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FACTORS AFFECTING THE ADOPTION OF DIGITAL PAYMENTPLATFORM-THECASEOFTELEBIR

A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE MARKETING MANAGEMENT GRADUATE PROGRAM IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ART (MA) IN MARKETING MANAGEMENT

BY

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This is to certify that the thesis is prepared by Mehari Shiferaw, entitled; Factors Affecting The Adoption Of Digital Payment Platform-The Case Of Telebir: In partial fulfillment of the requirements for the award of the degree of Master of Arts in Marketing Management with the regulation of the university and the accepted standards with respect to originality.

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Declaration

I, Mehari Shiferaw, hereby declare that this research paper entitled "**Factors Affecting The Adoption Of Digital Payment Platform-The Case Of Telebir**" is my original work and has not been used by others for any other requirements in any other university and all sources of information in the study have been appropriately acknowledged

BY: Mehari Shiferaw

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Date _____

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“I express gratitude to Almighty God for His blessings throughout my life. I appreciate the guidance and support from my advisor, Dr. Tedros Mesfin, and other lecturers at Addis Ababa University’s College of Business and Economics. The engaging learning environment has inspired me, and I aspire to follow in their footsteps. I also thank Telebirr’s customers for participating in my research. This thesis aims to demonstrate successful marketing strategies for locally manufactured technological products, contributing to our country’s economic development.”

Thank you,

Mehari Shiferaw!

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Abbreviations

AEPS- Aadhar Enabled Payment System

ATM-Automatic Teller Machine

BM- Business models

CVV- Card Verification Value

CBE -Commercial bank of Ethiopia

EPS- Electronic payment system

GDP-Gross Domestic Product

IDT- Innovation Diffusion Theory

IMPS - Immediate Payment Service

IT-Information Technology

ISO/IEC-the International Organization for Standardization/the International Electrotechnical Commission

IFSC-Indian Financial System Code

IIN- Issuer identification number

MPIN- Mobile banking Personal Identification Number

NEFT- National Electronic Fund Transfer

NPCI- National Payments Corporation of India

NFC- Near Field Communications

PIN-Personal Identification Number

POS- Point of sale

POP- Point of purchase

RTGS- Real Time Gross Settlement

SMS-Short Message/Messaging Service

TAM-Technology acceptance model

UPI- Unified Payment Interface

USSD- Unstructured Supplementary Service Data

UTAUT- Unified Theory of Acceptance and Use of Technology

VDA- Value Delivery Architecture

VPA- Virtual Payment Address

WAP- Wireless Application Protocol

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Abstract

E-payment systems are gaining prominence as a convenient and efficient method of payment in today's business landscape. These systems, adopted by both developed and developing countries, aim to simplify and streamline transactions. Digital payment systems provide several benefits, including reducing cash-related hassles, lowering costs associated with physical distances, enhancing financial transparency, improving security by minimizing cash theft risks, and enabling more efficient record-keeping for businesses.

The primary focus of this research is to explore the factors influencing the adoption of the Telebir digital payment platform, which is an extension service provided by EthioTelecom. The study aims to understand the impact of variables such as perceived usefulness, perceived ease of use, perceived risk, attitude, and trust on the adoption of Telebir digital payment. In this study, an explanatory approach was employed to understand the factors influencing the adoption of Telebirr mobile wallet payment. The largest age group (58.1%) consisted of respondents aged 18 to 30 years. In terms of gender, 51.5% were male, and 48.5% were female. The findings highlight the importance of Attitude, Perceived Risk, and Conformance in shaping consumers' adoption intentions for the Telebir Digital Payment platform.

The finding of the study helps Ethio telecom to improve its mobile wallet service, identify what are the major factors hindering customers to adopt mobile wallet, and to formulate appropriate strategies in implementing this technology. It helps for customers to increase their knowledge about this new technology and to rely on it. The result of the study is believed to add knowledge to the existing literature and can also be used as a reference for researchers who need to research the topic in the future.

Key words: Telebir digital payment, TAM, UTAUT

Chapter One: Introduction

1.1 Background

E-payment systems are gaining prominence as a convenient and efficient method of payment in today's business landscape. These systems, adopted by both developed and developing countries, aim to simplify and streamline transactions. Electronic payment (E-payment) or Digital payment is a means of payment by digital modes. Both payer and payee use digital modes for sending and receiving money in digital payment. No hard cash (currency notes) is involved in the digital payments. All the transactions in digital payments are completed through online.Digital payment systems offer various advantages, including minimizing cash-related inconveniences (such as making change), reducing costs associated with physical distance (like depositing cash), enhancing financial transparency (by mitigating cash-related fraud), improving security (by lowering the risk of cash theft), and enabling better record-keeping for businesses (Townsend, 2010).

