a technology in comparison to its monetary cost. It represents the ratio between the perceived benefits and the price paid for the technology. (Tamilmani, 2020)
- **Habit:** The degree to which an individual performs technology usage behavior automatically, without conscious thought or effort. Habit reflects the repetitive and automatic nature of technology use. (Tamilmani, 2020)

Venkatesh (2016) expanded the Unified Theory on Acceptance and Use of Technology (UTAUT) to include several moderating variables that affect the relationships between the core constructs. These moderating factors encompass gender, age, and experience. Gender differences can shape individuals' perceptions and attitudes towards technology, thereby affecting their

acceptance and use. Age plays a significant role in technology acceptance and use, as different age groups may possess varying levels of experience and familiarity with technology. Additionally, an individual's prior experience with similar technologies significantly influences their acceptance and use of new technologies. These considerations highlight the complexity of technology adoption, underscoring the importance of acknowledging and accounting for these moderating factors in research and practice (Venkatesh V. &., 2016).

Based on the research problem and objectives, Choosing the extended unified theory on acceptance and use of technology model for analyzing the factors influencing consumer adoption of mobile payment technologies, such as Tele-birr, is advantageous due to its comprehensive coverage of key factors influencing technology adoption, proven effectiveness in similar contexts, flexibility and adaptability to specific technologies and populations, focus on behavioral intentions closely linked to actual adoption behaviors, and potential for cross-cultural analysis (Venkatesh V. &., 2016). These strengths make the extended unified theory on acceptance and use of technology model a robust and suitable choice for investigating the adoption of Tele-birr, offering insights into the underlying motivations and barriers faced by consumers when considering the adoption of new technologies (Penney, 2021).

In this modified unified theory on acceptance and use of technology model, the factors of "Hedonic Motivation" and "Habit" are replaced by "Perceived Risk" and "Perceived Knowledge", offering a more nuanced understanding of the dynamics of technology acceptance and use (Sánchez-Torres, 2019) and (Wei Sun a, 2023).

- **Perceived risk:** Perceived risk refers to the potential negative outcomes or losses that an individual anticipates from adopting a new technology (Penney, 2021). This concept is widely recognized in consumer behavior and technology adoption literature, highlighting how users evaluate the risks associated with trying something new, such as a software application, a hardware device, or even a digital platform (Sánchez-Torres, 2019).
- **Perceived Knowledge:** In technological context Acceptance models, such as the extended unified theory on acceptance and use of technology, refer to an individual's conviction that they have the appropriate skills, talents, and knowledge to effectively use a specific technology. This notion is important since it directly influences an individual's propensity to engage with new technologies (Wei Sun a, 2023).

The introduction of Perceived Knowledge as a construct in extended unified theory on acceptance and use of technology model reflects the model's expansion beyond organizational settings to encompass consumer technology acceptance. In consumer settings, perceived knowledge is particularly relevant because individuals often lack the structured training and support available in organizational contexts (ELLIS, 2015). Therefore, enhancing perceived knowledge through educational campaigns, user-friendly interfaces, and accessible support resources can significantly increase the adoption rates of new technologies among consumers (Wei Sun a, 2023).

Previous versions of the unified theory on acceptance and use of technology model, including extended unified theory on acceptance and use of technology, have been critiqued for not including perceived risk as a construct (Sunayna Khurana, 2019). This omission is significant because perceived risk is a critical factor in consumer technology adoption, especially in contexts where users are evaluating the potential downsides of adopting a new technology (Sánchez-Torres, 2019). By adding Perceived Risk, the model becomes more robust and capable of explaining a wider variety of adoption behaviors (Chen, 2023).

Perceived risk and perceived knowledge address aspects of decision-making processes that are crucial in environments where users are evaluating the benefits against potential downsides or assessing their capability to use a technology (Chen, 2023) (Wei Sun a, 2023) (Sánchez-Torres, 2019). These factors can influence whether individuals decide to adopt a new technology, especially if they perceive significant risks or uncertainties about their ability to use it effectively (Muhaba, 2023).

2.4 Empirical review

The empirical review of earlier studies like Venkatesh (2016), and Muhaba (2023) provides valuable insights and evidence that support the formulation of hypotheses related to independent variables such as performance expectancy, effort expectancy, social influence, facilitating conditions, perceived value, perceived risk, and perceived knowledge and its influence on the behavioral intention to use technology. By examining previous research, we can validate and establish the relationship between independent variables and technology adoption.

2.4.1 Performance expectancy (PE)

Several research have looked into the connection between performance expectations and behavioral intentions to use technology in a variety of contexts. For example, Venkatesh (2016) discovered that performance expectancy is a strong predictor of intention to employ technology in both voluntary and mandatory circumstances. This finding implies that when people believe that utilizing technology would improve their job performance, they are more likely to plan to utilize it.

Chen (2023) on m-learning intentions in Taiwan revealed that students' satisfaction and intentions to use mobile learning increased when they perceived it as engaging and believed it would improve their learning performance and effectiveness. This finding further supports the positive association between performance expectancy and intention to use technology.

Moreover, Lema (2017), and Haile (2015) both found that performance expectancy significantly influenced the adoption of mobile financial services. This indicates that users' belief in the ability of mobile financial technologies to enhance their financial management and transaction processes positively influences their intention to adopt and use the technology. Based on these empirical findings, we can support the formulation of the following hypothesis:

H1: Performance expectancy (PE) positively influences Tele-birr mobile money service adoption.

2.4.2 Effort expectancy (EE)

Studies within the unified theory on acceptance and use of technology framework and related theories have examined how users' perceptions of the ease of use influence their intention to adopt and utilize technology. For instance, Venkatesh (2016) found that perceived ease of use, which is closely related to effort expectancy, significantly influences users' intention to use technology. When individuals perceive that a technology is easy to learn, understand, and operate, they are more likely to develop a positive intention to use it.

Additionally, studies focusing on specific technologies have provided further support for the relationship between effort expectancy and behavioral intention. For example, in a study by Tarhini (2018) on the Factors Influencing the Adoption of Online Shopping, it was found that users' perception of the ease of use of online shopping platforms positively influenced their

intention to use them. Similarly, a study by Alkhaldi (2018) on Customer's Intention to Adopt Mobile Banking Services revealed that users' perception of the ease of use significantly influenced their intention to adopt mobile banking services. These empirical findings support the formulation of the following hypothesis:

H2: Effort expectancy (EE) positively influences Tele-birr mobile money service adoption.

Effort expectancy plays a crucial role in shaping users' perceptions and attitudes towards technology, as it directly impacts their perceptions of the simplicity and user-friendliness of the system (Sunayna Khurana, 2019).

2.4.3 Social influence (SI)

Research examining the impact of social influence and other variables on users' intentions to use technology by Chen (2023) revealed that social impact plays a considerable role in technology adoption. This phenomenon is well-documented within the Unified Theory on Acceptance and Use of Technology framework and its related theories. Findings from Tarhini (2018) show a robust positive relationship between social influence and the intention to use technology, indicating that peer opinions and societal norms significantly sway individuals' decisions to adopt new technologies.

Venkatesh (2016) discovered that users' intention to use technology is highly influenced by the impact of influential people, such as friends, colleagues, and supervisors. When individuals perceive that important people in their social environment support and encourage the use of a technology, they are more likely to develop a positive intention to use it.

Furthermore, studies focusing on specific technologies have provided additional evidence of the impact of social influence on behavioral intention. For instance, a study by Kulviwat (2009) revealed that the influence of friends and family members significantly influenced users' intention to use these platforms. Similarly, research by Chen (2023) found that social influence, including recommendations from friends and family, positively influenced users' intention to adopt mobile payment. Based on these empirical findings, we can support the formulation of the following hypothesis:

H3: Social influence (SI) positively influences Tele-birr mobile money service adoption.

2.4.4 Facilitating conditions (FC)

According to Tamilmani (2020) Facilitating conditions (FC) refer to the extent to which individuals perceive the availability of resources, support, and infrastructure necessary for using a particular technology or system. It is one of the key constructs in the Unified Theory of Acceptance and Use of Technology (UTAUT) framework and is known to influence users' behavioral intention to adopt and use technology (Venkatesh V. &., 2003).

Venkatesh (Venkatesh V. &., 2016) found that facilitating conditions, including technical support, training, and availability of necessary equipment, significantly influenced users' intention to use technology. Users who perceived that they had the required resources and support were more motivated to adopt and utilize the technology effectively. Moreover, studies in specific domains have provided further evidence of the impact of facilitating conditions on behavioral intention. For example, in the context of e-learning, a study by Tarhini (2014) revealed that the availability of technical support, access to computers, and reliable internet connection positively influenced students' intention to use e-learning platforms. Based on these empirical findings, we can support the formulation of the following hypothesis:

H4: Facilitating conditions (FC) positively influences Tele-birr mobile money service adoption.

2.4.5 Perceived value (PV)

According to Fernández (2007) Perceived value refers to the benefit that individuals associate with the price or cost of a product, service, or technology. It is a construct that captures the trade-off between the perceived benefits and the monetary cost of adopting and using a particular technology.

A study by Kunze (2007) on the adoption of online music services found that perceived price value significantly influenced users' intention to subscribe to the services. When individuals perceive that the benefits or value, they receive from a technology outweigh the monetary cost or price they have to pay, they are more likely to have a positive intention to adopt and use it. For example, Based on the empirical findings, we can support the formulation of the following hypothesis:

H5: Perceived value (PV) positively influences Tele-birr mobile money service adoption.

2.4.6 Perceived risk (PR)

According to Featherman (2003), perceived risk (PR) is a perceptual assessment of the possibility of adverse consequences or concerns associated with adopting and using a specific product, service, or technology. It shows the anticipated probability and extent of the risks associated with the adoption and exploitation of a technology (Penney, 2021).

Empirical studies have extensively examined the relationship between perceived risk and technology adoption to understand how users' risk perceptions influence their intentions and behaviors. Research consistently indicates that perceived risk has a significant impact on users' intention to adopt and use technology. When individuals perceive higher levels of risk associated with a technology, they are more likely to have negative attitudes and lower intentions to adopt and utilize it. For example, a study by Featherman (2003) on the adoption of online shopping found that perceived risk significantly influenced users' intention to engage in online purchase behavior. Users who perceived higher levels of risk, such as concerns about security, privacy, or product quality, were less likely to adopt and use online shopping platforms (Penney, 2021). Based on these empirical findings, we can support the formulation of the following hypothesis:

H6: Perceived risk (PR) positively influences Tele-birr mobile money service adoption.

