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Factors affecting customers' adoption of digital payment platform: in the case of telebirr at Addis Ababa city

By Rediet Debela (GSE/2918/14)

Thesis submitted for the partial fulfillment & requirements for the Degree of Masters of Art in Marketing Management

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Date: - July, 2024

Declaration

I confirm that the thesis titled "Factors affecting customers' adoption of telebirr digital payment platform in Addis Ababa" is my own work. No sections of this thesis have been presented for any other academic qualification. I have properly credited all information sources. I conducted this research with the assistance of my advisor, Dr. Temesgen Belayneh.

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Letter of certification

This is to Certify that the thesis prepared by Rediet Debela, entitled: **(Factors affecting adoption of digital payment platform: in the case of telebirr at Addis Ababa city)**, submitted in partial fulfillment of the requirements for the degree of master of arts in marketing management complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

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Abbreviations

NBE: - National bank of Ethiopia

EDPS: - Ethiopian digital payment strategy

DFS: - Digital financial service

ATM: - Automated teller machine

POS: - Point of sale

DIT: - Diffusion innovation theory

TTF: - Task technology fit theory

TRA: - Theory reasoned action

TPB: - Theory of planned behavior

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Abstract

The rapid rise of digital transactions and online shopping has created a strong demand for modern payment solutions. This shift presents numerous opportunities customers attracted and convinced to use digital transaction mechanisms alongside has operational challenges for companies and this suggests introducing new products or enhancing existing ones, businesses can capitalize on this growing market, gain a competitive edge, and increase profits. This study deals with the investigation factors that drive or hinder the adoption of telebirr digital payment services in Addis Ababa, takes an early lead to strengthen its position ahead. 295 valid close-ended surveys were gathered and evaluated, a variety of descriptive and inferential statistics were employed to analyze the data was gathered. The finding discovered that, 30.2% of adoption of Tele birr caused by perceived ease of use, 42.6% of Tele birr adoption caused by perceived usefulness, 9% of Tele birr adoption is due to trust and 13.1% of telebirr digital payment adoption caused by consumers' innovativeness, while perceived risk match was not statically significant to adoption of telebirr digital payment. Finally, recommended to apply user-friendly interfaces, intuitive design for easy navigation, make it accessible to a wide range of people, ensure compatibility with various devices and operating systems, Highlight the time-saving features and convenience of using telebirr for daily transactions, optimize the platform, ensure that the system maintains high levels of trustworthiness. More over regularly introduce new features, updates, and services to keep the platform fresh and engaging for users.

Keywords: Adoption, Customers innovativeness, Digital payment system, Electronic transaction, Mobile wallet, Perceived ease of use, Perceived usefulness, Perceived risk, Trust.

CHAPTER ONE

1. Introduction

1.1 Background of the study

The financial sector in Ethiopia is in its early stages, characterized by with low levels of financial inclusion (NBE 2017). According to Tadesse 2018, only 12% of adult Ethiopians transact electronically by sending or receiving money using mobile money or other cashless delivery methods.

However, financial inclusion has only lately gained full recognition the Ethiopian government. The National council for financial strategy was founded and the first national financial inclusion strategy was introduced in 2017. By 2025, the strategy hopes to provide everyone with access to and use of an assortment of reasonably priced, excellent financial products and services. Though, considering present trends, this goal appears overly ambitious. The ten years national development plan (2021–2030) and the homegrown economic reform agenda, both authorized in 2019. Advocate digital transformation as a key driver toward improving financial accessibility. The 2020 digital transformation agenda, the first of its type in the nation is even more demanding in order to lead the digital transformation plan. It is important to include infrastructure (connection and power), enabling system (digital ID, digital payment, and cyber security), social mentality and institutional capability, the strategy seeks to create an inclusive digital economy.

Fletcher and Nielsen (2017) argued digital services and reflect a readiness to pay electronically for the service that young generations might be more used to paying for because it is more valuable.

Overall, the digital payment system is to a certain extent underdeveloped. Due to the relatively recent introduction of digital financial services in Ethiopia, the majority of economic transactions still take place in cash. Finder survey data (World Bank 2018) illustrate the Ethiopian economy's reliance on cash. As an illustration, 98.7% of all adult consumers who paid for utilities in 2017 did so with cash.

The impact of technological progress on banking channels has been observed, propelling the development of banking technology. Changes in distribution methods have spurred advancements in banking technology, exemplified by innovations such as ATMs, cards debit and credit, mobile banking, PC banking, telebanking and the more recent emergence of internet banking. The shift toward paper and cashless banking has become an unavoidable progression. (Goi, 2005).

Recently, certain financial institutions and telecommunication companies have implemented new features that connect mobile wallets (an electronic mobile money account) which allow users to store funds and make payments with their bank accounts. This has simplified the process for mobile money users who also hold bank accounts, particularly those with smart phones. They no longer need to visit agents or bank branches to deposit funds, as they can now easily transfer money from their bank account to their electronic account using a mobile device. This integration has increased the adoption of mobile money services among bank account holders and has incentivized mobile money users to open bank accounts. Consequently, it has streamlined the process of settling bill payments. (Getnet Alemu, Tadele Ferede, and Alejandro Fiorito, 2021)

However, there are distinct challenges in advancing payment innovation. The payment services sector possesses unique characteristics, including robust network effects, specific roles, niches, and regulations. Despite this, payment services are no longer exclusively dominated by banks, and in certain regions, they never were. In areas where gaps exist, non-bank entities are stepping in to provide their products and services. Nevertheless, these innovative payment providers from outside the banking sector must establish connections with the existing banking infrastructure and payment systems to facilitate funding and withdrawals from their platforms. (Thomas Lammer, 2006)

Contrary to Ethiopia, where mobile banking hasn't seen significant progress, other African nations such as Kenya have achieved a more advanced stage in this aspect. In Kenya, M-Pesa, a mobile phone-based financial service introduced in 2007 by Vodafone for Safaricom and Vodacom, the leading mobile operators in Kenya and Tanzania, has reached a high level of development. Safaricom's 2019 results indicated that M-Pesa boasted 18.2 million active users. (Kariukin, 2014)

1.2 Background of the organization

Telebirr is digital cash transfers which is accessible via most basic mobile phones that enable to access a variety of financial services and cashless payments. It is owned by telecommunication and Internet service provider in Ethiopia and has launched May 2021. Telebirr was named with names in combination Ethiopians' owned telecom service naming shortly "Tele" and Ethiopians' currency.

Telebirr has more than 1.44tn. transactions value in ETB, from total customers as of may 2023, 122000 agents, 93000 merchants, 25 banks to telebirr wallet integration.

Telebirr platform provides basically with deposit and withdraw cash, send and receive money, pay for goods/services in different shops/locations, receive payments from customers and participate in fund raising.

1.3 Statement of the problem

The rising trend of digital transactions and online purchasing has reflected a growing demand for advanced payment methods. Recent researches, including research on QR digital payment systems, e-money, and central bank digital money transfers, highlight the evolving landscape. In the context of Ethiopian banks, mobile wallets and mobile banking offer a chance tap in to large market in country where conventional banking services are not easily accessible and central bank digital money transfers. (Fabris 2019; Omodero 2021, Nanez Alonso 2020; Nanez Alonso 2021). However, despite the potential benefits, there is evidence of reluctance among customers, as indicated by overcrowding and long queues in banking premises.

Ethio-telecom has introduced Tele birr, a digital money transaction service, aiming to address the challenges faced by traditional banking methods. A fresh set of customer expectations is emerging within the industry, accompanied by continuous disruptions affecting the technology and business models that drive the industry. This evolving landscape has presented numerous opportunities alongside operational challenges for companies. For subscribers of telebirr application, this offers an alternative to conventional banking services. However, the adoption of such services faces obstacles, and understanding the factors influencing consumer adoption

becomes crucial for institutions like Ethio-telecom to expand their customer base in the mobile money transaction sector.

This emerges as a crucial research area due to news reports and national bank journals as Ethiopia faces financial challenges in its transition to a cashless system, aiming to enhance digital transactions. Telebirr takes an early lead to strengthen its position ahead of the introduction of Safaricom's M-Pesa. This research will probably deal with the investigation factors that drive or hinder the adoption of telebirr digital payment services in Addis Ababa, Segenet Ayele (2021), particularly studied focusing on the attitudes, behavioral intentions, and actual usage of online payment systems. Despite the widespread ownership of mobile phones and other digital devices in the city, the utilization of digital payment systems appears relatively modest. This suggests untapped potential for the advancement and promotion of digital payment systems.

So far, various studies have been conducted to identify the factors influencing the adoption of digital payments but yielding a range of diverse conclusions. For instance, (Leigh Soutter, Kenzie Ferguson, and Michael Neubert, 2019) the increasing awareness of the advantages of digital money transfer and the introduction of new digital payment systems in sub-Saharan Africa are expected to drive customer demand. Lowering costs and establishing perceived credibility are two critical factors that affect people's willingness to embrace mobile transactions. Moreover, (Gagandeep Singh, 2020) found that The decision to utilize Mobile e-wallets for tasks such as bill payments and money transfers is determined by the level of security and privacy linked to digital payment environments. While In the research conducted by Tadesse in 2018, the investigation focused on the factors influencing the adoption of inter-bank e-payment. The study involved surveying respondents who customers were holding bank cards, specifically from the populations of five chosen banks in Addis Ababa. The examination aimed to explore the connections among attitude, perceived ease of use, perceived usefulness, perceived risk, reliability, and the benefits associated with the intention to use inter-bank e-payment. Digital payments and e-payment systems have witnessed rapid growth, they are not without challenges. Some consumers still prefer traditional cash-based methods, and understanding the factors influencing this choice is essential. Existing research on the subject has yielded varied findings, with factors such as awareness, cost, perceived credibility, security, and privacy playing different

roles in shaping consumers' intentions to adopt digital payment methods. Given the evolving landscape and the imperative for financial institutions to increase customer usage and revenue, this study seeks to contribute insights that can inform targeted marketing strategies and improve adoption rates, addressing concerns surrounding the widespread adoption of digital payment platforms.

1.4 Research questions

1. How does the perceived ease of use influence customers' willingness to adopt telebirr digital payment system?
2. To what extent perceived usefulness influences the adoption of digital payment telebirr subscribers?
3. How much does the perceived risk affect the adoption of digital payment provided by telebirr?
4. How does trust influence the adoption of telebirr digital payment system?
5. How does customers' level of innovation influence their adoption of telebirr digital payment system?

1.5 Research objectives

1.5.1 General Research Objective

The main objective of the study is to find out factors that are affecting customers' adoptions of digital payment provided by telebirr in Addis Ababa.

1.5.2 Specific Research Objectives

Based on the general objective of the study, the specific objectives of the study are to:-

1. Discover the influence of perceived ease of use on customers' willingness to adopt telebirr digital payment system.
2. Examine how the perceived usefulness of digital payment impacts the decision of telebirr subscribers to use it.
3. Analyze the perceived risk effect to the adoption of digital payment provided by telebirr.
4. Assess the influence of trust to the adoption of telebirr digital payment system.
5. Identify the extent of customers' innovativeness effect customers' adoption of telebirr digital payment system.

1.6 Significance of the Study

In recent times, advancements in digital payments have been evident, particularly in urban areas, with Addis Ababa being a notable, characterized by high population density, diverse demographics, and a fast-paced lifestyle. Despite this growth, the adoption rate remains relatively low. This research aims to examine the factors influencing the adoption of digital payments, exploring the relationship each factor has with the adoption process. This study grounds for telebirr digital payment platforms, as the platform can potentially offer solutions to the challenges of urban living.

The study's findings were pinpoint aspects play a crucial role in shaping how users interact with and perceive digital payment that enhance the user experience on digital payment platforms, emphasizing paramount factors with a focus on convenience, trust in digital payment options, and customer innovativeness. Additionally, this research were investigating obstacles to adoption, informing the development of effective strategies for implementing this technology. By shedding light on these factors, the study aims to increase customer awareness and understanding of this new technology, fostering greater reliance on it.