Currently available digital payment systems include Banking cards, Digital wallets, Unified Payment Interface (UPI), Unstructured Supplementary Service Data (USSD), Immediate Payment Service (IMPS), Real Time Gross Settlement (RTGS), National Electronic Fund Transfer (NEFT),Aadhar Enabled Payment System (AEPS) and Mobile banking.This paper deals with type of digital payment system called a Digital wallet. It is a way to carry cash in digital format. Credit card or debit card information should be linked to digital wallet application or money can be transferred in online to mobile wallet. A mobile wallet refers to the digital wallet system installed on a mobile handset (i.e., CBE birr,Telebir)(Franciska &Sahayaselvi, 2017)

Digital payment providers are redefining their business models to address the growth challenges of digital payment platforms. These models focus on three key aspects: rethinking retailer relationship management, creating complementary partnerships, and integrating front-end mobile technology(Jocevski*et al*., 2020).In so doing, platform envelopment strengthens firms' market position in their respective core markets(Kazan *et al*., 2016).Digital payment systems offer many benefits for small and medium enterprises (SMEs), including reducing costs, improving financial performance efficiency, enhancing customer satisfaction, and increasing global

accessibility. By eliminating the need for physical cash transactions, SMEs can improve efficiency and revenue (Gyamfi-Yeboah Kwabena*et al*., 2019A digital payment system can help mitigate inflation by reducing the large amount of physical currency in circulation.(Budiarti*et al*., 2021). As digital wallets (mobile payments) gain traction, it's fascinating to observe their positive impact on users and overall GDP development in countries worldwide (Raimee*et al*., 2021).

Mobile payment platforms typically evolve in stages to maximize adoption., recommend launching as a one-sided platform to attract users, then gradually expanding to a two-sided model by adding more constituencies. Success depends on leveraging reach (participants) and range (features) (Staykovaand Jan Damsgaard., 2016).Emerging countries like China and India are surpassing developed countries in the adoption of platform-based mobile payments (Kumar*et al*., 2021). Badal and co-authors find that low rates of adoption do not appear tobe the result of supply-side barriersto obtaining necessary infrastructure or meeting prerequisite requirements to adopt digital payments but due rather to demand-side factors such as a perceived lack of customers wantingto pay digitally, and concerns that records of mobile payments might increase tax liability(Ligon *et al*., 2019). Previous research on e-payment adoption in developing countries across Asia and Africa consistently identifies nine(9) key variables, namely: trust, usefulness, ease of use, security, convenience, cost, benefits, awareness, and attitude that influence the adoption of electronic payment systems (EPS) by individuals and organizations(Kabir*et al*., 2017).

1.2 Statement of problems

In countries like Ethiopia, where financial accessibility is limited, e-payment offers significant advantages. It allows financial institutions to be accessible regardless of time and location. The e-payment revolution in both urban and rural areas present a valuable opportunity for its growth

Previously, e-payment services are the exclusive right of financial institutions(i.e., banks, saving institutions, credit unions, insurance companies) but nowadays, with advancement of electronic payment systemand the rapid growth of mobile phone ownership; non-financial institutions also can offer e-payment services. But, non-financial institutions in order to compete effectively and

efficientlywith financial institutions in providing e-payment service they need to know customer needs, expectations; and so, satisfy customers by meeting their expectations.

Adoption mobile banking services in Ethiopia is very low in comparison to other African countries (i.e., Kenya, Nigeria). Due to the government of Ethiopia efforts in digital transformation of all of its E-Government services, and the adoption of digital payments toward a cashless economy resulted in the entry of several non-banking institutions offering payment services such as Ethiotelecom(telebir) and Safaricom(M-Pesa). These non-banking institutions have extended their businesses involvement by providing mobile banking technology to penetrateinto a potentially large market in a country and to reach more customers. Since these institutions have not experienced in financial innovation(M-banking/payment) and not knowing main factors that hinders consumers from adopting e-payment service cannot increase their customer base or revenue.

In the journey toward implementing a digital payment system, it's crucial to stay informed about customer opinions. Even successful companies can stumble when implementing customer-centric innovations (Joachim *et al*., 2018).