2.4.7 Perceived knowledge (PK)

Perceived knowledge (PK) refers to an individual's subjective assessment or belief regarding their own understanding and familiarity with a particular subject, domain, or technology. It represents the perception of one's own knowledge and expertise in relation to the specific context under consideration. (Venkatesh V. &., 2016)

Wei Sun a (2023) suggests that perceived knowledge has a significant impact on users' intention to adopt and use technology. When individuals perceive themselves to have higher levels of knowledge and expertise in a specific domain or technology, they are more likely to have positive attitudes and higher intentions to adopt and utilize it. For example, a study by Bhattacherjee (2001) on the adoption of e-commerce found that perceived knowledge significantly influenced users' intention to engage in online shopping. Based on the empirical findings, we can support the formulation of the following hypothesis:

H7: Perceived knowledge (PK) has a positive influence on the adoption of Tele-birr mobile money service.

When individuals perceive themselves to have higher levels of knowledge and expertise in a specific domain or technology, their intention to adopt and use the technology increases (Wei Sun a, 2023).

2.5 Conceptual framework

A conceptual framework visually represents the relationships between variables or study constructs (Adom, 2018). Based on a thorough analysis of theoretical and empirical literature on technology acceptance and adoption of innovations, the following factors have been identified to impact the adoption of Tele-birr services. Therefore, the conceptual framework adapted for this study is presented as follows:

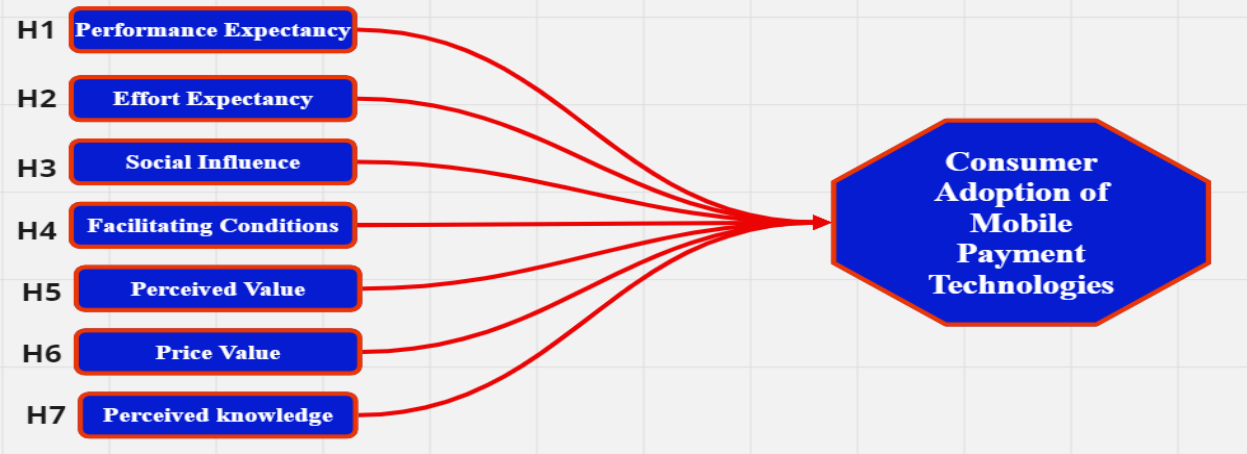


Figure 1 Conceptual framework

Source: (Venkatesh V. &., 2016)

Chapter Three

3. Methodology

3.1 Introduction

In this chapter, the research design, approach, population, sampling, data sources, collection procedure, ethical considerations, and data analysis tools for the study are outlined. The study aims to analyze the factors that influence consumer adoption of Tele-birr, a mobile payment technology in Ethiopia. To achieve this, a quantitative research approach was employed. This approach was chosen to ensure a thorough and comprehensive understanding of the topic.

3.1 Fintech companies in Ethiopia

The FinTech industry in Ethiopia has experienced notable changes as a result of regulatory reforms implemented by the current government. Particularly, the directive issued by the National Bank of Ethiopia in March 2020, which permits non-bank entities to provide mobile money services, has played a significant role in driving these transformations. (Monteiro, 2023). This has fostered a conducive environment for the growth of the sector, despite its current modest scale (Workneh, 2014).

Key players in the Ethiopian FinTech scene include Arifpay Financial Technologies, specializing in digital payment solutions (https://arifpay.net, 2024); BelCash International, operating under the brand "HelloCash" and offering digital banking platforms (https://www.belcash.com, 2023); Chapa Financial Technologies, focusing on payment gateway solutions for businesses (https://chapa.co, 2024); and Kifiya, a technology and services company that has evolved into a technology venture holding company (https://kifiya.com, 2024). These companies are pivotal in driving the digital economy and expanding financial services access in Ethiopia, addressing specific challenges and opportunities with their innovative solutions and technology-driven platforms (Monteiro, 2023).

3.1.1 Ethiopian Telecommunications Corporation

Ethiopian Telecommunications Corporation, is the state-owned telecommunications service provider in Ethiopia (Workneh, 2014). It holds the exclusive responsibility for delivering Land-line, mobile, and internet services within the nation. Established in 1996, Ethio telecom is

responsible for the planning, development, and operation of telecommunications infrastructure and services across Ethiopia (Ethiotelecom, 2024).

According to Ethio telecom (2023) it offers a range of telecommunications services to individuals, businesses, and government institutions. These services include fixed-line telephone connections, mobile telephony, internet access, data communication, and value-added services such as mobile money and content services.

Ethio telecom maintains an extensive telecommunications network infrastructure across the country. This infrastructure includes a nationwide fiber optic backbone network, mobile network towers, and various switching and transmission facilities (Ethiotelecom, 2023).

Ethio telecom operates the mobile network under the brand name "Ethio Telecom". It provides mobile voice and data services to a large subscriber base in Ethiopia. The mobile network covers a significant portion of the country, including urban centers and rural areas (Ethiotelecom, 2023).

Ethio telecom plays a crucial role in providing internet connectivity to individuals and organizations in Ethiopia. It operates the main internet gateway, which connects the country to the global internet infrastructure. Ethio telecom offers various internet access options, including broadband services and mobile internet through its mobile network (Adame, 2021).

In recent years, Ethio telecom has embarked on an ambitious expansion and modernization plan to enhance its services and infrastructure. This includes the deployment of 4G and 5G mobile networks, the expansion of fiber optic connectivity, and the launch of innovative services and technologies to cater to the increasing needs of consumers (Workneh, 2014).

According to Workneh (2014) as a state-owned telecommunications operation, Ethio telecom operates within the regulatory framework set by the Ethiopian government. The government has recently undertaken significant reforms in the telecommunications sector, including the liberalization of the market to allow the entry of private operators and the planned partial privatization of Ethio telecom.

3.1.2 Tele-birr

Tele-birr, as described by Ethio telecom in 2023, is a mobile payment system built and set up by Ethio telecom. Tele-birr provides a broad spectrum of financial services, enabling users to

deposit, withdraw, transfer, and spend money via their mobile phones. This service supports cashless transactions, including payments at stores through QR codes, online shopping, and cash withdrawals at designated outlets. With its mobile money app and extensive service offerings, Tele-birr aims to promote financial inclusion and enhance the convenience and security of financial transactions for Ethiopians.

In Ethiopia, where the availability of conventional banking services is scarce, Tele-birr has been identified as a pivotal tool for advancing financial accessibility and boosting the acceptance of digital payment methods (Workneh, 2014). Thanks to its vast customer base and widespread network reach, Ethio Telecom has effectively utilized its market dominance to roll out Tele-birr as a user-friendly and widely accessible mobile payment platform for a significant portion of the population (Adame, 2021).

The importance of studying Tele-birr lies in its potential impact on consumer behavior, financial habits, and the overall financial ecosystem in Ethiopia. As one of the primary mobile payment platforms in the country, Tele-birr has the potential to drive the adoption of digital payments and reshape the way individuals and businesses engage in financial transactions (Yimam, 2023).

By analyzing the factors influencing consumer adoption of Tele-birr, the research can give significant understanding of the barriers and motivators which contribute to the uptake of mobile payment technologies in Ethiopia. Understanding these factors can help Ethio Telecom and other stakeholders in the financial industry to refine their strategies, address challenges, and enhance the adoption and usage of Tele-birr among consumers.

Furthermore, the findings of the study can inform policymakers and regulators in shaping a conducive regulatory environment for mobile payments, ensuring consumer protection, interoperability, and healthy competition in the mobile payment landscape.

In summary, Tele-birr represents a significant mobile payment technology in Ethiopia, and studying its adoption factors is crucial for understanding the dynamics of mobile payments in the Ethiopian context, promoting financial inclusion, and informing strategic decisions for Ethio Telecom and other stakeholders in the financial industry (Adame, 2021).

3.2 Research Design

This study uses an explanatory research design, with the goal of going beyond mere description to explain and account for what was noticed. Unlike descriptive studies, which may ask 'what' questions, explanatory research seeks to answer 'why' and 'how' questions, building on exploratory and descriptive research to discover the fundamental causes of a phenomenon's occurrence (Boru, 2018).

According to Boru (2018) explanatory research aims to identify causes and explanations while offering evidence to support or contradict hypotheses or predictions. It is used to discover and report correlations between different components of the event being studied. In the context of examining factors impacting consumers' intention to use Tele-birr, an explanatory research approach allows for a more in-depth understanding of the drivers of consumer behavior and intention.

3.3 Research Approach

The research approach employed in this study is a quantitative method to gather comprehensive and reliable data. The following subsections outline the specific strategies and techniques used during the research process.

3.3.1 Quantitative Research

A Quantitative research method was employed to collect numerical data and derive statistical analyses. The main quantitative techniques used in this study included:

Survey

A structured questionnaire was created and distributed to a large sample of participants. Structure questioner is a straightforward, swift, and simple way of data collecting, with the disadvantage of limiting responders to a few options (Robinson, 2018). The survey included both closed-ended and 7-point Likert-scale questions and was sourced from Venkatesh (2016), Wei Sun a (2023), and Penney (2021) to gather quantitative data on various aspects of the research topic. This approach allowed for the collection of standardized and comparable data that could be statistically analyzed.

Data Analysis

The quantitative data was evaluated using relevant statistical approaches, including correlation analysis, descriptive statistics, and regression analysis. These analyses provided quantitative insights, patterns, and relationships within the data set, enabling the identification of significant trends and associations.

3.4 Data Sources and Types

The main source of data for this research was a survey questionnaire designed to gather numerical data on consumer adoption intention, usage patterns, and perceptions of Tele-birr. The survey encompassed various variables based on the extended unified theory on acceptance and use of technology framework, including demographic information, frequency of use, performance expectancy, effort expectancy, social influence, facilitating conditions, and other factors identified in the modified framework like perceived risk, perceived value and perceived knowledge. These variables were measured using a Seven-point Likert-Scale, where 7 indicated "strongly agree," ..., 4 represented "neutral," and 1 indicated "strongly disagree". A Likert scale, named after its creator, American social psychologist Rensis Likert, is a widely used psychometric scale in research questionnaires. It quantitatively measures opinions, attitudes, or behaviors by presenting respondents with a series of statements or questions, each followed by a range of answer options typically spanning from 'strongly agree' to 'strongly disagree'. This scale is highly adaptable and can be employed across various domains (Joshi, 2015).