1.7 Scope of the study

In terms of understanding the adoption of digital systems by customers, various factors come into play. However, this study specifically focus on examining the impact of perceived ease of use, perceived usefulness, perceived risk, attitude, and customers' innovativeness on the adoption of digital payment transactions. It's important to note that the geographically this research is limited to Addis Ababa. Additionally, the study is centered on the digital payment services offered by telebirr.

1.8 Limitation of the study

Some limitations in to considerations related to this specific study:-

- ❖ In terms of its geographical coverage, as it was limited to telebirr users in Addis Ababa. When extending the results to settings outside of Addis Ababa, care should be taken in interpreting the data.

- ❖ The study specifically targets customers of telebirr, indicating a further limitation. Results may be influenced by the characteristics and behaviors of individuals who use this particular service, and this may not be representative of the broader population.
- ❖ The research study has only examined a few influential factors that impact customers' adoption of digital payment methods. There could be other important variables that were not investigated in this study; future research should explore a more comprehensive set of mediating variables to capture a broader perspective on this topic.
- ❖ Some of the respondents are not motivated to complete and submit the questionnaires. The non-response bias could impact the representativeness of the sample, as those who chose not to participate may have different perspectives or experiences. It's crucial to recognize and account for potential biases will interrupt the interpretation of results.

1.9 Definition of Terms

- ❖ **Adoption:** According to Everett Rogers, (2003) adoption in his context refers to the process by which individuals or groups decide to try and then continue using a new innovation or idea.
- ❖ **Digital payment system:** Digital payment can be defined as platform which is used for making monetary transaction for various goods or services purchased over the internet. (Roy and Sinha, 2014).
- ❖ **Mobile wallet:** way of storing or keeping digital cash and using it for various transactions (Grewal, Roggeveen, and Nordfalt 2017)

1.10 Organization of the Study

This study consists of five chapters. The initial chapter serves as an introduction, encompassing the study's background, problem statement, research questions, objectives, scope, significance, terminology, definitions, and study limitations. The second chapter delves into a comprehensive review of relevant literature. Chapter three elaborates on the research design and methods were employed in the study. Moving on to the fourth chapter, it present, analyzes, and discusses the facts and figures obtained from primary sources. Building upon the findings of the fourth chapter, the fifth chapter summarizes all the results, draw conclusions and propose potential recommendations.

CHAPTER TWO

2. Literature review

2.1 Introduction

This chapter aims to examine existing literature on customer acceptance of digital payments, encompassing traditional and contemporary payment methods, profiles of specific Providers of digital payment services, various literature models, and a compilation of factors that are influencing customer adoption in their digital payments. It also incorporates empirical evidence and establishes conceptual frameworks to emphasize the key variables explored in the studies.

2.2 Theoretical review

2.2.1 Digital payment

The term digital payment refers to any form of payment made online, which is done through the digital mode. (Sivathanu, 2019). A payment method that is generated using digital techniques is called a digital payment. Digital techniques are used by both the payer and the payee to transfer and get cash in digital payments. Thus, it is often too referred to as an electronic payment. (Bisma, R., Puspita, Y., and Sulistiyani, E. (2020) Digital payments are defined by Chen (2019), as non-cash transactions handled via digital platforms the primary method being mobile payments. Any form of payment mode with a digital device is referred to as a digital payment, including mobile payment, digital wallets, crypto-currency, and electronic payment. (Alkhowaiter, 2020)

2.2.2 Digital payment features

An electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions, Beneficiary registration is required for the transactions. Beneficiary is the recipient is someone who gains something from a certain person or entity. Information about beneficiary particularly name, account number, bank address and fund transfer limit is to be given. (A.Martina Franciska and Dr. S. Sahayaselvi, 2017) Following are the services provided by digital transactions

- ❖ Mobile wallets can make payments by simply tapping their mobile device or contactless card on a compatible terminal.
- ❖ Bill payments allow users to pay bills electronically, including utilities, credit cards, and other recurring expenses.
- ❖ Fund transfer enables the transfer of money between accounts, either within the same bank or across different banks
- ❖ QR code payments users can make payments by scanning QR codes using their mobile devices.

2.2.3 The digital payment services landscape

The financial system in Ethiopia is not well-developed. Economic transactions primarily rely on cash, and the introduction of digital financial services (DFS) is a recent development. According data from the World Bank in 2018, the Ethiopian economy is predominantly cash-based. For instance, 98.7% of adults paid with cash for their utilities in 2017. Additionally, Although payments for agricultural products were received by 59% of adults, only 0.47% of these payments were made using bank accounts. Digital financial services are those that can be accessed and provided via digital channels like the Internet, a mobile device, an automated teller machine (ATM), a point-of-sale (PoS) device, payments, transfers, remittances, savings, and insurance services. By lowering expenses for banks and other financial institutions (by neutralizing the need for actual branches) and for customers (by lowering transaction costs), using digital channels boosts access to and use of financial services. It also simplifies transactions, increases service quality, and spans a large geographic area. (Alejandro Fiorito, Tadele Ferede, and Getnet Alemu, 2021).

2.2.4 Adoption on digital payment concept

The pivotal factor influencing the inclination to embrace digital payments was the technology adoption theory or model, identified as the key determinant in the decision to fully embrace innovative practices as the optimal course of action. Conversely, the study conducted by Zhong (2021) revealed that perceived risk acts as a hindrance to the adoption of digital payments. The Diffusion of Innovation Theory, examining critical success criteria for the digital payment infrastructure in emerging nations, highlighted that the diffusion rate depends on factors such as the relative benefit of innovation, as well as its communication capacity, level of complexity,

compatibility and test or simplicity. When clients believe that an innovation offer more benefits than current alternatives, the diffusion process is accelerated. As indicated by Sivathanu (2019).

2.2.5 Theoretical Review for Technology Adoption Models

Continuous advancements in technology pose challenges to existing business models but also present prospects for innovative service offerings (Lai, 2006; 2007; 2010; 2016). Prominent companies frequently strive to influence the development of technological applications in order to benefit their own interests (Lovelock, 2001; Lai, 2007). Hoeing (1995) as well as Lai (2016) noted that the rate at which payment systems develop depends largely on a struggle between rapid technological change and natural barriers to new product or service acceptance. A number of theories have proposed to explain consumers' acceptance of new technologies and their intention to use.

2.2.5.1 The Theory of Diffusion of Innovations

Theory of Diffusion of Innovations (DIT) (Rogers, 1995), this theory developed by Everett Rogers in 1962, focuses on how innovations, ideas, and technologies spread through a population over time. Innovation is the new idea, practice, or technology being introduced. Adopters are Individuals or organizations that decide to take up the innovation. Diffusion Process the stages through which an innovation is adopted: knowledge, persuasion, decision, implementation, and confirmation. Adopter Categories are classified as Innovators, early adopters, early majority, late majority, and laggards. Factors Influencing Adoption as Rogers identified factors such as relative advantage, compatibility, complexity, trialability, and observability as key determinants affecting the rate of adoption and Communication channels has play a role in the diffusion process, and opinion leaders often facilitate adoption (Rogers, 2003).

2.2.5.2 Theory of Task-Technology Fit

Theory of Task-Technology Fit (TTF) (Goodhue and Thompson, 1995) focuses on how well a technology supports the tasks it is intended to facilitate. The nature of the tasks performed by individuals or organizations as well as the features and capabilities of a given technology fit the degree which the technology aligns with the requirements of the tasks. A good fit enhances performance and user satisfaction, while a poor fit may lead to inefficiencies and dissatisfaction.

2.2.5.3 Theory of Reasoned Action

Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975) individual behavior is determined by one's intention to perform a behavior, which is influenced by attitudes and subjective norms. Individual beliefs and evaluations regarding the behavior, Perceived social pressure or approval/disapproval regarding the behavior, the individual's motivation and plan to perform a specific behavior has been used to predict and understand a wide range of behaviors, and the amount of effort they intended to put forth to carry out the action. Generally speaking, the greater the intention to accomplish an action, the more probable it should be.

2.2.5.4 Theory of Planned Behavior

Theory of Planned Behavior (TPB) (Ajzen, 1985, 1991) extends the Theory of Reasoned Action by including the concept of perceived behavioral control. The perceived behavioral ease or difficulty of performing the behavior, Influenced by attitudes, subjective norms, and perceived behavioral control are widely used in predicting and explaining various behaviors and has applications in psychology, and organizational studies.

2.2.5.5 Technology Acceptance Model

Technology Acceptance Model (TAM) (Davis, Bagozzi, and Paul Warshaw, 1989) focuses on the factors influencing the acceptance and usage of technology. According to the model when consumers are exposed to new technology, they are affected by two primary criteria when deciding how and when to use it. These are:

- ❖ Perceived usefulness user's belief that a particular technology will enhance their job performance or make tasks easier to accomplish. If a user perceives a technology as useful, they are more likely to accept and use it. Luarn and Lin (2005) expanded the established TAM model in their study on mobile banking adoption in Taiwan. They added four more elements. To improve understanding, consider the sense of risk, perceived cost, perceived trustworthiness, and perceived self-efficacy. Furthermore, a particular focus of this inquiry is the analysis of perceived risk.
- ❖ Perceived ease of use this reflects the user's perception of the effort required to learn and use a new technology. If a technology is perceived as easy to use, users are more likely to accept it. The idea is that users are more inclined to adopt technologies that are user-friendly and not overly complex.

2.3 Empirical studies related to adoptions of digital payment

A growing number of studies have been published in recent years on digital payments due to the swift growth of electronic banking and payment systems. The complexities surrounding the factors that impact the utilization and acceptance of these systems have spurred this flow in studies. Prior research indicates that a noteworthy portion of these investigations has concentrated on understanding the elements influencing the results, customer acceptance, and adoption of digital payment methods.

As Kraenzlin S.; Meyer C. and Nellen T. (2020) investigation In terms of how people pay for things, the COVID-19 pandemic and the measures like social distancing have significantly altered the way customers handle payments. According to Kraenzlin and colleagues, there's solid proof showing a noteworthy decrease in retail card transactions. This crisis underscores the urgency to make electronic payments smoother and more secure. Ultimately, COVID-19 has revealed the significance of the external factors affecting how individuals adopt digital payment methods, indicating a need for further exploration and development in this area.

Dahlberg T.; Mallat, N.; Ondrus J.; Zmijewska A. suggest in 2007 delving into the components of adoption to generate more targeted suggestions for both mobile payment service providers and researchers. Analyzing existing literature offers a more comprehensive insight into the present research landscape, unveiling trends in the field's evolution. Additionally, a thorough examination of prior studies prevents redundant efforts by researchers and exposes significant gaps in the field. Essentially, this literature review delineates the domains saturated with studies and identifies regions lacking research, thereby adding another layer of contribution.

The existing body of literature primarily explores the factors influencing customer behavior in digital payments through the lens of the Technology Acceptance Model (TAM). Additional research has expanded upon this framework by incorporating variables such as risk, quality, and trust as precursors to the perceived ease of use and customer attitudes. Liebana Cabanillas, F.J. and Sanchez Fernandez, J. 2014 introduced a gender-based moderation aspect, revealing that customers' gender significantly influences the suggested relationships among ease of use, perceived usefulness of the new system, attitude, intentions to use the system, and trust in the system. Moreover, (Jun, J.; Cho, I.; Park, H. 2018), (Shankar, A.; Datta, B. 2018), (Humbani, M.; Wiese, M. 2018) other studies have delved into the moderating effects of education, income,

experience, age, privacy concerns, trust, and smart phone addiction in shaping customer behavior in the realm of digital payments.

Apart from the elements outlined in those models, various factors have been identified as significant drivers of e-payment adoption. These include cost, innovativeness, convenience, relative advantages, and trust. According to (Handarkho and Harjoseputro, 2020) consumer innovativeness stands out as the most impactful factor directly affecting e-payment adoption behavior. Other research indicates that factors such as reliability (Chin, A.G.; Harris, M. and Brookshire, R. 2020), perceived benefits, perceived trust, attitude, risk, (Khalilzadeh, J.; Ozturk, A. and Bilgihan, A. 2017) and ease of use also play crucial roles in influencing adoption (Arvidsson, N.2014).

Concerning customer attitude, research has incorporated it into models as a factor influencing adoption behavior through perceived usefulness and ease of use. In this realm, only a limited number of scholars have delved into the precursors of customer attitude. Liebana Cabanillas, F.J. and Sanchez Fernandez, J. 2014 found these precursors encompass risk characteristics, trust, enabling conditions, lifestyle, social impact, performance expectations, anxiety, perceived advantage and convenience, subjective norms, individual mobility, personal innovation, compatibility, mindfulness, and effort expectations. Many of these factors have demonstrated a significant influence on consumer attitudes toward digital payments (Liebana Cabanillas, F.J.; Sanchez Fernandez, J. and Munoz Leiva, F. 2018). However, the findings from previous studies exhibit inconsistency; while the majority aligns with the positive impact of ease of use on customer attitude, some scholars have not found support for this connection. (Chawla, D.; Joshi, H. 2019)

2.3.1 Studies Related to digital payment Services in Ethiopia

Gardachew Belay, Tadele Mengesha and Demis H/ Gebreal (2010) did a study on Ethiopia's e-banking prospects and difficulties, the research output shows the primary obstacles faced by Ethiopian private commercial banks in embracing technology include insufficient infrastructure, absence of proper legal frameworks, security concerns undermining customer confidence in technology usage, skepticism towards technological innovation, and limited support from top management. To address these challenges, the study recommends the implementation of laws

governing e-banking operations by the government and the reinforcement of security technologies.

Tesfaye Matiwos (2018) investigated in order to look at what influences adoption of mobile banking in Addis Ababa and found factors like ease of use, usefulness, and experience with mobile phones significantly impact the adoption of mobile banking. On the other hand, factors like trust, perceived risk, and expectations of performance didn't have a significant effect. To boost mobile banking adoption, the study suggested that banks focus on educating users about the advantages of mobile banking services and prioritize creating effortless and user-friendly mobile banking applications.

Melat Abera (2020) researched that evidence from a few chosen commercial banks in Ethiopia regarding the factors influencing customers' adoption of digital payment systems and the study's key discoveries reveal that customers are adapting to digital payment systems based on several factors: relative advantage, compatibility, complexity, perceived risk, and consumer innovativeness. These variables have a positive and significant impact on the adoption of digital systems by customers. While the obtained results are encouraging, they also suggest the necessity for additional research, particularly by including other institutions in different geographical regions of the country.

2.4 Conceptual framework

2.4.1 Perceived ease of use

Financial institutions actively promote the utility and user-friendly aspects of mobile wallets for digital payments through various campaigns. These initiatives highlight the advantages offered by adoptions of digital payments, such as enhanced convenience and a superior transactional experience (Flavian and Guinaliu, 2020). Previous research by Adeel, L., Cao, X., Gong, M., Liu, Zhiying, L. & Yu, L. (2018) revealed that perceived usefulness, ease of use, satisfaction, and usage intention play pivotal roles in shaping consumer trust, thereby influencing their usage behavior. Given that a significant portion of the population is already proficient in using smart phones, mobile payments are tailored to meet user preferences (Chandra, 2019).

The increasing number of digital wallet users underscores the importance of ensuring ease of use, as it positively correlates with customer satisfaction and fosters positive consumer attitudes (Aita, J. & Ramadan, R. (2018), Singh, S., & Rana, R. (2017) emphasized that ease of use stands out as a key determinant in the adoption and continued usage of digital payments. Its significance lies in enabling consumers to save time and optimizing their overall product experience. First-time users of mobile payments, as identified in Dhir's study (2020), perceive the utility and express the intention to use these services when factors such as security, ubiquity, and ease of use are discerned.

As the user base for mobile wallets expands rapidly, individuals are increasingly seeking service providers that offer attractive promotional benefits. According to Madan and Yadav (2016), the provision of promotional benefits is a significant factor influencing consumer preference for mobile wallets as an alternative payment method. These benefits may include cash back payments, loyalty points, and referral rewards, as noted by Chawla and Joshi (2019). Such incentives serve as added advantages for users, allowing them to save money by redeeming coupons or vouchers in subsequent transactions (Bagla & Sacheti, 2018).

2.4.2 Perceived usefulness

Many researchers defined that Perceived usefulness refers to how consumers view the effectiveness and convenience provided by digital payment systems in streamlining their daily transactions (S. Roy and I. Sinha, 2014). Essentially, it encompasses the advantages individuals can derive from utilizing e-payment systems. These systems offer users a convenient method of payment, allowing them to store and transfer currency value. (S. Chakravorti, 2003)

2.4.3 Perceived risk

The significance of perceived risk has become a crucial determinant in the adoption of mobile wallets, defined as the individual's uncertainty about e-payment systems, due to their concern about fraud, theft, hacking, misuse of personal information as highlighted by S. Ram and J. sheth,(1998) in their study on Consumer resistance to innovations. The level of trust established between users and mobile wallet technology plays a pivotal role in encouraging technology usage, influencing users' decisions to proceed with transactions. Therefore, transactional security is essential in motivating users to engage in mobile transactions. Furthermore, users with prior experience in mobile wallet transactions are more likely to develop trust in the transaction

process, as noted by Oney, E.; Guven, G.O.; Rizvi, W.H. (2017). Additionally, there is a perceived trust element regarding a user's commitment to a mobile wallet, encompassing knowledge-based trust, institution-based trust, calculative-based trust, cognitive-based trust, and personality-based trust, all impacting an individual's confidence in the mobile wallet (Fan. 2018).

2.4.4 Trust

In the context of behavior, is an assessment of the extent to which behavior is positively or negatively evaluated. Davis, F. D. (1989), suggested that the primary factor determining a user's decision to interact with the system is their overall confidence in information technology and its applications. This assertion aligns with Abrazhevich's (2001) research, which indicates that users' acceptance of e-payment users place their trust in the system's ability to safeguard their personal information and money from any unauthorized access. Highlighting the pivotal role of trust confidence stems from the users' belief in the system's reliability and its commitment to protecting their data and funds from misuse and theft.

2.4.5 Consumers innovativeness

The origin of consumer innovativeness can be traced back to the Diffusion of Innovations Theory. According to Rogers and Shoemaker (1971), consumer innovativeness is described as the extent to which an individual adopts new ideas ahead of the average person within their social environment. Blackwell, Miniard, and Engel, (2006) In essence, individuals with high innovativeness exhibit a readiness to embrace changes in ideas and objects, coupled with the capability to persuade others to adopt these innovative concepts and items.

(Manning, Bearden, and Madden, 1995), extremely inventive consumers typically make choices to embrace novel ideas autonomously, displaying a keen fascination with innovation and a robust inclination to explore fresh product details. Hoffmann and Soyez (2010) highlight that these forward thinking consumers employ distinct media channels to gather information, often concentrating on particular product categories. Their goal is to comprehend the technical intricacies of emerging products. Moreover, due to their aspiration to serve as information sources for their peers, they are more inclined to assume roles as opinion leaders and early adopters of innovative products.

The research's conceptual framework was adapted from existing studies and modified based on diffusion of innovations theory. This means the framework draws inspiration from previous work on how new technologies are adopted, but it has been tailored to specifically address the unique context of telebirr adoption.

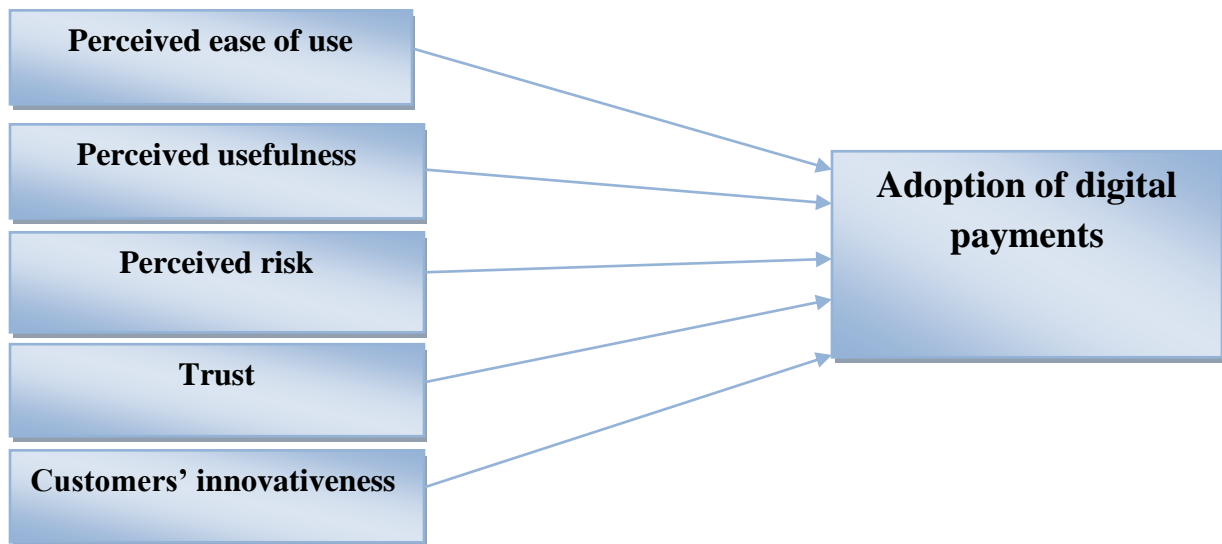


Figure 1 conceptual frame work

2.5 Research Hypothesis

H1:- Perceived ease of use has a positive and significant influence on customers' adoption of digital payments

H2:- Perceived usefulness has a positive and significant influence on customers' adoption of digital payments

H3:- Perceived risk will negatively affect customers' adoption of digital payments

H4:- Trust has a positive and significant influence on customers' adoption of digital payments

H5:- Customers' innovativeness has a positive and significant effect on their adoption of digital payment systems

CHAPTER THREE

3. Introduction

This section delves into the research methodology were employed for the execution of the investigation. It encompasses the study's population and sample, the origin and nature of the data, procedures for data collection, approaches to data analysis used, and lastly addresses ethical considerations associated with the study.

3.1 Description Area of Study

This segment outlines the digital transaction landscape in Ethiopia in relation to the elements that impact customers' acceptance of digital payment systems. The Ethiopian Digital Payments Strategy (EDPS) was endorsed by the Council of Ministers on June 23rd, 2021, and is formulated as a key initiative to promote the widespread adoption of inclusive digital payments. Study focuses on telebirr in Addis Ababa, examining the factors influencing its selection and their impact on its dependent characteristics. Ethio Telecom, the state-owned telecom operator, has collaborated with other banks to launch integrated digital financial services, known as telebirr. The initiative aims to expand its services by emphasizing the growth of financial services, particularly through e-money, to include individuals currently excluded from formal financial services. The selection of telebirr for this study is motivated by its efforts to align with the National Bank of Ethiopia's secure transaction practices. These include the digitization of government and state-owned enterprise payments, the implementation of cash-handling fees for financial institutions, the imposition of limits on cash transactions, the creation of tax incentives for electronic taxable transactions, and the digitization of social protection and humanitarian payments. The comprehensive approach to digital transactions in the country positions telebirr as a progressive force, advancing toward a more diverse customer base in the realm of digital transactions.

3.2 Research Approach

Quantitative research is regarded as the organized inquiry about phenomenon through collection of numerical data and execution of statistical, mathematical or computational techniques. (Lee, as cited in Slevitch, 2011).

This research was quantitative in nature, since only a limited range of preset answers were available for the questionnaires used to gather pertinent data from the respondents, it was possible to figure out which variable had the greatest influence on the acceptance of digital payment systems by customers. Generating numerical values and assessing the extent of adoption dimensions was accomplished through the use of questionnaires. This approach aimed to examine the study's objective and validate the hypotheses, making a quantitative method the most appropriate choice.

3.3 Research Design

This investigation employed an explanatory approach, aiming to unveil the factors that influenced the widespread adoption of digital payments within telebirr. Hypotheses outlining the study's independent and dependent variables were part of explanatory research to assess the variables that affected the adoption of digital payment systems by Tele birr users. Furthermore, because the study includes respondents' demographic information, the research design included both explanatory and descriptive components.