3.5 Data Collection

During this stage, the survey questionnaire was administered to the selected sample, utilizing online surveys. Meticulous attention was given to designing the survey to ensure that all relevant variables associated with Tele-birr adoption and usage are captured.

3.5.1 Data Collection Procedure:

The data gathering method used a structured electronic survey as the main tool. The questionnaire, which was based on Venkatesh (2016), Wei sun (2023), and Penney (2021) theories on acceptance and use of technology, encompassed various aspects related to Tele-birr adoption and usage. These aspects included respondents' demographic profiles, such as age, gender, and education level. The questionnaire also focused on Performance Expectancy,

examining the perceived usefulness and benefits of using Tele-birr, as well as Effort Expectancy, which explored the perceived ease of use associated with the platform.

Furthermore, the survey addressed Social Influence by exploring the influence of others on the adoption of Tele-birr. Facilitating Conditions were assessed to evaluate the availability of resources and support for using Tele-birr. Perceived Value involved a cost-benefit analysis of Tele-birr usage, while Perceived Risk considered security and privacy concerns related to the platform. Additionally, participants' Perceived Knowledge of Tele-birr was evaluated.

The survey also gathered information on Consumer Adoption of Mobile Payment Technologies, including intention to use and frequency of use. Reasons for using Tele-birr and the frequency of Tele-birr service usage were also captured.

To facilitate the data collection process, the survey was administered through Google Forms, which provided an online platform for easy distribution and data collection. The survey link was shared through various online channels, including social media platforms, email lists, and websites frequented by the target population.

3.6 Target Population

To estimate the population size, factors such as the total number of mobile phone users in Ethiopia, the potential target audience for Tele-birr, or the number of individuals who have access to and are aware of Tele-birr as a mobile payment option could be considered. Total number of mobile phone users in Ethiopia according to the International Telecommunication Union (2024) is 58% of the total population which is 69.12 million people which is also the potential target audience for Tele-birr. the number of individuals who have access to and are aware of Tele-birr as a mobile payment option is hard to put in numbers but Tele-birr according to Ethiotelecom (2023), has 34.3 million subscribers with a total transaction value of 679.2 billion birr.

3.7 Sampling Size and Techniques

In this phase of the research, a sampling frame representing the target population of Tele-birr users was developed. Random sampling methods was employed to ensure a representative sample. Factors such as age and gender were considered to capture diversity.

3.7.1 Sampling Procedure

Convenience sampling was employed to meet the required sample size for this research. Convenience sampling is a non-probability sampling technique where individuals or participants are selected based on their convenient availability and accessibility. In convenience sampling, researchers choose individuals who are easily reachable and readily willing to participate in the study, without following a strict random selection process (Golzar, 2022). In this case, we would select Tele-birr users who are convenient to reach, such as customers in specific locations or individuals who are willing to participate voluntarily.

It's important to note that convenience sampling may introduce bias into the research findings since participants may not represent the entire population accurately (Golzar, 2022). However, given the budget and manpower restrictions, convenience sampling can still provide valuable insights within the limitations.

3.7.2 Sampling

Given information:

Population size (N) = 69.12 million

Confidence level = 95% (Z-value = 1.96 for a 95% confidence level)

Margin of error (E) = 5% (0.05)

Response distribution (P) = 50%

Using convenience sampling due to budget and manpower restrictions, we will select a sample size based on the desired confidence level and margin of error.

The formula to calculate the sample size for a population size of 34.3 million customers is:

n = (Z^2 * P * (1 - P)) / E^2

Plugging in the values:

Sample size = (1.96^2 * 0.5 * (1 - 0.5)) / 0.05^2

Sample size = (3.8416 * 0.25) / 0.0025

Sample size = 0.9604 / 0.0025

Sample size = 384.16

Rounding up to the nearest whole number, the required sample size is 385. Therefore, the sample size for this research, considering convenience sampling, would be 385 participants.

3.7.3 Data Quality Control

Data cleaning: After data collection, the responses were cleaned to identify and remove any incomplete, inconsistent, or invalid data. The cleaned data was analyzed using regression analysis in SPSS to assess the relationships between the variables and identify the factors influencing consumer adoption of Tele-birr. Also, various tests like normality, heteroscedasticity and multicollinearity tests were done.

3.8 Data Analysis

The data collected was evaluated with statistical tools which include SPSS. Descriptive statistics were utilized to characterize the respondents' demographic characteristics as well as the response distribution for each variable. The survey results were examined using relevant statistical methods, such as descriptive statistics, correlation analysis, and regression analysis. This analysis was useful in establishing significant correlations between variables and factors influencing Tele-birr adoption. Inferential statistical methods were used to test hypotheses about the interactions between variables and to determine the factors driving Tele-birr acceptance among consumers. In addition, regression analysis was used to calculate the relative relevance of each component in determining adoption.

3.9 Validity and Reliability of the Instruments

To ensure the quality of the research design and the validity of the study, both content validity and construct validity are assessed. According to Sekaran (2005) Content validity refers to the extent to which the measuring instrument adequately covers the topic or variables under investigation. Construct validity, on the other hand, evaluates the degree to which the measuring instrument accurately measures the intended constructs or concepts.

Table 1 Validity test using Pearson product moment correlation

		PE1	PE2	PE3	PE4	PE
PE1	Correlation	1				
	Sig					
PE2	Correlation	.640**	1			
	Sig	.000				
PE3	Correlation	.572**	.795**	1		
	Sig	.000	.000			
PE4	Correlation	.634**	.640**	.624**	1	
	Sig	.000	.000	.000		
PE	Correlation	.826**	.893**	.868**	.849**	1
	Sig	.000	.000	.000	.000	

Source: (survey 2024)

The validity of the first variable measured, performance expectancy, is shown in the table above. The correlations between the individual questionnaire items and the total score of performance expectancy are all significant, indicating that the questionnaire items for performance expectancy according to Sekaran (2005) are valid.

The validity of the questionnaire was tested using Pearson product moment correlation using SPSS. The validity test is performed by comparing the individual item questionnaire scores to the total score for each variable. Questionnaire items that have a significant correlation with the total score are valid (Sekaran, 2005). Based on the validity test the correlations between each individual item questionnaire scores and the total score for each variable are significant meaning the questionnaire is valid.

Assessing the reliability of a measuring instrument is crucial in research to ensure the consistency and accuracy of the obtained scores. As mentioned by Sürücü (2020), reliability refers to the extent to which individuals would receive similar scores each time they use the instrument. In this study, the researchers have calculated Cronbach's alpha coefficient to assess the reliability of the measuring instrument for both the dependent variable (Customers' Intention to use Tele-birr) and the independent variables (performance expectancy, effort expectancy, social influence, facilitating conditions, perceived value, perceived risk, perceived knowledge).

According to Sekaran (2005), Cronbach's alpha value serves as an indicator of instrument reliability. A value below 0.6 suggests low reliability and potential errors in the instrument, while a value above 0.7 indicates acceptable reliability. By calculating the Cronbach's alpha coefficient for the variables in this study, the researchers can determine whether the measuring instrument exhibits sufficient reliability. If the alpha values are above 0.7, it suggests that the instrument used in the study has acceptable reliability.

Table 2 Reliability test

no	variables	Cronbach's alpha	No of items in the construct
1	Performance Expectancy (PE)	0.881	4
2	Effort Expectancy (EE)	0.892	4
3	Social Influence (SI)	0.843	4
4	Facilitating Conditions (FC)	0.781	4
5	Perceived Value (PV)	0.904	4
6	Perceived Risk (PR)	0.897	4
7	Perceived Knowledge (PK)	0.856	4
8	Consumer Adoption of Mobile Payment Technologies	0.892	4
Total no of items			32

Source: (survey 2024)

The reliability statistics in Table 2 shows that the Cronbach's alpha coefficient for the variables is above 0.7, indicating high reliability. This suggests that the measuring instrument used in the study is consistent and yields reliable results. The table also provides information on the number of items (32) used in the analysis.

3.10 Ethical Considerations

Ethics revolves around academics' obligations to their respondents, audience, society at large, and the scientific community (Mirza, 2023). Ethical principles were adhered to throughout the research process. Participants provided informed consent, data privacy and confidentiality were respected, and ethical principles and regulations were followed. Using this approach and

recording quantitative patterns, a thorough investigation of the topic was undertaken, resulting in a better knowledge of the factors impacting consumer acceptance of Tele-birr.

Chapter Four

4. Data Presentation, Analysis, and Interpretation

4.1 Introduction

This chapter presents the data analysis and interpretation of the research on the factors influencing consumer adoption of Tele-birr. The analysis will explore the relationships between the independent variables (performance expectancy, effort expectancy, social influence, facilitating conditions, perceived risk, perceived value, perceived knowledge) and the dependent variable (Behavioral Intention of Tele-birr adoption).

4.2Data Response Rate

The survey was distributed to a total of 385 respondents, and 385 responses were received. This resulted in a response rate of 100%.

Table 3 Questionnaire Response Rate

Description	Number	Percentage
Questionnaires handed	385	100%
Uncollected	0	0%
Total collected	385	100%
Invalid	0	0%
Valid	385	100%

Source: (survey 2024)

4.3 Data Cleaning and Screening

The collected data was cleaned and screened to ensure accuracy and completeness. This typically involved removing incomplete responses, checking for outliers, and recoding missing values. However, in this case, there were no incomplete responses, outliers, or missing values because I used Google Forms to create and distribute the questionnaire. Google Forms provides built-in features that help minimize data entry errors and enforce response completeness, thereby reducing the likelihood of incomplete or missing data. Additionally, Google Forms also offered built-in validation checks to prevent outliers or limit the range of acceptable responses.

4.4 Respondents' Demographic Profiles

4.4.1 Age of users

The graph illustrates the distribution of Tele-birr users across different age groups. Each age group is represented by a bar that represents the number of users within that specific age range. The ages of the users range from 16 to 60 years.

Upon examining the graph, it is apparent that the highest bar corresponds to the age of 23, with 40 respondents. This is followed by the age of 22, with 38 respondents, 20 with 35 respondents, 26 with 32 respondents, 21 with 29 respondents, and so forth. This suggests that a significant proportion of Tele-birr users fall within the age range of 19 to 32. Other age groups also exhibit bars, indicating the presence of users within those categories. However, it is notable that the bars representing the younger and older age groups are comparatively shorter, indicating a relatively smaller number of users in those particular categories.