3.4 Population of the study

The research aimed to investigate the elements influencing the acceptance of telebirr Digital Payment among telebirr customers in the city of Addis Ababa. A sample size from the customer base, which had rapidly grown to over 39.3 million (allover in the country) within a short timeframe due to the introduction of a new mobile wallet platform, was utilized for this study. Consequently, the study focused on subscribers of the telebirr mobile wallet as the population of interest.

3.5 Sampling and Sampling Techniques

3.5.1 Sample size

This research tailored to continually growing population as daily bases which is basically difficult to determine specific number of customers regarding to Addis Ababa city, so far, emulating sample sizes from similar studies sample sizes computed using specific formulas. Following the methodology suggested by Krejcik and Morgan (1970) and Chon (1969) for populations exceeding 100,000, a confidence level of 95% will be applied. Given that the

population under investigation surpasses 100,000 and is specifically noted to be above 39.3 million, the formula has been employed to determine the sample size based on derived value;

$$n = \frac{Z^2 pq}{e^2}$$

Where:

n = required sample size for unknown population (more than 100,000)

Z = Z-value which is 95% desired level of confidence from the table equals to 1.96

P = the probability of positive response equals to 0.5

q = the probability of negative response equals to 1-P which is 0.5

e = the tolerable error or desired level of precision equals to $\pm 5\%$

$$\text{Thus, } n = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05)^2} = 384.16 \equiv 384$$

3.5.2 Sampling technique

This study employed convenience sampling, a non-probability sampling technique, to select participants. Due to time and financial constraints, researcher chose participants based on ease of access and availability rather than random selection. To minimize researcher bias, the study focused on individuals who frequently used telebirr's digital payment platform, such as mobile wallets and contactless payments. This approach allowed for quick data collection from a readily accessible pool of participants who could provide valuable insights into the adoption of telebirr. By selecting participants based on their availability or accessibility could efficiently collect data on factors influencing digital payment adoption aimed to explore the underlying reasons motivations behind individuals' choice regarding the digital payment system for collecting rich quantitative data.

3.6 Data collection Methods

In this study, both of primary data and existing sources were used in information gathering process. The primary data resource collected by using a questionnaire, while secondary sources

included both published and unpublished materials such as internet resources, NBE (national bank of Ethiopia) reports, and telebirr databases. These secondary sources were employed to support and reinforce the findings derived from the primary data.

3.6.1 Primary Data Collection Method

The survey for this study includes general questions to collect personal and demographic information about the participants. It also has a comprehensive section on factors that influence customers' adoption of digital payment systems. Participants are asked to indicate their level of agreement with each statement on a five-point Likert scale.

3.6.2 Secondary Data collection Method

Information from the company's annual report gathered as secondary data, sourced from materials located at the company's premises. Additionally, primary data collected supplemented and reinforced by utilizing full research papers, articles, journals, books and online sources.

3.7 Data collection procedures

Questionnaire Design: A Likert scale questionnaire was developed with items designed to measure various factors influencing digital payment adoption.

Questionnaire Delivery: Designed questionnaire delivered in person and to target individuals (target respondents) who use digital payments of telebirr and gather the distributed questionnaires. The research utilized online survey platforms a plus specifically shared a Google form and email distribution of a questionnaire to reach out telebirr digital payment users that allows to distribute and collect responses easily.

Pilot Testing: Before administering the questionnaire to the target respondents, a pilot test was conducted with a small sample to ensure clarity, relevance, and reliability of the instrument items. Based on feedback received during the pilot test any necessary revision was made.

Data Collection: Responses Collected from the participants based on their ratings on the Likert scale for each questionnaire item. Ensured were anonymity and confidentiality to encourage honest responses.

3.8 Data Analysis Methods

Statistical techniques were applicable to analyze data, and the results, along with answers to pertinent questions, were presented in tabular format. Multiple regression analysis was used to determine the extent to which the independent variables (factors for adoption) influenced the dependent variable (intention to adopt). The degree of association between the adoption-related variables and the intention to adopt was evaluated by using correlation analysis. Descriptive analysis was used to summarize the demographic characteristics of the participants, such as gender, age, education, occupation, monthly income, and frequency of digital transaction service use.

Data analysis was carried out using the SPSS program adaptation. The analysis included descriptive statistics like percentages, frequencies, mean, and standard deviation, along with inferential statistics such as regressions and tables. The primary objective of collecting demographic data, including age, gender, education, and profession, was to gain a comprehensive understanding of the telebirrs' customer base. The main purpose of analysis of inferential statistics was to determine the impact of variables on the customers' adoption of digital payment.

3.9 Reliability and Validity

3.9.1 Reliability

A reliability test in research is a method used to assess the consistency and stability of a measurement or instrument over time. It is important to determine whether the tools and instruments used in a study consistently produce similar results when employed in the same context. Reliability testing helps the researcher ensure that findings are not influenced by inconsistencies or random errors in measurement. In this study to assess Cross-reference the credibility of sources used peer-reviewed journals and, the findings of this study were replicated by other researchers, indicating the reliability of the results. Cronbach's Alpha was used to assess the internal consistency of the measurement instrument, ensuring the reliability of the data. The research process was transparently documented, including a clear description of the data sources, methodologies, and any limitations, enhancing the credibility of the study or biases to determine how closely related a set of items are as a group.

3.9.2 Validity

(John, W.C. 2009), Validity refers to the accuracy and relevance of the research instruments and findings.

In this study, validity was ensured through several measures. Pilot testing was conducted with a sample of the target population to assess the accuracy of the instrument designed earlier which is questionnaire and identify any potential issues. Additionally, the research advisor and other experts (internal examiner of this research) provided feedback on the content of the questionnaire to ensure that it accurately captured the intended concepts. These measures helped to enhance the validity of the study and ensure that the findings accurately reflected the research objectives.

3.10 Ethical considerations

All the data was handled with utmost confidentiality, ensuring that the identity of the respondents was kept secret, particularly in terms of respecting participants' privacy and maintaining the confidentiality of their responses. It was important to assure participants that their information would be handled with care and used only for the stated research purposes. A statement in the questionnaire or consent form explicitly outlined how the data would be handled, stored, and used. This helped participants feel more secure about providing honest and accurate responses. There was no alteration or modification of any information; therefore, it was presented exactly as collected, aligning with the literature gathered for the purpose of this study. The information obtained through the questionnaire was exclusively utilized for this research, serving the specific objective required to fulfill the study's requirements.

CHAPTER FOUR

4. RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents findings and subsequent analysis of the study. As explained in the preceding chapters, the research was designed to investigating influencing factors of customer's digital payment adoption: specifically among selected telebirr customers. Hence, this section presents an analysis, interpretation, and discussion of the data collected on factors influencing customer adoption of the Tele Birr digital payment platform.

4.2 Rate of response

The survey lasted for a period of four weeks, during which 384 questionnaires were handed out. However, only 295 were retrieved, leaving 57 questionnaires not filled correctly and 32 questionnaires unreturned. Despite this, a total of 295 questionnaires were deemed usable for analysis, resulting in a satisfactory response rate of 77%, which is sufficient to proceed with the study.

Table 1 Respondent rate

Target Respondent	Achieved	Respondent Rate
384	295	77%

“Survey result, 2024”

Based on the above respondents' response rate table refers response rate of the respondents is 77%, which represents the percentage of correctly completed questionnaires (295) out of the total number of expected responses (384).

4.3 General Information about the Respondents

Primarily, the questionnaire collected general information about the study participants, including personal and professional attributes. Demographic data such as gender, age, education level, monthly income, and work experience were collected and summarized to provide an overview of the respondents' characteristics.

Table 2 General information about respondents

Dimension	Measurement scale	N=295	100 %
Gender	Male	150	50.8
	Female	145	49.2
Age	18-30	159	53.9
	31-40	117	39.75
	41-50	15	5.1
	Above 50	4	1.4
Educational Level	High school & below	12	4.1
	Diploma	49	16.6
	Degree	154	52.2
	Masters or above	80	27.1
professional work	Government Employee	87	29.5
	Private Employee	114	38.6
	Business	54	18.3
	NGO	4	1.4
	Other	36	12.2
Monthly income	Up to 10,000	130	44.1
	10,001-20,000	108	36.6
	Above 20,000	57	19.3
For how long have you been telebirr customer?	Less than 1 year	78	26.4
	1-2 years	95	32.2
	Above 2 Years	122	41.4

“Survey result, 2024”

The table above shows that male participants make up the majority of respondents at 50.8%, with female respondents accounting for the remaining 49.2% of the total sample. This indicates that the research primarily consisted of male participants.

The respondents' ages were categorized into different ranges, and it was found that most of them (53.9%) belonged to the 18-30 age group. Nearly 40% (39.75%) of the respondents were in the 31-40 age. Only a small fraction of the respondents (5.1%) were in the 41-50 age category, while a mere 1.4% were above 50 years old.

The educational background of the respondents shows that 52.2% possess a bachelor's degree, 27.1% hold a master's degree, and only a small fraction of 16.6% have a diploma. Additionally, 4.1% of the respondents have an educational level of high school or below. This suggests that the majority of the respondents have attained a high level of education, with most being bachelor's degree holders or higher. It can be inferred that the respondents likely have a strong educational foundation, with a good grasp of knowledge and understanding.

The survey respondents' occupations were diverse, with the majority being private employees (38.6%) and government employees (29.5%). The rest were in own business (18.3%), NGO workers (1.4%), and others (12.2%). In terms of income, most respondents earned up to 10,000 Birr (44.1%), followed by those earning between 10,000 and 20,000 Birr (36.6%), and then those earn above 20,000 Birr (19.3%). This suggests that both low- and high-income earners are adopting digital payments.

Regarding the respondents' experience with telebirr digital payment, a significant portion (41.4%) had more than 2 years of experience, while around a third (32.2%) had 1-2 years of experience. The remaining respondents had less than 1 year of experience (26.4%). The results indicate that most respondents had 1-2 years of experience with telebirr.

4.4 Descriptive Statistics

The responses from the variables indicated below were measured on five point Likert scale with measurement value 1= Strongly disagree; i.e. very much disagreed with the case described; 2= Disagree, i.e. not agreed with the case described; 3= Neutral, i.e., uncertain with the case described; 4= Agree, i.e., feeling all right with the case described and considered as satisfy; and 5 =strongly agree, i.e. very much supporting the case described and considered highly agreed.

To make easy interpretation, the ranges of values were reassigned to descriptive statics mean and standard deviation to realize the affecting factors of telebirr adoption.

4.4.1 Perceived ease of use

Perceived ease of use to the extent to consumers believes that using a digital system is effortless indicated. It is crucial influencing consumers' adoption digital payment systems, as individuals are more likely to embrace system that they perceive easy to use.

Table 3 Descriptive statistics of perceived ease of use

Perceived ease of use factor variables	N	Minimum	Maximum	Mean	Std. Deviation
Less effort they spent while using	295	1	5	4.09	.779
Satisfied on the content provided	295	2	5	4.00	.710
User friendly designs are there	295	1	5	3.96	.715
Satisfied with information management system	295	2	5	4.04	.757
Fast speed for completing transaction	295	1	5	4.00	.819

“Survey result, 2024”

From the above table the highest satisfaction rating of 4.09 was given to the perceived effort required to use the system, followed closely by user satisfaction with the system's information management capabilities, which scored 4.04. User satisfaction with the content provided by the system and perceived speed of the system for completing transactions received mean scores of 4.00, user-friendly design scored 3.96. These results suggest that on average, users found the system's design to be moderately user-friendly, with a moderate level of variation in their responses. Users place a high value on system is be relatively easy to use, with satisfactory content, information management system and fast speed in completing transaction.

4.4.2 Perceived usefulness

The degree to which a user believes that using a digital payment system, such as Tele birr digital wallet, will enhance their performance or productivity.

Table 4 Descriptive statistics of perceived usefulness

Perceived usefulness factor variables	N	Minimum	Maximum	Mean	Std. Deviation
Useful payment platform in daily transactions	295	2	5	4.07	.730
Simplifies daily wallet transactions	295	2	5	3.95	.705
Easy to complete a store or transport currency value	295	1	5	3.94	.753
Wide range of services are provided	295	2	5	4.00	.712
Service charge is lower	295	2	5	3.95	.708
The system minimizes the time spent on payment	295	2	5	4.06	.680

“Survey result, 2024”

The above statistics presents the descriptive statistics for various perceived usefulness factor variables related to payment system that mean score of 4.07 indicating that on average participants find the payment platform highly useful for daily transactions. the mean score 4.06, showing that participants believe the system effectively reduces the time spent on payments, other factors ratings such as a wide range of services (4.00), simplifying daily transactions (3.95), and ease of completion (3.94) were close to these means. How useful and the time-saving feature of the payment system significantly influences users' belief in its usefulness.

4.4.3 Perceived risk

Perceived risk in the adoption of digital payment refers to the potential losses or uncertainties that consumers perceive when using digital payment methods.

Table 5 Descriptive statistics of perceived risk

Perceived risk factor variables	N	Minimum	Maximum	Mean	Std. Deviation
The system mitigate for risk and fraud	295	1	5	3.86	1.133
The system perform well and process payment correctly	295	1	5	4.11	.997
awareness of potential spam in making informed decision	295	1	5	4.03	.996
Protected about potential misuse of personal information	295	1	5	4.17	.841

“Survey result, 2024”

According to table 5 result shows, the system has the highest mean of personal information (4.17) followed by the system excels in performing well and accurately processing payments with a mean score of 4.11. This is closely followed by the awareness of spam for informed decision-making (4.03), and the system's ability to prevent fraud and risk (3.86), which is highly valued for safeguarding against potential losses or uncertainties perceived by consumers.

4.4.4 Trust

Table 6 Descriptive statistics of trust

Trust factor variables	N	Minimum	Maximum	Mean	Std. Deviation
Security of using	295	1	5	3.97	.812
Familiarity with the system	295	2	5	3.96	.805
Reliable in protecting privacy	295	1	5	4.00	.827
Transact as promised time frame of response	295	2	5	4.03	.812
Keep accurate transaction records	295	1	5	4.06	.795

“Survey result, 2024”

Trust refers to the confidence users have in the security, reliability, and convenience of using payment methods.

Table 6 indicated that maintaining precise transaction records received the highest average trust rating (4.06), followed by transactions being completed within the promised time frame (4.03), reliability in safeguarding customer privacy (4.00), familiarity with the system (3.96) and the security of use (3.97). This data suggests that customers trust the payment platform due to the accuracy of transaction records and the timely completion of transactions as promised.

4.4.5 Customers’ innovativeness

Customer innovativeness refers to the willingness and ability of a customer to adopt and use new technologies or products.

Table 7 Descriptive statistics of customers’ innovativeness

Customers’ innovativeness factor variables	N	Minimum	Maximum	Mean	Std. Deviation
Motive to use for various transactions	295	2	5	4.00	.767
Easy to navigate and perform transactions	295	1	5	3.99	.712
Sharing positive experiences with others	295	2	5	4.11	.694
Features and benefits are motivating factors	295	2	5	4.09	.723
Equipped with updated services	295	1	5	4.04	.734

“Survey result, 2024”

From the above result sharing positive experiences with others is a factor received the highest average rating of 4.11 among all the factors, features and benefits as a motivating factor for consumers innovate (4.09), equipped with updated services (4.04), motive to use various transactions (4.00), easy to navigate and perform (3.99), suggesting that most respondents sharing positive experiences with others and saw the importance features and benefits as motivating factors for their innovativeness, followed by being equipped with updated services

for their innovativeness, motives for various transactions also play significant roles, while ease of navigation and performance of transactions slightly.

4.4.6 Adoption of telebirr

Adoption of digital payments refers to the process by which individuals, businesses, and organizations transition from traditional payment methods, such as cash and checks, to electronic or digital payment methods.

Table 8 Descriptive statistics of adoption of Tele birr

Adoption of telebirr factor variables	N	Minimum	Maximum	Mean	Std. Deviation
Convenient to make digital payments	295	1	5	4.08	.724
A service is widely accepted	295	2	5	3.92	.658
Provides better transaction platform	295	1	5	3.93	.723
Satisfied with the experience of using	295	2	5	3.95	.712
Frequently use telebirr	295	2	5	3.96	.746
Recommend to others this platform	295	2	5	4.01	.700

“Survey result, 2024”

The service finds convenient for making digital payments mean score is 4.08. Mean score of 4.01 respondents are likely to recommend the telebirr platform to others, the mean score is 3.92 out of 5, and suggesting that respondents perceive the service to be widely accepted and mean of 3.96 respondents also report frequently using the telebirr service. Respondents perceive telebirr provide better transaction with mean score of 3.93, this suggesting that respondents are generally satisfied with their experience of using the service, mean score of 3.95. The result shows that respondents are generally find it convenient to use the service for digital payments and respondents are likely to recommend the telebirr platform to others, indicating a positive referral behavior among users.

4.4.7 Descriptive statistics' of all variables average means

Table 9 Average mean of influencing factors

Influencing factors	N	Minimum	Maximum	Mean	Std. Deviation
Perceived ease of use	295	2.00	5.00	4.0176	.54106
Perceived usefulness	295	2.20	5.00	3.9810	.53571
Perceived risk	295	1.25	5.00	4.0424	.73851
Trust	295	2.20	5.00	4.0034	.58820
Customers' innovativeness	295	2.20	5.00	4.0447	.53468

“Survey result 2024”

The above table 9 indicates that respondents highly valued perceived ease of use by average mean of 4.0176 the effort they spent for using, the ease of contents on it, its user friendly designs, information management, and speed of the system for completing transactions. The system was perceived as highly useful by average mean of 3.981, especially for daily transactions and its time-saving feature also have a wide range of services with low service charge. Average mean of 4.0424 felt perceived risk, secure from risk and fraud, their privacy was protected, and they were able to make informed decisions. Trust in the system was high due to its accuracy, timeliness, reliability, and accurate transaction records with average mean of 4.0034. Consumers' innovativeness score average mean of 4.0447 were receptive to positive experiences, innovative features, updated services, and transaction performance.

4.5 Reliability and Validity test

4.5.1 Reliability

This study employs Cronbach's Alpha to assess the internal consistency and reliability of the measurement items used in the questionnaire.

Cronbach's Alpha developed by Lee Cronbach in 1951, coefficient alpha is a method used to evaluate the consistency of research results, ensuring that the findings are reliable and repeatable.

The Cronbach's Alpha score ranges from 0 to 1, with higher values (closer to 1) indicating a stronger consistency among the items in the scale, thereby increasing the reliability of the research. The questionnaire consisted of six sections and 31 questions designed to measure the variables of interest. Cronbach's Alpha analysis was conducted on the collected data to assess the internal consistency and reliability of these questions.

Table 10 Cronbach’s Alpha analysis of reliability

Variable	Cronbach's Alpha	Number of Items	Remark: Based on Cronbach’s Alpha Value
Perceived ease of use	.761	5	Acceptable
Perceived usefulness	.830	6	Good
Perceived risk	.725	4	Acceptable
Trust	.776	5	Acceptable
Customers innovativeness	.788	5	Acceptable
Adoption of telebirr digital payment	.808	6	Good
Cronbach’s alpha	.940	31	Excellent

“Survey result, 2024”

The alpha coefficients for the six constructs suggest that the items comprising them showed acceptable internal consistency, with values ranging from 0.725 to 0.940. Since all alpha values exceed 0.70, all variables are deemed reliable. Based on these findings, it can be concluded that the test is reliable, as the independent variables have met the thresholds of reliability as measured by Cronbach's Alpha.

4.5.2 Validity

To make sure that the questionnaires are valid in terms of content, a pilot test of the questionnaire was floated to users of Tele birr digital payment platform and based on their constructive and valid comments questionnaires were amended to suit the desired level of validity.

4.6 Inferential Statistics

4.6.1 Correlation Analysis

The correlation matrix is used to check the outline of correspondence in the Pearson Correlation Coefficient.

Table 11 Pearson correlations for the determinants of intention to adoption telebirr

		Perceived ease of use	Perceived usefulness	Perceived risk	Trust	Customers' innovativeness	Telebirr adoption
Perceived ease of use	Pearson Correlation	1	.842**	.204**	.782**	.855**	.901**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	295	295	295	295	295	295
Perceived usefulness	Pearson Correlation	.842**	1	.226**	.721**	.792**	.906**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	295	295	295	295	295	295
Perceived risk	Pearson Correlation	.204**	.226**	1	.187**	.254**	.221**
	Sig. (2-tailed)	.000	.000		.001	.000	.000
	N	295	295	295	295	295	295
Trust	Pearson Correlation	.782**	.721**	.187**	1	.724**	.781**
	Sig. (2-tailed)	.000	.000	.001		.000	.000
	N	295	295	295	295	295	295
Customers' innovativeness	Pearson Correlation	.855**	.792**	.254**	.724**	1	.845**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	295	295	295	295	295	295
Telebirr adoption	Pearson Correlation	.901**	.906**	.221**	.781**	.845**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	295	295	295	295	295	295

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

“Survey result, 2024”

Julie Pallant (2005) states that the Pearson correlation coefficient (r) ranges from -1 to +1, the sign preceding the value signifies whether the correlation is positive (meaning both variables increase together) or negative (indicating that one variable decreases as the other increases). The absolute value's size reflects the relationship's strength.

Table 12 Rules of thumb about the strength of correlation coefficients

Range of coefficient	Description of strength
$\pm.81$ to ± 1.00	Very strong
$\pm.61$ to $\pm.80$	Strong
$\pm.41$ to $\pm.60$	Moderate
$\pm.21$ to $\pm.40$	Weak
$\pm.00$ to $\pm.20$	None

“Hair (2003)”

A perfect correlation of 1 or -1 implies that the value of one variable can be precisely determined by knowing the value of the other variable. Conversely, a correlation of 0 indicates no relationship between the two variables.

4.6.1.1 Adoption of telebirr correlation with other variables

Based on the correlation values interpret the relationship as follows, the adoption of telebirr is positively correlated with Perceived ease of use ($r = 0.901$, $p < 0.001$) this suggests there is very strong correlation that users who find telebirr easy to use are more likely to adopt it. Perceived usefulness ($r = 0.906$, $p < 0.001$) this indicates this there is very strong correlation that users who perceive Tele birr as useful are more likely to adopt it. Trust has a strong relation ($r = 0.781$, $p < 0.001$) this suggests that users who trust Tele birr are more likely to adopt it. Customers' innovativeness ($r = 0.845$, $p < 0.001$) this indicates a very strong correlation that users who are more innovative and open to new technologies are more likely to adopt telebirr. The adoption of telebirr is also positively correlated with perceived risk, but to a lesser extent correlate in weak ($r = 0.221$, $p < 0.001$).

4.6.1.2 Perceived ease of use correlation with other variables

Strong positive correlation with perceived usefulness ($r = 0.842, p < 0.001$): This means that as perceived ease of use increases, perceived usefulness also increases. Perceived ease of use is strongly correlated with Trust ($r = 0.782, p < 0.001$) this suggests that users who trust telebirr find it easier to use. Customers' innovativeness ($r = 0.855, p < 0.001$) this indicates that users who are more innovative and open to new technologies find telebirr easier to use. This implies that as the perceived ease of use increases, these other factors are also likely to increase. Perceived ease of use has a weak correlation with perceived risk ($r = 0.204, p < 0.001$), suggesting that as the perceived ease of use increases, the perceived risk may slightly increase as well.

4.6.1.3 Perceived usefulness correlation with other variables

Perceived usefulness is positively correlated with trust ($r = 0.721, p < 0.001$) and customers' innovativeness ($r = 0.792, p < 0.001$), indicating that as the perceived usefulness increases, these factors are also likely to increase this indicates that users who trust the service platform and are more innovative and open to new technologies perceive telebirr as more useful. Perceived usefulness has a weak positive correlation with Perceived Risk ($r = 0.226, p < 0.001$), suggesting that as the perceived usefulness increases, the perceived risk may slightly increase as well.

4.6.1.4 Perceived risk correlation with other variables

Perceived risk is positively correlated with telebirr adoption ($r = 0.221, p < 0.001$), customers' innovativeness ($r = 0.254, p < 0.001$), perceived ease of use ($r = 0.204, p < 0.001$), perceived usefulness ($r = 0.226, p < 0.001$), and correlation with trust ($r = 0.187, p < 0.001$). This suggests that all the correlations are weak.