In conclusion, the graph effectively presents a visual representation of the age distribution among Tele-birr users, with a prominent concentration of users falling within the age range of 19 to 32.

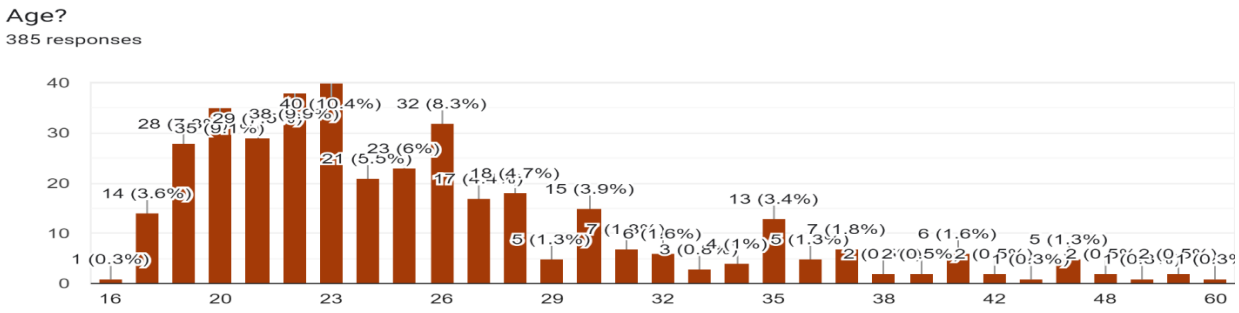


Figure 2 Age of users

Source: (survey 2024)

4.4.2 Gender of users

The study gathered data from a sample of 385 individuals, focusing on the Tele-birr platform as the central area of investigation. The goal of the study was to identify the factors that influence consumer adoption of mobile payment technology. Out of the total 385 participants, 242 (62.9%) were male, while 143 (37.1%) were female. This gender distribution provides insights into the

demographic composition of the study sample. It is important to note that the data analysis considered responses from both genders to determine these percentages.

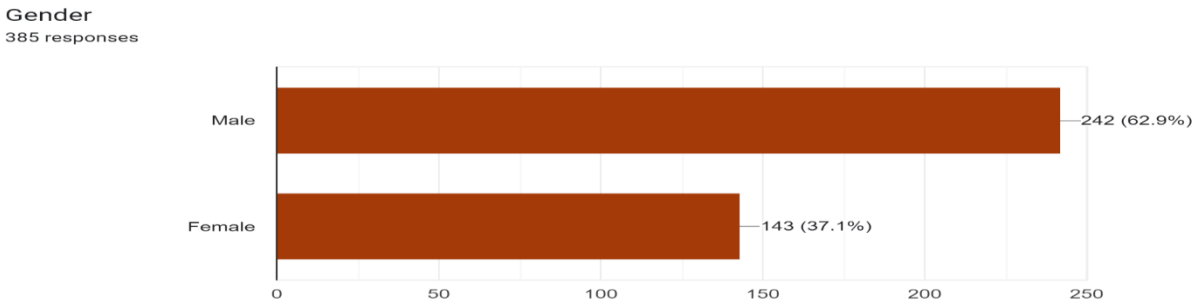


Figure 3 Gender of users

Source: (survey 2024)

4.4.3 Highest Education level

Among the 385 total respondents in the study, the highest education levels varied. Out of the participants, 1.8% (7 individuals) had completed Primary school as their highest education level. 18.4% (71 individuals) had achieved a Secondary/TVET education. The majority of respondents, accounting for 63.9% (246 individuals), held a BA/BSc degree. 15.1% (58 individuals) had pursued further education and obtained an MA/MSc degree. A small proportion of respondents, specifically 0.8% (3 individuals), had reached the highest level of academic achievement, holding a PhD.

These findings illustrate the educational diversity within the study sample, with varying levels of educational attainment represented. The largest proportion of participants had completed a BA/BSc degree, indicating a significant level of undergraduate education among the respondents. The presence of individuals with MA/MSc and PhD degrees suggests a subset of participants with advanced academic qualifications. These results provide insights into the educational backgrounds of the respondents, which will be considered in the analysis of the factors influencing consumer adoption of mobile payment technology.

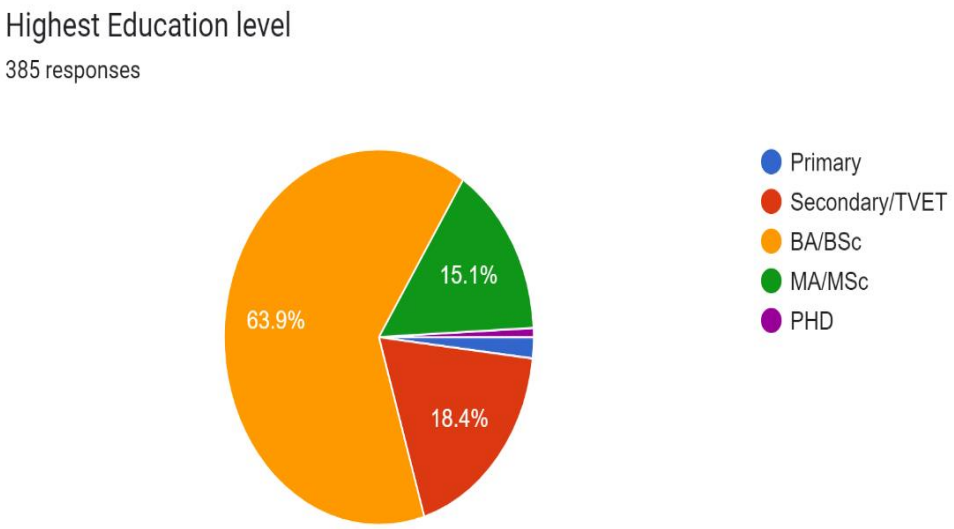


Figure 4 Highest education level for users

Source: (survey 2024)

4.5 Respondents' Mobile Money Usage Behavior

Tele-birr offers a wide range of services, such as mobile payments, money transfers, bill payments, airtime and data top-ups, online shopping, in-app purchases, digital wallet functionality, savings and investments options, microfinance services, and remittances.

Based on the survey results, the following insights were obtained. The most prevalent reasons reported by participants for using Tele-birr were buying airtime, with 307 participants indicating this as their primary utilization. Additionally, 269 participants stated that they primarily use Tele-birr for sending money, while 233 participants mentioned paying bills, merchants, tickets, utilities, traffic penalties, and other related expenses as their primary reasons for using the platform.

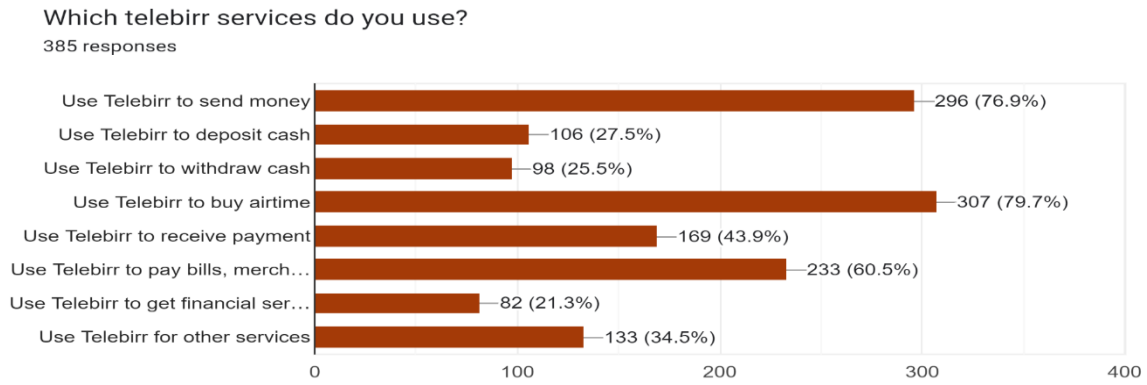


Figure 5 Respondents' Tele-birr Usage Behavior

Source: (survey 2024)

4.6 Use of Tele-birr Services

According to the analysis, 33.5% of respondents utilized Tele-birr services regularly, followed by 31.9% who did so occasionally, 21.6% who did so constantly, and 13% of respondents who used Tele-birr infrequently or rarely. This suggests that the respondents have adopted and used Tele-birr to a high degree.

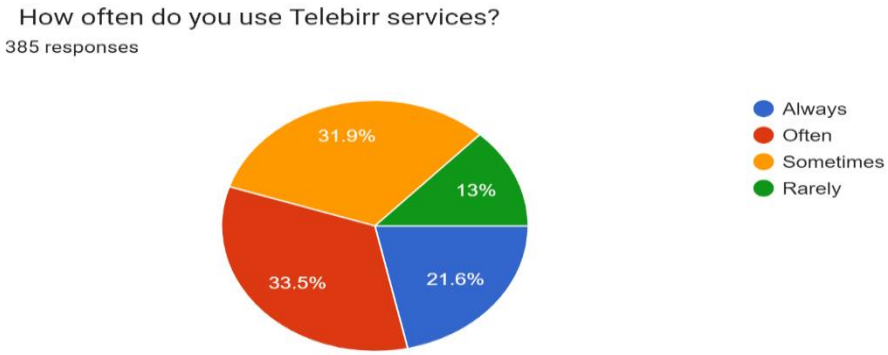


Figure 6 Use of Tele-birr Services

Source: (survey 2024)

4.7 Likert Scale Values and Analysis of Aggregated Responses

The survey used a 7-point Likert scale to measure the respondents' agreement with various statements related to the factors influencing Tele-birr adoption. The means and standard

deviations for each statement were calculated and analyzed to understand the overall perception of these factors.