4.6.1.5 Trust correlation with other variables

Trust is positively correlated with customers' innovativeness ($r = 0.724, p < 0.001$) this indicates that users who are more innovative and open to new technologies trust telebirr more. There is a positive correlation between trust and perceived ease of use ($r = .781, p < .001$). This means that as the perceived ease of use of telebirr increases, trust in telebirr also increases. There is a positive correlation between trust and perceived usefulness ($r = .782, p < .001$). This means that as the perceived usefulness of telebirr increases, trust in telebirr also increases. There is a weak positive correlation between trust and perceived risk ($r = .187, p < .001$).

4.6.1.6 Customers' innovativeness correlation with other variables

Customers' innovativeness is positively correlated with adoption of telebirr ($r = 0.845$, $p < 0.001$) this suggests that users who are more innovative and open to new technologies are more likely to adopt telebirr. Trust ($r = 0.724$, $p < 0.001$) this indicates that users who are more innovative and open to new technologies trust telebirr more.

Overall, the results suggest that perceived ease of use, perceived usefulness, and customers' innovativeness are important factors that influence strongly the adoption of telebirr as well as trust is a strong predictor of adoption in telebirr. Perceived risk is not as strongly correlated with adoption while it has , but is still a significant factor.

4.6.2 Multiple Regression assumptions

Linear regression used to investigate the impact of independent variables (perceived ease of use, perceived usefulness, perceived risk, trust and consumers innovativeness) on the dependent variable (adoption of telebirr). Prior to conducting regression analysis to examine the hypothesized relationships, the data were assessed for potential violations of key assumptions, such as linearity, normality, and homoscedasticity, to ensure the validity of the results.

4.6.2.1 Multi co-linearity test

Multi co-linearity pertains to the connection among the independent variables in a model.

Table 13 Co-linearity statistics

Variables	Co-linearity statistics	
	Tolerance	VIF
Perceived ease of use	.173	5.793
Perceived usefulness	.264	3.784
Perceived risk	.931	1.074
Trust	.369	2.713
Customers' innovativeness	.243	4.113

“Survey result, 2024”

Tolerance, which measures the unexplained variability of a particular independent variable by other independent variables, is computed using the formula $1-R^2$ for each variable (Judge and Griffiths, 1969). A very small tolerance value (less than 0.10) implies a high degree of multiple correlations with other variables, potentially indicating Multi co-linearity. In this context, a Variance Inflation Factor (VIF) greater than 10 would be worrisome, as it suggests the presence of Multi co-linearity.

The above co-linearity statistics table13 refer, the tolerance value is above 0.1 and VIF is less than 10. This shows there is no multi co-linearity between independent variables.

4.2.1.1 Normality test

A normal distribution is characterized by a symmetrical, bell-shaped curve where the majority of data points cluster around the middle, tapering off towards the extremes. To evaluate normality, one can examine the skewness and kurtosis values, which provide insight into the distribution's shape and symmetry.

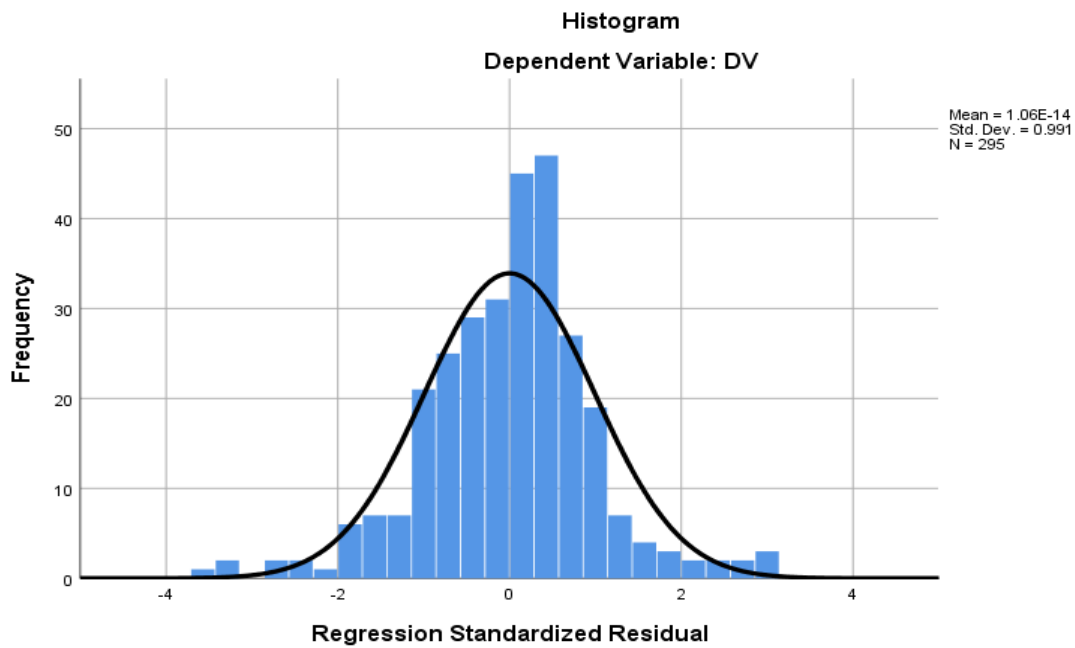


Figure 2 Normality curve

“Survey result, 2024”

As showed in the normality curve figure 2 on the histogram a p-value of 0.991 indicates that data are highly consistent with the assumption of normal distribution and does not provide strong

evidence to reject the null hypothesis of normality. This suggests that the assumption underlining linear regression have been met, enhancing the validity of the model and its potential to generalizability to the wider population. The mean tightly clustered around the mean and there is outlier on the histogram but additional measures were applied to check for normality.

To test the normality Skewness and Kurtosis also used and found out that the variables are in an acceptable normality range as showed on the normality measurement below table 14. According to (Asghar and Saleh, 2012), in large samples (200 or more) a range of -2.58 through +2.58 is considered at sufficient to establish normality of the data a 95% degree of confidence.

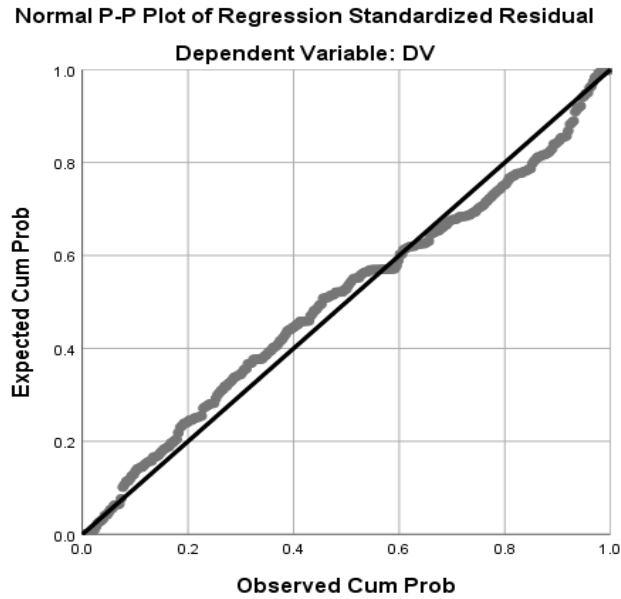
Table 14 Normality measurement

	N	Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error
Perceived ease of use	295	-.948	.142	1.685	.283
Perceived usefulness	295	-.758	.142	.826	.283
Perceived risk	295	-1.194	.142	1.675	.283
Trust	295	-.577	.142	.291	.283
Consumers innovativeness	295	-1.065	.142	2.277	.283
Adoption of Tele birr	295	-.599	.142	.533	.283

“Survey result, 2024”

4.6.2.2 Linearity

In a normal probability plot, the residuals should exhibit a linear pattern when plotted against the predicted values of the dependent variable. As indicated on the below PP plot figure the points are arranged in a nearly straight diagonal line from the lower left corner to the upper right corner, suggesting a linear correlation between the outcome and expected values. Where; DV is dependent variable which is adoption of Tele birr in the plot below,



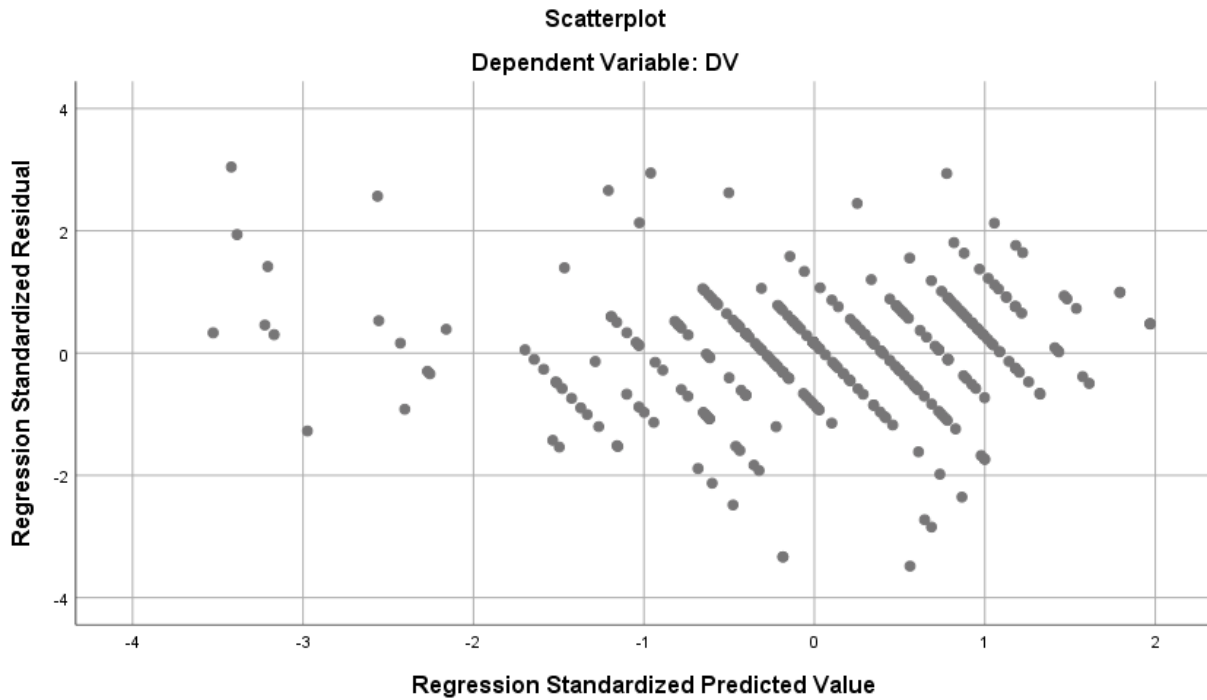
“Survey result, 2024”

Figure 3 Normal PP plot

4.6.2.3 Homoscedasticity

The variance of the residuals which is the difference between the observed and predicted value of dependent variable is constant across different levels of the independent variables.

As shown on the bellow scatter plot figure the assumptions of homoscedasticity which is variability of the data observed as points are approximately concentrated above and below the horizontal line along 0 on the graph which implies that no violation of homoscedasticity. Where; DV is dependent variable which is adoption of telebirr on the below scatter plot.



“Survey result, 2024”

Figure 4 Scatter plot

4.6.3 Multiple regressions

Regression analysis carried out using determinant variables which is significant factors, perceived ease of use, perceived usefulness, perceived risk, trust, consumers’ innovativeness and benefit as the independent Tele birr digital payment. This was to identify the most important combination of these factors that contribute to the adoption of Tele birr digital payment.

Table 15 Model summary

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.946 ^a	.896	.894	.16556	1.809

a. Predictors: (Constant), perceived ease of use, perceived usefulness, perceived risk, trust, consumers innovativeness

b. Dependent Variable: adoption of Tele birr

“Survey result, 2024”

R represents the multiple correlation coefficient between the predictors and the outcome, ranging from 0 to 1, with a higher value indicating a stronger correlation. According to the model summary table, the linear combination of the five independent variables has a strong predictive power of 0.946 for the dependent variable (the adoption of telebirr).

The above model summary table 15 indicates that the R^2 value in the given study is 0.896, which means that the independent variables included in the model can explain approximately 89.6% of the variance in the dependent variable (customers' adoption). In other words, the weighted combination of the independent variables accounts for around 89% of the observed variation in the dependent variable. The remaining 10.4% of the variance is attributed to extraneous, uncontrollable variables that are not included in the model.

4.6.3.1 Analysis of Variance

Table 16 ANOVA

Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	67.935	5	13.587	495.687	.000b
	Residual	7.922	289	.027		
	Total	75.856	294			

a. Dependent Variable: adoption of telebirr

b. Predictors: (Constant), perceived ease of use, perceived usefulness, perceived risk, trust, customers' innovativeness

“Survey result, 2024”

ANOVA is utilized to determine the statistical significance of the result by verifying the Null hypothesis that multiple regression in the population is zero (Pallant J., 2005). The ANOVA model is the significance test for multiple linear regressions. This study exhibits statistical significance with a significance level where the p-value is less than 0.001. The F-test assumes no direct relationship between the variables, used to measure the null hypotheses that there is no significant difference between means of two different groups, implying $R^2=0$. The ANOVA table 16 above demonstrates the model's acceptability by indicating that 495.687 F-value and p-value

is less than 0.001, enabling us to conclude that there is a linear relationship between the variables in this model. This confirms that the independent variables significantly impact customer adoption of digital payment.

Table 17 Regression coefficient analysis

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	.171	.085		1.997	.047
Perceived ease of use	.302	.043	.322	7.038	.000
Perceived usefulness	.426	.035	.450	12.164	.000
Perceived risk	.000	.014	.000	-.022	.983
Trust	.090	.027	.105	3.339	.001
Customers' innovativeness	.131	.037	.138	3.582	.000

a. Dependent Variable: adoption of telebirr

“Survey result, 2024”

Based on the provided results on the regression coefficient table 17, the regression equation that predicts customers' adoption of telebirr can be formulated as a linear combination of the independent variables as follows;

Regression equation

$$Y = a + \beta X1 + \beta X2 + \beta X3 + \beta bX4...$$

$$\text{Adoption of telebirr} = 0.171+0.302PEU+0.426PU+0.000PR+0.090T+0.131CI$$

Where;

- PEU is Perceived ease of use
- PU is Perceived usefulness
- PR is Perceived risk
- T is Trust
- CI is Customers' innovativeness

From the above coefficient model, the unstandardized beta coefficient tells us the unique contribution of each factor to the model.

A high beta value and a small p-value (less than 0.05) suggest that the predictor variable has made a statistically significant contribution to the model. Conversely, a small beta value and a high p-value (greater than 0.05) indicate that the predictor variable has little to no significant contribution to the model (George, 2003).

The findings suggest that the perceived ease of use significantly impacts the adoption of telebirr by consumers, with a beta value of 0.302, accounting for a 30.2% variation in digital payment adoption at significant ($p < 0.001$) when other variables are constant. Similarly, perceived usefulness has a strong influence, with a beta value of 0.426, contributing to a 42.6% variation in digital payment adoption at significant ($p < 0.001$) when other variables are constant. Trust also significantly affects customers' digital payment adoption, with a beta value of 0.090, causing a 9% variation at significant ($p = 0.001$ which is $p < 0.05$) when other variables are constant. Innovativeness also plays a significant role, with a beta value of 0.131, leading to a 13.1% variation in digital payment adoption at significant ($p < 0.001$) when other variables are constant. However, perceived risk does not seem to have a statistically significant impact on the dependent variable, as the p-value is greater than 0.05 (0.983) when other variables are constant. In conclusion, perceived ease of use, perceived usefulness, trust, and customers' innovativeness significantly influence customers' digital payment adoption.

Table 17 indicates perceived ease of use, perceived usefulness, trust and customers' innovativeness has a strong influence on customers' telebirr adoption. However predictor variable of perceived risk doesn't make a statistically significant contribution in predicting the adoptions of customers.

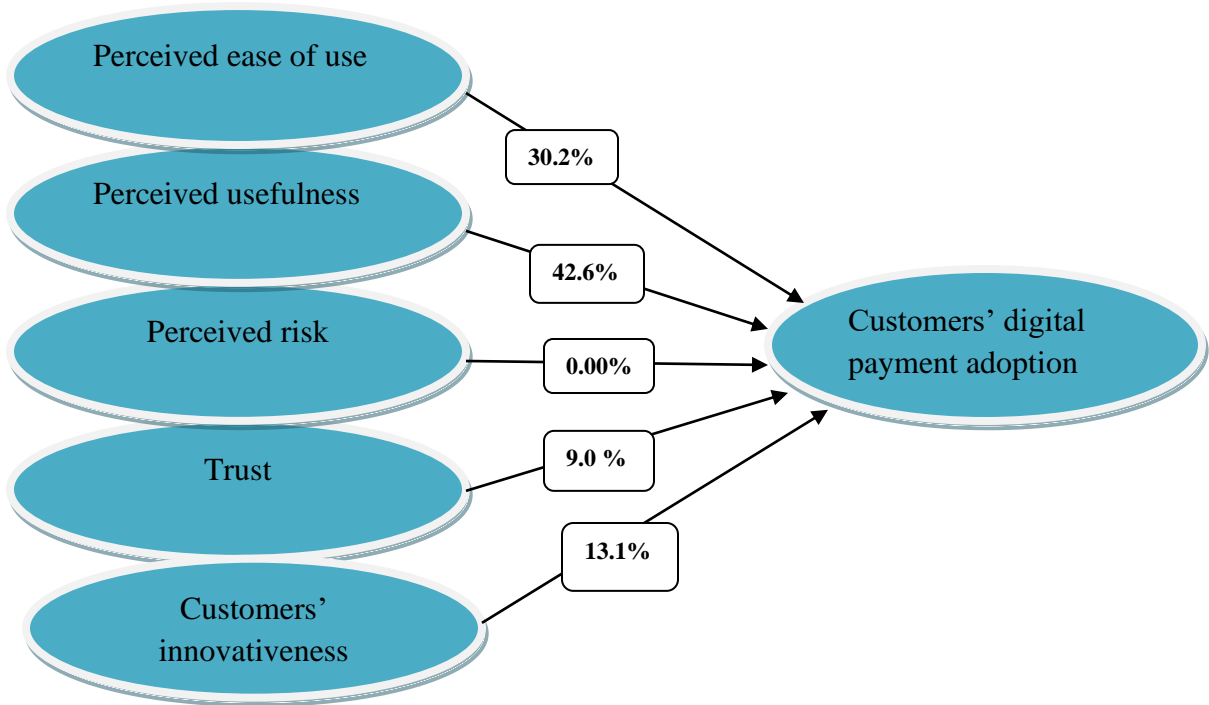
4.7 Hypothesis Testing

Table 18 Summary of the Hypothesis testing

Hypothesis	Beta	Significance	Result
H1:- Perceived ease of use positively and significantly affect customers’ adoption of digital payments	.302	.000	Accepted
H2:- Perceived usefulness positively and significantly affect customers’ adoption of digital payments	.426	.000	Accepted
H3:- Perceived risk negatively and significantly affect customers’ adoption of digital payments.	.000	.983	Rejected
H4:- Trust positively and significantly affect customers’ adoption of digital payments	.090	.001	Accepted
H5:- Customers’ innovativeness positively and significantly affects their adoption of digital payment systems.	.131	.000	Accepted

“Survey result, 2024”

Figure 5 Factors influencing customers’ adoption of digital payment



“Survey result 2024”

4.8 Discussion of Results from the open end question

Respondents asked to set their suggestions at the end of the questionnaire, based on respondents response for final open ended question, I try to generalize there answer excluding redundancies to pin-point their suggestion.

1. While user number increases the system might have delays have to upgrade their system every time.
2. Need to address all over the country focus on untapped potentials in addition introduce a feature for digital wallets and cards.
3. Integrate biometric authentication and block chain technology while fostering partnerships to enhance Ethiopian digital payment systems.
4. It is so meaningful activity and I am satisfied. Enhance the system for handling high-volume transactions.
5. Internet become obstacle to use it for various make stable network to configure and to create easy transaction so fast
6. Payment system should also accommodate international payment systems. Introduce a feature for cross-border transactions and remittances.
7. It has to work up to countryside, not just in Addis but other mega city's.
8. Should be careful on the cyber security on internet and make sure this is secure enough. Invest in robust cyber security measures to ensure the safety of user transactions.
9. Creating user-friendly and secure mobile payment applications that are accessible to a wide range of people. This could help increase adoption rates and make digital payments more convenient for the Ethiopian population. Additionally, investing in infrastructure to improve internet connectivity and digital literacy across the country could help accelerate the growth of digital payment systems in Ethiopia.
10. Provide an opportunity for young generation to develop some kinds of digital payments.
11. Provide customer support in multiple languages to cater to a diverse user base.
12. Add innovations on payment options for convenience.

The suggestions mentioned above show that giving priority to digital payment platforms' usability, trustworthiness, inventiveness, and convenience of use may greatly increase user engagement and adoption rates, which will ultimately fuel the expansion of digital payment

systems such as Tele Birr. This lends credence to the findings, which provide insightful information and additional support for the major variables that can affect the uptake and expansion of digital payment systems.

- ✓ Ease of use increase convenience and reliability. Configuring easy, fast transactions suggests a focus on improving the overall user experience and reducing friction in the payment process, ensuring the platform's scalability and responsiveness, which directly impacts the ease of use for customers.
- ✓ Usefulness accommodates expanding accessibility of international payment systems and introducing cross-border transaction and remittance features expands the usefulness of the digital payment platform by catering to a broader range of customer needs.
- ✓ Trust enhance system performance, improved security and trust integrate biometric authentication and block chain technology while fostering partnerships, which highlights the need to enhance the security and reliability of the digital payment platform, which are crucial for building user trust.
- ✓ Innovativeness in providing opportunities for the younger generation to develop digital payment solutions implies a focus on fostering innovation and engagement within the ecosystem, which can lead to more innovative features and improved customer experiences.

4.9 Discussion of the results

The survey findings highlight the importance of key factors that influence customer adoption of digital payment system such as Tele birr and provide valuable insight by prioritizing ease of use, usefulness, trust and innovativeness, digital platforms can enhance users' engagement and adoption rates ultimately driving the growth of digital payment.

The result suggests that users highly value a system that easy to use, has good content, efficient information management, and fast transaction speeds, the perceived ease of use has strong positive correlation with customer adoption contributing significant 30.2% impact on digital payment option. Previous studies have yielded the same result (Segenet Ayele, 2021) find positive significant relationship between perceived ease of use and intention to adopt digital

payment platform. (Lin c. and Nguyen c. 2015) demonstrates Perceived ease of use is a determinant factor for the adoption of e-payment.

Moreover, the survey reveals that users perceive digital payment system has highly useful for daily transactions particularly in terms of saving time. This perceived usefulness has a strong correlation with customers' adoption, contributing a substantial 42.6% variation in digital payment adoption. This suggests users are more likely to adopt digital payment system that offers convenience, speed and efficiency in their daily transactions. The findings in this study align with results seen in earlier research, (Segenet Ayele, 2021) find positive significant relationship between perceived usefulness and intention to adopt digital payment. (S. Ozkan, G. Bindusara, and R. Hackney, 2010) proved that perceived usefulness is critical factor in customers intentions to adopt an e-payment system.

Trust is another critical factor that emerged from the survey. Users place the high value on accuracy, timeliness, privacy protection, and security in their interactions with the payment platform. The strong positive correlation between trust and customer adoption indicates that users are more likely to adopt digital payment systems that they trust. This trust factor has the 9% effect on digital payment adoption, highlighting the importance of building trust with users. Previous studies have yielded the same result (A. Najdawi, Z. Chabani, R. Said, 2021) Perceived trust was found to have a significant relationship with customers' actual use of e-payment in Dubai and (S. Ozkan, G. Bindusara, and R. Hackney, 2010) explore were relatively sufficient trust is significant through customer intentions to adopt an e-payment system.