Table 4 Likert Scale Values and Analysis of Aggregated Responses

n	Items	N	Mean	S. D
Performance Expectancy (PE)				
1	Using Tele-birr increases my productivity.	385	5.24	1.53
2	Using Tele-birr helps me accomplish payments quicky.	385	5.64	1.55
3	I can save time when I use Tele-birr in the payment process.	385	5.60	1.55
4	I find Tele-birr useful in my daily life.	385	5.25	1,66
Grand Mean and Standard Deviation			5.43	1.35
Effort Expectancy (EE)				
1	Learning how to use Tele-birr is easy for me.	385	5.76	1.47
2	It doesn't take a long time to learn to use Tele-birr.	385	5.61	1.53
3	I find Tele-birr easy to use.	385	5.74	1.43
4	It is easy for me to become skillful at using Tele-birr.	385	5.56	1.49
Grand Mean and Standard Deviation			5.67	1.29
Social Influence (SI)				
1	People who are important to me think that I should use Tele-birr.	385	4.91	1.65
2	People who influence my behavior think that I should use Tele-birr.	385	4.62	1.72
3	People whose opinions I value prefer that I use Tele-birr.	385	4.76	1.67
4	Most people around me are using Tele-birr.	385	5.03	1.58
Grand Mean and Standard Deviation			4.83	1.36
Facilitating Conditions (FC)				
1	I have the resources needed to use Tele-birr.	385	5.64	1.62
2	I have the knowledge needed to use Tele-birr.	385	5.94	1.37
3	Tele-birr is compatible with other technologies I use.	385	5.52	1.58
4	I can get help from others when I have difficulties using Tele-birr.	385	5.12	1.72
Grand Mean and Standard Deviation			5.56	1.23
Perceived Value (PV)				
1	Tele-birr services are reasonably priced.	385	4.59	1.80

2	The service provided by Tele-birr is worth the money I pay.	385	4.65	1.79
3	Tele-birr services are reasonably priced at the moment.	385	4.58	1.73
4	When I use Tele-birr services, I can save money.	385	4.43	1.87
Grand Mean and Standard Deviation			4.56	1.58
Perceived Risk (PR)				
1	Using Tele-birr services puts my account at risk of fraud.	385	3.38	1.79
2	I think using Tele-birr services subject my Tele-birr account to financial risk.	385	3.35	1.77
3	I believe that using Tele-birr services threatens my privacy.	385	3.50	1.88
4	Hackers might take control of my account if I use Tele-birr.	385	3.52	1.82
Grand Mean and Standard Deviation			3.44	1.59
Perceived Knowledge (PK)				
	I feel confident in my knowledge and skills to use Tele-birr effectively.	385	5.65	1.51
	I consider myself knowledgeable about the features and functionalities of Tele-birr.	385	5.48	1.54
	I believe I have a good understanding of how to use Tele-birr in different scenarios.	385	5.45	1.49
	I have received sufficient Information and education to use Tele-birr proficiently.	385	4.81	1.79
Grand Mean and Standard Deviation			5.35	1.33
Consumer Adoption of Mobile Payment Technologies				
1	I intend to continue using Tele-birr.	385	5.63	1.48
2	I will keep using Tele-birr as regularly as I do now.	385	5.45	1.54
3	My intention is to continue using Tele-birr than use any alternative means.	385	4.77	1.70
4	I will strongly recommend others to use Tele-birr.	385	5.28	1.53
Grand Mean and Standard Deviation			5.28	1.36

Source: (survey 2024)

4.8 Summary of Cumulative Responses to Items on the Likert Scale

The cumulative responses to each statement on the Likert scale were summarized to provide a visual representation of the distribution of responses. This analysis helped identify the most and least agreed-upon statements. The variables from the most agreed-upon to the least agreed-upon statements are Facilitating Conditions (FC) with a mean of 5.56 and standard deviation of 1.23, Effort Expectancy (EE) with a mean of 5.67 and standard deviation of 1.29, Perceived Knowledge (PK) with a mean of 5.35 and standard deviation of 1.33, Performance Expectancy (PE) with a mean of 5.43 and standard deviation of 1.35, Social Influence (SI) with a mean of 4.83 and standard deviation of 1.36, Consumer Adoption of Mobile Payment Technologies with a mean of 5.28 and standard deviation of 1.36, Perceived Value (PV) with a mean of 4.56 and standard deviation of 1.58, and finally Perceived Risk (PR) with a mean of 3.44 and standard deviation of 1.59.

Table 5 Summary of Cumulative Responses to Items on the Likert Scale

n	Variables	N	Mean	S. D
1	Performance Expectancy (PE)	385	5.43	1.35
2	Effort Expectancy (EE)	385	5.67	1.29
3	Social Influence (SI)	385	4.83	1.36
4	Facilitating Conditions (FC)	385	5.56	1.23
5	Perceived Value (PV)	385	4.56	1.58
6	Perceived Risk (PR)	385	3.44	1.59
7	Perceived Knowledge (PK)	385	5.35	1.33
8	Consumer Adoption of Mobile Payment Technologies	385	5.28	1.36

Source: (survey 2024)

4.9 Correlation Analysis

Correlation, as defined by Schober (2018), is a statistical metric that quantifies the extent to which two variables are linearly connected. This connection is represented by the correlation coefficient, which fluctuates between -1 and +1. A correlation coefficient of +1 denotes a flawless positive correlation, where both variables simultaneously increase or decrease. On the flip side, a coefficient of -1 represents a perfect negative correlation, with one variable rising as the other falls. A coefficient of 0 signifies the absence of correlation, indicating no linear association between the variables.

Correlation is vital across numerous disciplines, such as finance, where it assists in portfolio management by evaluating the performance relationships between different investments. Nonetheless, it's crucial to recognize that correlation does not equate to causation; merely because two variables are correlated doesn't imply one causes the other to alter. Grasping correlation is fundamental for making data-driven decisions, yet it requires careful interpretation, taking into account potential confounding factors and the nature of the variables' relationship (Schober, 2018; Senthilnathan, 2019).

Table 6 Correlation Analysis

Correlation

		Performance expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Perceived Value	Perceived Risk	Perceived Knowledge	Behavioral Intention
Performance expectancy	Correlation	1							
	Sig								
Effort Expectancy	Correlation	.526**	1						
	Sig	.000							
Social Influence	Correlation	.557**	.438**	1					
	Sig	.000	.000						
Facilitating Conditions	Correlation	.526**	.573**	.554**	1				
	Sig	.000	.000	.000					
Perceived Value	Correlation	.450**	.248**	.504**	.523**	1			
	Sig	.000	.000	.000	.000				
Perceived Risk	Correlation	-.132**	-.093	-.107*	-.106*	-.024	1		
	Sig	.009	.067	.036	.037	.637			
Perceived Knowledge	Correlation	.430**	.609**	.423**	.594**	.398**	-.024	1	
	Sig	.000	.000	.000	.000	.000	.636		
Behavioral Intention	Correlation	.664**	.516**	.642**	.634**	.588**	-.150**	.561**	1
	Sig	.000	.000	.000	.000	.000	.003	.000	

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

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

Source: (survey 2024)

The study employed correlation analysis to examine the relationships between the independent and dependent variables. The Pearson product-moment correlation coefficient was used to determine the strength and direction of the associations. The correlation coefficients ranged from -0.132 to +0.664, with the sign indicating direction and the magnitude representing strength.

Table. Example of a Conventional Approach to Interpreting a Correlation Coefficient

Absolute Magnitude of the Observed Correlation Coefficient	Interpretation
0.00–0.10	Negligible correlation
0.10–0.39	Weak correlation
0.40–0.69	Moderate correlation
0.70–0.89	Strong correlation
0.90–1.00	Very strong correlation

Figure 7 Correlation Coefficients: Appropriate Use and Interpretation

Source: (Schober, 2018)

Based on Schober (2018) results showed positive correlations between the independent variables and the dependent variable, except for a perceived risk which had a negative correlation with all the variables. Performance expectancy had a strong correlation (r = 0.664) with intention to adopt Tele-birr, followed by social influence (r = 0.557) and effort expectancy and Facilitating Conditions (r = 0.526). Perceived value and perceived knowledge had a moderate correlation (r = 0.450) and (r = 0.430) respectively, while perceived risk, had a very weak correlation (r = 0.132). In conclusion, the dependent variable had a significant relationship with all independent variables, with varying magnitudes of correlation. Therefor we further investigate the direction and magnitude/ strength of associations between them using regression analysis.

4.10 The Regression Analysis

Regression analysis is a set of statistical procedures that examine the connection between a dependent variable and one or more independent variables. It quantifies the strength and direction of these relationships, allowing predictions based on the values of the independent variables (Sarstedt, 2014). regression analysis was conducted to examine the relationships between the dependent and independent variables. The results showed significant relationship between consumers intention to Tele-birr adoption and the independent variables.

4.10.1 Test of Normality

In statistical analysis, normality refers to the assumption that data follows a normal distribution. The normal distribution, sometimes called the Gaussian distribution or the bell curve, is a symmetric probability distribution with a smooth, symmetric, bell-shaped curve.

When assessing normality, one commonly used method is the P-P (Probability-Probability) plot. A P-P plot compares the observed cumulative distribution function (CDF) of the data against the expected CDF of a normal distribution. The plot displays the observed cumulative probabilities on the y-axis and the expected cumulative probabilities on the x-axis (Chambers, 1983).

In a P-P plot, if the data points closely follow a straight line from the lower-left corner to the upper-right corner, it suggests that the data is approximately normally distributed. Deviations from the straight line indicate departures from normality (Chambers, 1983).

If the observed data points in the P-P plot deviate from the diagonal line, it indicates a departure from normality. For example, if the data points curve upward or downward away from the diagonal line, it suggests a skewness in the distribution. If the data points deviate in an S-shaped pattern, it indicates heavy-tailedness or kurtosis (Chambers, 1983).

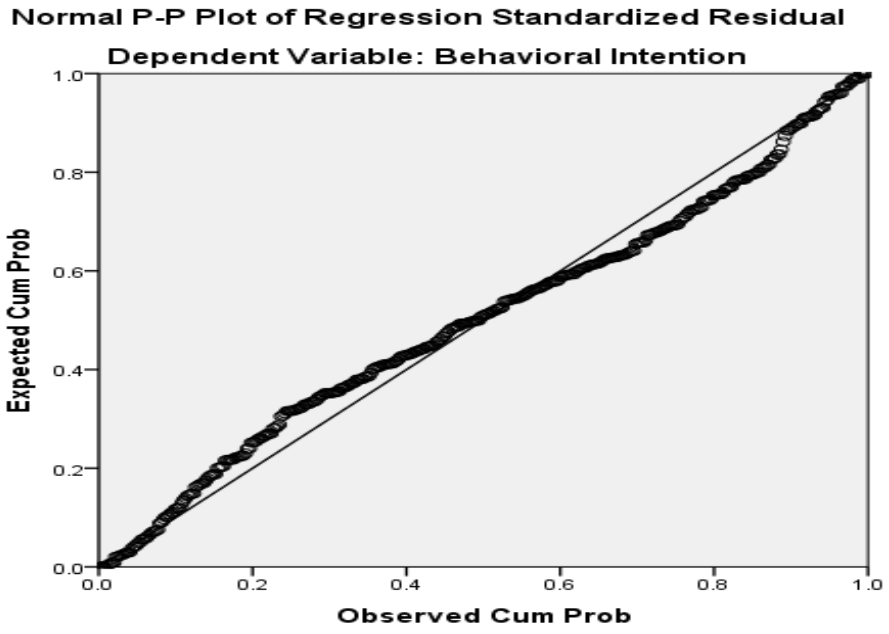


Figure 8 Normal P-P plot

Source: (SPSS Analysis 2024)

Based on P-P plot in figure 10 the data points closely follow a straight line from the lower-left corner to the upper-right corner, and also the data points don't deviate from the diagonal line it suggests that the data is approximately normally distributed.