The survey also found that consumers value innovative features, benefits, updated services, and transaction performance. This consumers' innovativeness factor has a strong positive correlation with customer adoption, leading to a 13.1% variation in digital payment adoption. This suggests that users are attracted to digital payment systems that offered new and improved features, services, and performance. Prior research has produced comparable outcomes, (Melat Abera 2020) investigate consumers' innovativeness have a positive and significant effect on their adoption of digital payments.

Interestingly the survey found that perceived risk has a weak positive correlation with customer adoption and does not statistically significant impact in digital payment adoption. This suggests

that users as may not be concerned about risk as they are about other factors such as ease of use, usefulness, trust and innovativeness. Similar findings were observed line with in previous research studies, (Cacas, A., Diongson, M. B. A., Olita, G. M., & Perkins, R. 2022) the results show that perceived risk does not affect the respondents' intention to adopt mobile wallet of Gcash services since it has a high significance level and other study (Heang, L., Tenk, T., & Yew, H. 2020) discovered that the perceived risk is not a significant factor when it comes to adoption e-wallets, despite being considered one of the most suitable indicators for the acceptance of mobile wallets.

Overall, the survey findings have significant implications as prior studies have produced comparable outcomes for the designs and marketing strategies of digital platforms. To enhance users' engagement and adoption rates, digital payments should focus on improving ease of use, usefulness, trust, and innovativeness. This can be achieved by investing in user-friendly interfaces, offering convenient and efficient services, building trust through secure and reliable transactions, and continuously innovating and updating services to meet users' evolving needs. In additions, prioritize building trust with users, as this factor has a significant impact on customer adoption. This can be achieved through transparent communication, robust security measures, and timely resolution of user concerns.

CHAPTER FIVE

Summary conclusion and recommendations

5. Introduction

This chapter summarizes all the key findings from the study. It concludes what has been achieved and accomplished as a result of the investigation. Finally, it provides recommendations for the relevant stakeholders or authorities to consider.

5.1 Summary of the major finding

The primary objective of this research is to investigate the factors that influence customers' adoption of digital payments, using data from a select group of Tele birr users in Addis Ababa. The study employed an explanatory and quantitative approach, drawing a sample from the population of Tele birr digital payment platform users, with 295 responses used for analysis.

The study's findings are presented and discussed in sections, including descriptive statistics on respondent demographics and their views on the factors that influence customers' digital payment adoption. Notably, the majority of respondents agreed on the key influencing factors,

- ✓ Assigning high ratings to the factor perceived ease of use average mean of 4.0176, they value a system that is easy to use, has satisfactory content, good information management, and fast transaction speeds and moderately user-friendly with some variation in responses.
- ✓ The average mean of perceived usefulness, rated at 3.981 by the participants, indicates that they perceive the payment system as highly useful for daily transactions, the time-saving feature of the system is also highly valued significantly influence users' belief in its usefulness with some variations in responses.
- ✓ Assigning high ratings to the factor perceived risk average mean of 4.0424, underscores the system's strength in key areas crucial for ensuring user are secure from risk and fraud, their privacy (protection from misuse of personal information), and informed decision-making that protecting users from potential spam.
- ✓ Granting top marks associated with trust average mean of 4.0034, the findings suggest that customers value accuracy, timeliness, reliability, and keeping accurate transaction in

their interactions with the payment platform, which in turn enhances their trust in its services with some variations on responses.

- ✓ Survey results suggest that consumers' innovativeness is being given high ratings, with an average mean of 4.044 that sharing positive experiences, innovative features and benefits, updated services, motives for transactions, and transaction performance are all key factors influencing consumers in their decision-making processes with some variations in responses.

The results also suggest that there are strong positive correlations between the adoption of Tele Birr and each of these dimensions. Specifically:

According to Pearson's correlation; The study found that five dimensions are positively related to customer adoption of Tele birr. These dimensions are: perceived ease of use, perceived usefulness, trust, consumers' innovativeness, and perceived risk. The Pearson's correlation coefficients (r) and p -values (variables significance level) are provided for each dimension. The results show that perceived ease of use ($r = 0.901$, $p < 0.001$) and perceived usefulness ($r = 0.906$, $p < 0.001$) have the strongest positive correlation with customer adoption of Tele birr, followed by trust ($r = 0.781$, $p < 0.001$) and consumers' innovativeness ($r = 0.845$, $p < 0.001$). Perceived risk has a weak positive correlation ($r = 0.221$, $p < 0.001$) with customer adoption of Tele birr.

The extent to which several factors influence customer adoption of digital payment systems was assessed through the use of multiple linear regression analysis. The results are as follows:

- ✓ Perceived ease of use has a 30.2% impact on digital payment adoption.
- ✓ Perceived usefulness contributes to a 42.6% variation in digital payment adoption.
- ✓ Trust has a 9% effect on digital payment adoption.
- ✓ Consumers' innovativeness leads to a 13.1% variation in digital payment adoption.
- ✓ Perceived risk does not statistically impact digital payment adoption.

5.2 Conclusion

On the bases of this research objective as well as the findings the following conclusion is drawn.

The primary data was gathered using structured questionnaire and descriptive analysis were applied on the data attained a plus of undertaking a detailed analysis of the situation. Based on the result hypothesis of those variables shows a significantly positive relationship on the adoption of Tele birr, Customers attracted and most commonly having intentions to adopt a digital payment platform reveals in to perceived ease of use, perceived usefulness, trust, consumers' innovativeness.

The Tele birr payment system described as is perceived by users as highly usable, useful, secure, trustworthy, and innovative. Specifically,

- ✓ Users find the system easy to use, with satisfactory content, good information management, and fast transaction speeds.
- ✓ Users perceive the system as highly useful for daily transactions, particularly valuing its time-saving features.
- ✓ Users assign high ratings to the system's ability to ensure security, privacy, and informed decision-making.
- ✓ Users value the system's accuracy, timeliness, privacy protection, and security, which enhance their trust in the platform.
- ✓ Users' positive experiences, innovative features, updated services, and transaction performance are key factors influencing their decision to use the payment system.

The study found that five dimensions are positively related to customer adoption of Tele birr, with perceived ease of use and perceived usefulness having the strongest correlations. Trust and consumers' innovativeness also showed strong positive correlations, while perceived risk had a weak positive correlation. The results suggest that customers are more likely to adopt Tele birr if they find it easy to use, useful, trustworthy, and innovative, and if they perceive the risk associated with using it to be low. The Pearson's correlation coefficients and p-values support these findings.

To sum up, the perceived ease of use, perceived usefulness, trust, and consumers' innovativeness significantly influence customers' adoption of digital payment methods such as Tele birr as

multiple regression provided results. Specifically, perceived ease of use and perceived usefulness have the strongest effects, accounting for 30.2% and 42.6% of the variation in digital payment adoption, respectively. Trust and consumers' innovativeness also contribute significantly, causing a 9% and 13.1% variation in digital payment adoption, respectively. However, perceived risk does not seem to have a statistically significant impact on the dependent variable, as the p-value is greater than 0.05 (0.983). Therefore, this indicates that these four predictor variables have a strong influence on customers' Tele birr adoption, while perceived risk does not make a statistically significant contribution in predicting the adoption of customers.

5.3 Recommendations

Considering the conclusions made on the all the study findings, contributing factors perceived ease of use, perceived usefulness, trust and consumers' innovativeness on customers adoptions of Tele birr digital payment the following recommendations are identified.

By focusing on these key areas of improvement, can further enhance customer adoption of Tele birr and drive increased usage of digital payment platforms among target audience.

- ✓ Prioritize ease of use: focus on making the Tele birr system even easier to use with user-friendly interfaces, implement a clean and intuitive design for easy navigation, efficient content management, that are accessible to a wide range of people and fast transaction speeds. Continuously gather feedback from users to refine the system based on their needs and Preferences.
- ✓ Expand service offerings: ensure compatibility with various devices and operating systems relatively other service providers who regularly use Tele birr to transact by offering alternative methods of payment and introduce new services and functionalities to cater to a wider range of user needs and further enhance the system's perceived usefulness.
- ✓ Highlight the time-saving features and convenience: emphasize how the system adds value to users' lives by streamlining their payment processes. More expected on awareness creation to include in public transportation, bus and train using Tele birr, also educate users on the benefits of digital payments.

- ✓ Streamline information management: optimize the platform for quick loading times and implement real-time transaction processing and confirmation as well as should keep regularly monitor and address any performance issues.
- ✓ Build and maintain trust: maintain precise transaction records and ensure that the system maintains high levels of security, privacy protection, and accuracy. Communicate transparently with users about the measures in place to safeguard their information, instilling confidence and trust in the platform. Develop a system that can detect losses, frauds and can also help improve the overall security of the digital wallet for instance implement robust security measures, such as encryption, two-factor authentication, and biometric verification.
- ✓ Capitalize on customers' innovativeness: regularly introduce new features, updates, and services to keep the platform fresh and engaging for users.
- ✓ Promote versatility: highlight the innovative aspects of Tele birr that set it apart from traditional payment methods. Demonstrating its value and the platform's capabilities also introduce features like QR code payments for added convenience.

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PART TWO: - questionnaires regarding factors influencing customer’s adoption of digital payment systems

The following set of questions relate to Factors Affecting Adoption of Digital Payment. Read and show to what extent you agree with them by marking (√) sign.

NB. 1-SD = Strongly Disagree 2-D = Disagree 3-N = Neutral 4-A = Agree 5- SA = Strongly Agree

1.	Perceived ease of use	SA	A	N	D	SD
1.1	Less effort is spent while using the digital payment system.					
1.2	Satisfied with the contents provided in the Telebirr digital payment system.					
1.3	User friendly designs are there in Telebirr digital payment system.					
1.4	I am satisfied with their information management system.					
1.5	Speed of Telebirr digital payment system is very fast in completing transactions.					
2.	Perceived usefulness	SA	A	N	D	SD
2.1	Telebirr digital payment is useful digital payment platform in your daily transactions.					
2.2	Telebirr digital payment simplifies your daily wallet transactions.					
2.3	Easy for me to complete a store or transport a currency value using Telebirr digital payment.					
2.4	Wide ranges of services are provided throughout Telebirr digital payment system.					
2.5	The service charge for using Telebirr digital payment is lower.					
2.6	Telebirr digital payment system minimizes					

the time I usually spent on payments.

3.	Perceived risk	SA	A	N	D	SD
3.1	Telebirr digital payment system can mitigate the risk of fraud.					
3.2	Telebirr digital payment system services perform well and process payment correctly.					
3.3	Value the awareness of potential spam issues, which helps in making informed decisions when considering Telebirr digital payment systems.					
3.4	I take into protected free of addressing concerns about its potential misuse of personal information while using Telebirr digital payment systems.					
4.	Trust	SA	A	N	D	SD
4.1	I am confidential in the security of using Telebirr digital payment system.					
4.2	I am familiar to use the system of Telebirr digital payment.					
4.3	Telebirr digital payment system is reliable in protecting my privacy.					
4.4	Telebirr digital payment system meets its promised time frame of response.					
4.5	Telebirr digital payment system keeps accurate transaction records.					
5.	Consumers innovativeness	SA	A	N	D	SD
5.1	I feel motivated to use Telebirr for various financial transactions.					
5.2	I find it easy to navigate and perform transactions using Telebirr.					

- 5.3 Sharing my positive experiences with Telebirr services to those around me.
- 5.4 Telebirr's features and benefits are motivating factors for me to continue using the service.
- 5.5 I actively search for and equipped with Telebirr digital payment updated and newest services.

6. A person intention to the adoption of Telebirr digital payment platform

Kindly rate the extent to which these statements align with your intention to utilize Telebirr digital platform payment in the near future.

6.	Adoption of Telebirr digital payment	SA	A	N	D	SD
6.1	I find Telebirr convenient to make digital payments.					
6.2	I adopt Telebirr digital payment methods because this service is widely accepted in my transaction circle.					
6.3	I believe Telebirr digital payment platform provides me with better transactions.					
6.4	I am satisfied with my experience of using Telebirr digital payment services.					
6.5	I frequently use Telebirr digital payment for my transactions.					
6.6	I would recommend Telebirr digital payment system to others.					

What suggestions you can give to the development of technology to the Ethiopian digital payment systems specifically Telebirr?

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THANK YOU!

Sources for designing this questionnaire

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