4.10.2 Test of Multicollinearity

The presence of multicollinearity among the independent variables was tested using the Variance Inflation Factor (VIF). The VIF (Variance Inflation Factor) values measure the level of multicollinearity between independent variables in a regression analysis. It helps assess the extent to which the variables are correlated with each other, which can potentially affect the stability and interpretability of the regression coefficients (Kim, 2019).

Table 7 Test of Multicollinearity taken from coefficient table

model	Collinearity Statistics	
	Tolerance	VIF
Performance expectancy	.592	1.689
Effort Expectancy	.537	1.862
Social Influence	.548	1.823
Facilitating Conditions	.446	2.243
Perceived Value	.569	1.757
Perceived Risk	.963	1.039
Perceived knowledge	.507	1.971

Source: coefficients of the variables table

In the output in the "Collinearity Statistics" table above, the VIF values are given. Here is the interpretation of the VIF value for each variable:

Performance expectancy: VIF = 1.689

The VIF value of 1.689 suggests that there is a moderate level of multicollinearity between Performance Expectancy and the other independent variables. It indicates that Performance Expectancy shares some correlation with other predictors but is not highly collinear.

Effort expectancy: VIF = 1.862

The VIF value of 1.862 suggests that there is a moderate level of multicollinearity between Performance Expectancy and the other independent variables. It indicates that Performance Expectancy shares some correlation with other predictors but is not highly collinear.

Social Influence: VIF = 1.823

The VIF value of 1.823 suggests a moderate level of multicollinearity between Social Influence and the other independent variables. There is some correlation between Social Influence and the other predictors, but it is not highly problematic.

Facilitating Conditions: VIF = 2.243

The VIF value of 2.243 indicates a moderate level of multicollinearity between Facilitating Conditions and the other independent variables. Facilitating Conditions shares some correlation with other predictors but does not exhibit severe multicollinearity.

Perceived Value: VIF = 1.757

The VIF value of 1.757 suggests a moderate level of multicollinearity between Perceived Value and the other independent variables. There is some correlation between Perceived Value and the other predictors, but it is not highly problematic.

Perceived Risk: VIF = 1.039

The VIF value of 1.039 indicates a low level of multicollinearity between Perceived Risk and the other independent variables. Perceived Risk shows minimal correlation with the other predictors, which is favorable for the regression analysis.

Perceived Knowledge: VIF = 1.971

The VIF value of 1.671 suggests a moderate level of multicollinearity between Perceived Knowledge and the other independent variables. There is some correlation between Perceived Knowledge and the other predictors, but it is not highly problematic.

In general, VIF values below 5 are considered acceptable, indicating that multicollinearity is not a significant concern (Kim, 2019).

4.10.3 Test of Heteroskedasticity

Heteroskedasticity occurs when the variability of errors or residuals in a regression model does not remain constant across different levels of independent variables. In other words, the spread or dispersion of residuals varies with the values of the predictors (Kim, 2019).

Table 8 Test of Heteroskedasticity

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.393	.159		8.773	.000
Performance expectancy	-.060	.026	-.149	-2.306	.022
Effort Expectancy	.074	.029	.173	2.537	.012
Social Influence	-.025	.026	-.062	-.974	.331
Facilitating Conditions	-.067	.032	-.150	-2.105	.036
Perceived Value	-.055	.021	-.158	-2.584	.010
Perceived Risk	-.015	.017	-.043	-.884	.377
Perceived Knowledge	-.019	.027	-.046	-.696	.487

Source: (SPSS Heteroskedasticity test)

From table 8 Performance expectancy, Effort Expectancy, Facilitating Conditions, and Perceived Value's sig. values are below 0.05. Therefore, based on the information, these variables show heteroscedasticity at the 5% significance level. Possible solution for this problem is to transform the variables using the log transform method.

Table 9 Test of Heteroskedasticity after LOG transformation

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.075	.020		3.720	.000
Performance expectancy	.030	.028	.072	1.098	.273
Effort Expectancy	-.074	.028	-.184	-2.655	.008
Social Influence	-.003	.030	-.007	-.100	.920
Facilitating Conditions	.032	.033	.075	.989	.323
Perceived Value	.010	.028	.025	.375	.708
Perceived Risk	.024	.025	.051	.988	.324
Perceived Knowledge	.013	.029	.031	.431	.667

Source: (SPSS Heteroskedasticity test)

Looking at the Test of Heteroskedasticity after LOG transformation table, none of the independent variables have a significance levels (Sig.) less than 0.05. Therefore, based on the information from table 8, none of the variables show heteroscedasticity at the 5% significance level.

4.10.4 Determinants of Mobile Money Service Adoption

The objective of this study is to analyze the factors influencing consumer adoption of Tele-birr, a mobile payment technology introduced by Ethio Telecom in Ethiopia. The Intention to Use Tele-birr mobile money service was measured by seven variables.

Table 10 model summery

Model Summaryb

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.801[a]	.641	.635	.13350	2.102

a. Predictors: (Constant), LOG_PK, LOG_PR, LOG_PE, LOG_PV, LOG_EE, LOG_SI, LOG_FC

b. Dependent Variable: LOG_BI

Source: (SPSS Regression analysis)

The analysis of the regression model reveals important insights regarding the determinants of customer intention to adopt Tele-birr, as represented by the six independent variables: Performance expectancy, Facilitating Conditions, Social Influence, Perceived Value, Perceived Knowledge, and Perceived Risk.

The Adjusted R-square value of 0.635 indicates that approximately 63.5% of the variation observed in customer intention to adopt Tele-birr can be explained by the changes in these six independent variables. This suggests that these factors collectively have a substantial impact on shaping individuals' intentions to adopt Tele-birr, a mobile money service.

Table 11 Anova

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.048	7	1.721	96.577	.000[b]
	Residual	6.737	378	.018		
	Total	18.785	385			

a. Dependent Variable: LOG_BI

b. Predictors: (Constant), LOG_PK, LOG_PR, LOG_PE, LOG_PV, LOG_EE, LOG_SI, LOG_FC

Source: (SPSS Regression analysis)

The table reveals that the predictors, including the constant term, Effort Expectancy, Performance Expectancy, Facilitating Conditions, Social Influence, Perceived Value, Perceived Knowledge, and Perceived Risk, collectively exhibit a significant relationship with the Intention to Use Tele-birr. The model employed in this study demonstrates a statistically significant relationship with a p-value of 0.000 ($p < 0.01$), indicating that the relationship holds at a 1% significance level.

4.10.5 Hypothesis Testing and Discussions

The hypotheses proposed in the study were tested using the regression analysis. The results supported the hypotheses that performance expectancy, effort expectancy, social influence, facilitating conditions, perceived value, and perceived knowledge have a positive impact on Tele-birr adoption. But the hypotheses that perceived risk has a negative impact on Tele-birr adoption was not supported.

Table 12 coefficients of the variables

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.029	.031		-.936	.350
LOG_PE	.273	.042	.263	6.558	.000
LOG_EE	.092	.042	.092	2.198	.029
LOG_SI	.248	.046	.225	5.400	.000
LOG_FC	.102	.049	.095	2.068	.039
LOG_PV	.189	.042	.185	4.535	.000
LOG_PR	-.046	.037	-.039	-1.238	.216
LOG_PK	.192	.044	.189	4.382	.000

Source: (survey 2024)

The model summary of the multiple regression as shown in the above table indicates the following:

Intercept:

We don’t reject the possibility that consumer intention to use Tele-birr would be zero when all the independent variables are zero at 10% significance level.

Performance Expectancy:

Holding the other factors constant when performance expectancy increases by 1%, consumer intention to use Tele-birr on average increases by 0.273%. The relationship is statistically significant at 1% significance level or 99% confidence interval.

Effort Expectancy:

Holding the other factors constant when Effort expectancy increases by 1%, consumer intention to use Tele-birr on average increases by 0.092%. The relationship between Effort Expectancy and consumer intention to use Tele-birr is statistically significant at 5% significance level or 95% confidence interval.

Social Influence:

Holding the other factors constant when Social Influence increases by 1%, consumer intention to use Tele-birr on average increases by 0.248%. The relationship is statistically significant at 1% significance level or 99% confidence interval.

Facilitating Conditions:

Holding the other factors constant when Facilitating Conditions increases by 1 unit, consumer intention to use Tele-birr on average increases by 0.102%. The relationship is statistically significant at 5% significance level or 95% confidence interval.

Perceived Value:

Holding the other factors constant when Perceived Value increases by 1%, consumer intention to use Tele-birr on average increases by 0.189%. The relationship is statistically significant at 1% significance level or 99% confidence interval.

Perceived Knowledge:

Holding the other factors constant when Perceived Knowledge increases by 1%, consumer intention to use Tele-birr on average increases by 0.192% units. The relationship is statistically significant at 1% significance level or 99% confidence interval.

Perceived Risk:

The relationship between Perceived Risk and consumer intention to use Tele-birr is not statistically significant at 10% significance level or 90% confidence interval.

There could be several potential reasons for the lack of a statistically significant relationship between Perceived Risk and consumer intention to use Tele-birr in my analysis, despite the existing literature suggesting a significant relationship. Here are some possible explanations:

Sample Characteristics: The participants in this survey might have different demographic or behavioral characteristics compared to the populations studied in previous literature. This variation in sample composition could influence the relationship between Perceived Risk and consumer intention to use Tele-birr.

Measurement Differences: Differences in how Perceived Risk and consumer intention to use Tele-birr were measured in this study compared to previous research could contribute to the disparity in findings. Variances in survey questions, scales, or metrics used to assess these constructs might affect the statistical significance of their relationship.

Contextual Factors: The specific context in which this study was conducted might introduce unique factors that moderate the relationship between Perceived Risk and consumer intention to use Tele-birr. Factors such as cultural differences, market conditions, or specific features of Tele-birr might influence the perceived importance of risk in the adoption decision.

Based on the analysis, it was found that Perceived Risk (PR) does not have a statistically significant impact on Tele-birr adoption. Therefore, it is excluded from the predictive regression model, resulting in a simplified and refined final model. The final model is presented as follows:

Consumer Intention = 0.273 * Performance Expectancy + 0.248 * Social Influence + 0.192 * Perceived Knowledge + 0.189 * Perceived Value + 0.102 * Facilitating Conditions + 0.092 * Effort Expectancy + ε

4.10.6 Summary of Hypothesis Testing Results

The table below summarizes the results of the hypothesis testing:

no	Hypothesis	Supported
1	Performance expectancy has a positive effect on Tele-birr adoption	YES
2	Effort expectancy has a positive effect on Tele-birr adoption	YES
3	Social influence has a positive effect on Tele-birr adoption	YES
4	Facilitating conditions have a positive effect on Tele-birr adoption	YES
5	Perceived risk has a negative effect on Tele-birr adoption	NO
6	Perceived value has a positive effect on Tele-birr adoption	YES
7	Perceived knowledge has a positive effect on Tele-birr adoption	YES

Chapter Five

5. Summary of Major Findings, Conclusion, and Recommendations

5.1 Introduction

This chapter summarizes the major findings of the study, draws conclusions based on the analysis, and provides recommendations for future research and practice.

5.2 Summary of Findings

The findings of the study provide valuable insights into the determinants of Tele-birr adoption, revealing that multiple factors significantly influence consumers' decision to adopt this mobile payment service. Among the identified factors, Performance Expectancy stands out as a crucial determinant. This suggests that individuals are more likely to adopt Tele-birr if they perceive it to be capable of enhancing their overall performance and providing tangible benefits, such as improved efficiency and convenience in financial transactions. The study's results indicate that Performance Expectancy has a positive and relatively high coefficient of 0.273, emphasizing its strong influence on consumer intention to adopt Tele-birr.

Social Influence is another important factor identified in the study as a determinant of Tele-birr adoption. The findings indicate that individuals are more inclined to adopt Tele-birr if they perceive that their social network, including family, friends, and colleagues, supports and encourages its use. This underscores the role of social influence in shaping consumer behavior, as individuals are influenced by the opinions, recommendations, and experiences of others. The study's results reveal a positive coefficient of 0.248 for Social Influence, indicating its significant impact on consumer intention to adopt Tele-birr.

Perceived Knowledge and Perceived Value are also identified as crucial determinants of Tele-birr adoption. Perceived Knowledge refers to individuals' understanding and awareness of Tele-birr's features, advantages, and functionalities (Wei Sun a, 2023). Perceived Value relates to the perceived benefits and value that individuals associate with using Tele-birr (Venkatesh V. &., 2016). Both factors have positive coefficients of 0.192 and 0.189, respectively, demonstrating their influence on consumer intention to adopt Tele-birr.

Additionally, the study highlights the importance of Facilitating Conditions and Effort Expectancy as determinants of Tele-birr adoption. Facilitating Conditions refer to the resources, support, and infrastructure required for individuals to use Tele-birr effectively, while Effort Expectancy relates to individuals' perception of the ease and convenience of using Tele-birr (Venkatesh V. &., 2016). The study's findings reveal positive coefficients of 0.102 for Facilitating Conditions and 0.092 for Effort Expectancy, suggesting their significant contributions to consumer intention to adopt Tele-birr.

In summary, the study's findings indicate that Performance Expectancy, Social Influence, Perceived Knowledge, Perceived Value, Facilitating Conditions, and Effort Expectancy are crucial determinants of Tele-birr adoption. These factors collectively shape consumers' intention to adopt Tele-birr, as represented by the provided equation. Understanding the influence of these factors is vital for service providers and policymakers to develop effective strategies to promote Tele-birr adoption and enhance consumers' payment experiences.

5.3 Conclusions

The analysis of the data reveals several significant relationships that influence consumer intention to use Tele-birr, a mobile money service.

primarily, there is a significant relationship between Performance Expectancy and consumer intention. A 1% increase in Performance Expectancy is associated with a 0.273% increase in consumer intention to use Tele-birr. This suggests that when consumers perceive Tele-birr as a service that enhances productivity, facilitates quick payments, saves time, and finds it useful in their daily lives, their intention to use Tele-birr is positively influenced.

Next, there is a significant relationship between Effort Expectancy and consumer intention. A 1% increase in Effort Expectancy is associated with a 0.092% increase in consumer intention to use Tele-birr. This indicates that when consumers perceive Tele-birr as an easily learnable and user-friendly service, their intention to use Tele-birr is positively influenced. Consumers value simplicity and ease of use when considering the adoption of Tele-birr.

Furthermore, there is a significant relationship between Social Influence and consumer intention. A 1% increase in Social Influence is associated with a 0.248% increase in consumer intention to use Tele-birr. This suggests that when consumers perceive a positive social influence regarding

the adoption of Tele-birr, their intention to use the service is positively influenced. The opinions and behaviors of influential individuals, as well as the prevalence of Tele-birr usage among their social circle, play a role in shaping consumer intentions.

Additionally, there is a significant relationship between Facilitating Conditions and consumer intention. A 1% increase in Facilitating Conditions is associated with a 0.102% increase in consumer intention to use Tele-birr. This indicates that when consumers perceive the presence of favorable facilitating conditions, such as having the necessary resources, knowledge, compatibility with other technologies, and access to assistance when needed, their intention to use Tele-birr is positively influenced.

Furthermore, there is a significant relationship between Perceived Value and consumer intention. A 1% increase in Perceived Value is associated with a 0.189% increase in consumer intention to use Tele-birr. This suggests that when consumers perceive Tele-birr services as reasonably priced, worth the money paid, providing opportunities for savings, and perceive the current pricing as reasonable, their intention to use Tele-birr is positively influenced. Consumers assess the benefits and value they receive from Tele-birr in relation to the cost, which strongly influences their intention to adopt and utilize the service.

Finally, yet importantly, there is a significant relationship between Perceived Knowledge and consumer intention. A 1% increase in Perceived Knowledge is associated with a 0.192% increase in consumer intention to use Tele-birr. This indicates that when consumers perceive themselves as having adequate knowledge and understanding of Tele-birr's features, functionalities, and usage scenarios, their intention to use Tele-birr is positively influenced. Consumers' confidence in their own proficiency and familiarity with Tele-birr plays a crucial role in shaping their intention to adopt and utilize the service.

In conclusion, multiple factors contribute to consumer intention to use Tele-birr. Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Perceived Value, and Perceived Knowledge all play significant roles in influencing consumer intentions. Service providers can enhance consumer intention by ensuring that Tele-birr offers valuable benefits, is user-friendly, has positive social influence, provides necessary resources and support, is reasonably priced, and provides adequate information and education to consumers.

5.4 Recommendations

Based on the analysis of the data and the significant relationships identified, here are some recommendations for service providers of Tele-birr or other mobile payment systems to enhance consumer intention and increase adoption:

Emphasize Performance Expectancy: Highlight the features and benefits of the mobile payment system that enhance productivity, enable quick payments, save time, and provide utility in daily life. Communicate how the service can improve efficiency and convenience for users.

Focus on Ease of Use: Ensure that the mobile payment system is designed to be easily learnable and user-friendly. Simplify the user interface and provide intuitive instructions to make the adoption process smooth and hassle-free. Consider user feedback and continuously improve the user experience.

Leverage Social Influence: Foster positive social influence by showcasing testimonials, success stories, and endorsements from influential individuals who have adopted the mobile payment system. Promote the prevalence of Service usage among social circles, emphasizing the social acceptance and benefits of using the service.

Enhance Facilitating Conditions: Provide resources, knowledge, and support to users to facilitate their adoption of the mobile payment system. Offer training materials, tutorials, and assistance channels to address any challenges or questions users may have. Ensure compatibility with other technologies and provide seamless integration options.

Communicate Perceived Value: Clearly communicate the value proposition of Tele-birr or other mobile payment systems, emphasizing its reasonable pricing, cost-effectiveness, and potential for savings. Highlight the benefits and advantages users can enjoy by utilizing the service, demonstrating the value they receive in relation to the cost.

Educate on the mobile payment system’s Features and Functionality: Offer comprehensive information and educational resources to improve consumers' perceived knowledge of Tele-birr. Clearly explain its features, functionalities, and usage scenarios, enabling users to feel confident and proficient in utilizing the service.

By implementing these recommendations, service providers can enhance consumer intention to use mobile payment technologies, attract more users, and increase the adoption and utilization of the service.

5.5 Suggestion for Future Research

Future research could explore a longitudinal study to examine the changes in consumer intention to use Tele-birr over time. This would provide insights into the factors influencing intention and adoption at different stages of the service's lifecycle. Additionally, research could investigate cross-cultural differences in consumer intention to use Tele-birr. Investigate how factors such as performance expectancy, effort expectancy, social influence, facilitating conditions, perceived value, and perceived knowledge vary across different cultural contexts.

Mediating and Moderating Factors could also be investigated. For example, explore whether factors like age, income level, education, and technological proficiency mediate or moderate the relationships between the identified factors and consumer intention. This would provide a more nuanced understanding of the complex dynamics at play.

Last but not least, External Factors such as regulatory frameworks or government intervention, security concerns, and trust in financial systems influence on consumer intention to use Tele-birr or other mobile payment systems could be investigated. Understanding how these external factors interact with the identified factors can provide a comprehensive understanding of the adoption dynamics and help shape policy and regulatory approaches.

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Annex I-Questionnaire

Dear Participant,

You are invited to participate in a research study conducted by Mulugeta Tsegaye Dagnaw, an MBA student at Addis Ababa University, College of Business and Economics. This study aims to investigate the factors influencing the adoption of mobile payment technologies, specifically focusing on Tele-birr in Ethiopia.

Your participation is voluntary, and your responses will remain confidential and anonymous. The data collected will be used solely for research purposes and reported in an aggregated format to ensure individual identification is not possible. Your input is valuable and will contribute to advancing knowledge in the field of mobile payment technologies in Ethiopia.

If you have any questions or concerns about this study, please contact me at [tsegayem65@gmail.com].

Sincerely,

Mulugeta Tsegaye Dagnaw

MBA Student

Addis Ababa University

College of Business and Economics

I. Respondents' demographic profiles

1. Age? _____

2. Gender?

☐ Male ☐ Female

3. Highest education level?

A. Primary
B. Secondary/TVET
C. BA/BSC
D. Masters
E. PhD

II. Factors affecting adoption of Tele-birr

(1) Strongly Disagree; (2) Disagree; (3) Somewhat Disagree; (4) Neither Agree nor Disagree; (5) Somewhat Agree; (6) Agree; (7) Strongly Agree.

n	items	1	2	3	4	5	6	7
Performance Expectancy (PE)								
1	Using Tele-birr increases my productivity.							
2	Using Tele-birr helps me accomplish payments quicky.							
3	I can save time when I use Tele-birr in the payment process.							
4	I find Tele-birr useful in my daily life.							
Effort Expectancy (EE)								
1	Learning how to use Tele-birr is easy for me.							
2	It doesn't take a long time to learn to use Tele-birr.							
3	I find Tele-birr easy to use.							
4	It is easy for me to become skillful at using Tele-birr.							
Social Influence (SI)								
1	People who influence my behavior think that I should use Tele-birr.							
2	People whose opinions I value prefer that I use Tele-birr.							
3	Most people around me are using Tele-birr.							
4	People who influence my behavior think that I should use Tele-birr.							
Facilitating Conditions (FC)								
1	I have the resources needed to use Tele-birr.							
2	I have the knowledge needed to use Tele-birr.							
3	Tele-birr is compatible with other technologies I use.							
4	I can get help from others when I have difficulties using Tele-birr.							
Perceived Value (PV)								
1	Tele-birr services are reasonably priced.							
2	The service provided by Tele-birr is worth the money I pay.							
3	Tele-birr services are reasonably priced at the moment.							
4	When I use Tele-birr services, I can save money.							
Perceived Risk (PR)								
1	Using Tele-birr services puts my account at risk of fraud.							
2	I think using Tele-birr services subject my Tele-birr account to financial risk.							

3	I believe that using Tele-birr services threatens my privacy.							
4	Hackers might take control of my account if I use Tele-birr services.							
Perceived Knowledge (PK)								
1	I feel confident in my knowledge and skills to use Tele-birr effectively.							
2	I consider myself knowledgeable about the features and functionalities of Tele-birr.							
3	I believe I have a good understanding of how to use Tele-birr in different scenarios.							
4	I have received sufficient Information and education to use Tele-birr proficiently.							
Consumer Adoption of Mobile Payment Technologies								
1	I intend to continue using Tele-birr.							
2	I will keep using Tele-birr as regularly as I do now.							
3	My intention is to continue using Tele-birr than use any alternative means.							
4	I will strongly recommend others to use Tele-birr.							

III. About Tele-birr users

1. Which Tele-birr services do you use?
   a. Use Tele-birr to send money
   b. Use Tele-birr to deposit cash
   c. Use Tele-birr to withdraw cash
   d. Use Tele-birr to buy airtime
   e. Use Tele-birr to receive payment
   f. Use Tele-birr to pay bills, merchant, tickets, utility, traffic penalty etc.
   g. Use Tele-birr to get financial service (Tele-birr mela, sanduk and endekise)
   h. Use Tele-birr for other services
2. How often do you use Tele-birr services?
   a. Always
   b. Often
   c. Sometimes
   d. Rarely

Annex 2-Validity test

Correlations

		PE1	PE2	PE3	PE4	PE
PE1	Pearson Correlation	1	.640**	.572**	.634**	.826**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	386	386	386	386	386
PE2	Pearson Correlation	.640**	1	.795**	.640**	.893**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	386	386	386	386	386
PE3	Pearson Correlation	.572**	.795**	1	.624**	.868**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	386	386	386	386	386
PE4	Pearson Correlation	.634**	.640**	.624**	1	.849**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	386	386	386	386	386
PE	Pearson Correlation	.826**	.893**	.868**	.849**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	386	386	386	386	386

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

Correlations

		EE1	EE2	EE3	EE4	EE
EE1	Pearson Correlation	1	.695**	.653**	.661**	.866**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	386	386	386	386	386
EE2	Pearson Correlation	.695**	1	.670**	.651**	.871**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	386	386	386	386	386
EE3	Pearson Correlation	.653**	.670**	1	.709**	.869**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	386	386	386	386	386
EE4	Pearson Correlation	.661**	.651**	.709**	1	.869**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	386	386	386	386	386
EE	Pearson Correlation	.866**	.871**	.869**	.869**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	386	386	386	386	386

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

Correlations

		SI1	SI2	SI3	SI4	SI
SI1	Pearson Correlation	1	.715**	.747**	.384**	.867**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	386	386	386	386	386
SI2	Pearson Correlation	.715**	1	.760**	.392**	.877**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	386	386	386	386	386
SI3	Pearson Correlation	.747**	.760**	1	.412**	.890**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	386	386	386	386	386
SI4	Pearson Correlation	.384**	.392**	.412**	1	.655**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	386	386	386	386	386
SI	Pearson Correlation	.867**	.877**	.890**	.655**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	386	386	386	386	386

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

Correlations

		FC1	FC2	FC3	FC4	FC
FC1	Pearson Correlation	1	.604**	.501**	.392**	.798**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	386	386	386	386	386
FC2	Pearson Correlation	.604**	1	.586**	.418**	.815**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	386	386	386	386	386
FC3	Pearson Correlation	.501**	.586**	1	.395**	.790**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	386	386	386	386	386
FC4	Pearson Correlation	.392**	.418**	.395**	1	.724**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	386	386	386	386	386
FC	Pearson Correlation	.798**	.815**	.790**	.724**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	386	386	386	386	386

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

Correlations

		PV1	PV2	PC3	PV4	PV
PV1	Pearson Correlation	1	.761**	.786**	.617**	-.042
	Sig. (2-tailed)		.000	.000	.000	.405
	N	386	386	386	386	386
PV2	Pearson Correlation	.761**	1	.779**	.639**	-.002
	Sig. (2-tailed)	.000		.000	.000	.973
	N	386	386	386	386	386
PC3	Pearson Correlation	.786**	.779**	1	.650**	-.045
	Sig. (2-tailed)	.000	.000		.000	.376
	N	386	386	386	386	386
PV4	Pearson Correlation	.617**	.639**	.650**	1	.003
	Sig. (2-tailed)	.000	.000	.000		.958
	N	386	386	386	386	386
PV	Pearson Correlation	-.042	-.002	-.045	.003	1
	Sig. (2-tailed)	.405	.973	.376	.958	
	N	386	386	386	386	386

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

Correlations

		PR1	PR2	PR3	PR4	PR
PR1	Pearson Correlation	1	.750**	.633**	.670**	.871**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	386	386	386	386	386
PR2	Pearson Correlation	.750**	1	.700**	.668**	.890**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	386	386	386	386	386
PR3	Pearson Correlation	.633**	.700**	1	.691**	.868**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	386	386	386	386	386
PR4	Pearson Correlation	.670**	.668**	.691**	1	.867**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	386	386	386	386	386
PR	Pearson Correlation	.871**	.890**	.868**	.867**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	386	386	386	386	386

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

Correlations

		PK1	PK2	PK3	PK4	PK
PK1	Pearson Correlation	1	.778**	.691**	.380**	.833**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	386	386	386	386	386
PK2	Pearson Correlation	.778**	1	.833**	.476**	.906**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	386	386	386	386	386
PK3	Pearson Correlation	.691**	.833**	1	.532**	.899**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	386	386	386	386	386
PK4	Pearson Correlation	.380**	.476**	.532**	1	.733**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	386	386	386	386	386
PK	Pearson Correlation	.833**	.906**	.899**	.733**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	386	386	386	386	386

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

Correlations

		BI1	BI2	BI3	BI4	BI
BI1	Pearson Correlation	1	.799**	.552**	.681**	.863**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	386	386	386	386	386
BI2	Pearson Correlation	.799**	1	.634**	.718**	.901**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	386	386	386	386	386
BI3	Pearson Correlation	.552**	.634**	1	.684**	.835**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	386	386	386	386	386
BI4	Pearson Correlation	.681**	.718**	.684**	1	.884**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	386	386	386	386	386
BI	Pearson Correlation	.863**	.901**	.835**	.884**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	386	386	386	386	386

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

Annex 3-pearson correlation

Correlations

		Performance expectancy	Effort Expectancy	Social Influence	Facilitating Conditions	Perceived Value	Perceived Risk	Perceived Knowledge	Behavioral Intention
Performance expectancy	Pearson Correlation	1	.526**	.557**	.526**	.450**	-.132**	.430**	.664**
	Sig. (2-tailed)		.000	.000	.000	.000	.009	.000	.000
	N	386	386	386	386	386	386	386	386
Effort Expectancy	Pearson Correlation	.526**	1	.438**	.573**	.248**	-.093	.609**	.516**
	Sig. (2-tailed)	.000		.000	.000	.000	.067	.000	.000
	N	386	386	386	386	386	386	386	386
Social Influence	Pearson Correlation	.557**	.438**	1	.554**	.504**	-.107*	.423**	.642**
	Sig. (2-tailed)	.000	.000		.000	.000	.036	.000	.000
	N	386	386	386	386	386	386	386	386
Facilitating Conditions	Pearson Correlation	.526**	.573**	.554**	1	.523**	-.106*	.594**	.634**
	Sig. (2-tailed)	.000	.000	.000		.000	.037	.000	.000
	N	386	386	386	386	386	386	386	386
Perceived Value	Pearson Correlation	.450**	.248**	.504**	.523**	1	-.024	.398**	.588**
	Sig. (2-tailed)	.000	.000	.000	.000		.637	.000	.000
	N	386	386	386	386	386	386	386	386

Perceived Risk	Pearson Correlation	-.132**	-.093	-.107*	-.106*	-.024	1	-.024	-.150**
	Sig. (2-tailed)	.009	.067	.036	.037	.637		.636	.003
	N	386	386	386	386	386	386	386	386
Perceived Knowledge	Pearson Correlation	.430**	.609**	.423**	.594**	.398**	-.024	1	.561**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.636		.000
	N	386	386	386	386	386	386	386	386
Behavioral Intention	Pearson Correlation	.664**	.516**	.642**	.634**	.588**	-.150**	.561**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.003	.000	
	N	386	386	386	386	386	386	386	386

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

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

Annex 4-Tests of Linear Regression Model Assumptions

1. Heteroscedasticity test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.075	.020		3.720	.000
	LOG_PE	.030	.028	.072	1.098	.273
	LOG_EE	-.074	.028	-.184	-2.655	.008
	LOG_SI	-.003	.030	-.007	-.100	.920
	LOG_FC	.032	.033	.075	.989	.323
	LOG_PV	.010	.028	.025	.375	.708
	LOG_PR	.024	.025	.051	.988	.324
	LOG_PK	.013	.029	.031	.431	.667

a. Dependent Variable: AbsUt

3. Multicollinearity test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	-.029	.031		-.936	.350	-.089	.031					
LOG_PE	.273	.042	.263	6.558	.000	.191	.355	.641	.320	.202	.592	1.689
LOG_EE	.092	.042	.092	2.198	.029	.010	.174	.516	.112	.068	.537	1.862
LOG_SI	.248	.046	.225	5.400	.000	.158	.338	.641	.268	.166	.548	1.823
LOG_FC	.102	.049	.095	2.068	.039	.005	.199	.621	.106	.064	.446	2.243
LOG_PV	.189	.042	.185	4.535	.000	.107	.270	.579	.227	.140	.569	1.757
LOG_PR	-.046	.037	-.039	-1.238	.216	-.120	.027	-.085	-.064	-.038	.963	1.039
LOG_PK	.192	.044	.189	4.382	.000	.106	.278	.589	.220	.135	.507	1.971

a. Dependent Variable: LOG_BI

4. Test of Normality