Many researches have been made identifying the factors affecting the adoption of mobile banking and resulted in different findings. For example, Chlan-son (2012)studies on factors that influence people's intention to adopt mobile banking resulted perceived financial cost and perceived credibility are two main factors influencing people's intention to adopt mobile banking. Hanudin*et al* (2013) studies on similar topic and found that the extent of security and privacy associated with the context of mobile bankingare influencethe intention to use mobile banking. Pushp P and colleagues studies the various drivers and inhibitors behind digital payment adoption and results of this literature analysis revealed performance expectancy/perceived usefulness, perceived ease of use and perceived risk, in descending order, are the main inhibitor to the adoption of mobile payments. Also, majority of studies employed TAM and its extension to understand consumer adoption to mobile payment followed by UTAUT (Patil *et al.*, 2017).

Teka and colleagues' studies factors affecting adoption of electronic banking in Ethiopia by applying both descriptive type research method (Teka*etal*., 2017) and explanatory research methodology(Teka et al., 2020)by integrating model from Technology Acceptance

Model (TAM) and Theory of Planned Behavior (TPB). In both of thus studies the sampling population are costumer of commercial bank (private and public). This research will be applying quantities research methods and based on costumers of ethio-telecom. Even though many studies were done on factors affecting the adoption of mobile banking in our countries, yet there is no any research found on M-wallet payment system based on non-banking institutions offering payment services.

Thus, this research paperinvestigates factors affecting the adoption of digital payment platformin the case of telebirr i.e., one of service extension of ethiotelecomand fill the knowledge gap by determine factorssuch as: attitude, perceived risk, conformance, perceived ease of use, perceived usefulness, and trust on its adoption of telebir digital payment.

1.3 Research questions

i. To what extent attitude influence telebir adoption?

ii. To what extent perceived ease of use influences the adoption of Telebir mobile wallet subscriber of the Application?

iii. To what extent perceived usefulness influence the adoption of Telebir mobile walletPayment?

iv. To what extent Perceived risk influence the adoption of Telebir mobile walletPayment?

v. To what extent Trust influence the adoption of Telebir mobile wallet Payment?

vi. To what extent Conformance influence the adoption of Telebir mobile wallet Payment?

1.4 Objectives of the Study

1.4.1 General Objective

To identify factors influencing the adoption of Telebir digital payment app

Specific objectives

The specific objectives are:

1. To know the effect of attitude on the adoption of Telebir digital payment app.

2. To know the effect perceived ease of use on the adoption Telebir digital payment app

3. To know effect of perceived usefulness on the adoption of Telebir digital payment app

4. To know effect of perceived risk/security on the adoption of Telebir digital payment app

5. To know effect of truston the adoption of Telebir digital payment app

6. To know effect of conformance/compatibilityon the adoption of Telebir digital payment app.

1.5 Significance of the Study

Nowadays, digital payment in urban areas such as in Addis Ababashow progresses, but still have low adoption in other towns and cities of the country. This research paper deals with factors affecting the adoption of Telebir digital payment app and determine the strength of correlation they have with this app. The main finding of this study useful for Ethio telecom in identify factors that inhibits costumers from adoptingtelebirr digital app and propose appropriate strategies to increase its costumer coverage throughout the country.The result of this research also helpful for costumers to know more about the app and rely on it. The finding of this research study will add value to existing literatures and can contribute as reference for those researcherswho are interest on the topic in the future.

Delimitations

This research study is limited to study of factors that influencing adoption of mobile digital payment specific to telebirr digital payment app and the study area is limited to within territory of Addis Ababa. The methodology used for the study is a quantitives research approach and relatively a large sample sizesaretaken, and analysed using correlation, regression statistics.

To be honest all of research studiesin spite of selecting appropriate methodology and sampling techniques have their own limitation. Some of the limitations specific to this research topics are:limited geographical coverage area of the study and sampling design used for study,which is non-probability convenience sampling resulted in sampling bias and difficult to generalize to other cities and towns of the country.The main reason why the researcher selects this sampling area and sampling technique are: lack of customers lists, to be economical efficient and effective.

Chapter two: Literatures review

2.1. Theoretical Framework

In networked economies, digital platforms serve as critical nodes within business networks, concentrating value by providing layered modular architectures for goods and services (Gawer and Cusumano, 2014; Schilling, 2000; Stabell and Fjeldstad, 1998; Staudenmayer *et al*., 2005; Yoo *et al*., 2010).In the competitive landscape of digital platforms, architectural configurations play a crucial role. These configurations aim to outperform rivals by structuring platforms into value creation and delivery architectures. These strategic dimensions are essential for understanding competition among mobile payment platforms. Whether integrated or integratable, these platforms have access to pre-existing value delivery architectures, facilitating value movement among stakeholders within the network (Kazan*et al*., 2018).

Value Creation Architectures: Integrative and Integratable Approaches

Integrative Approach: Mobile payment platforms which sub-scribes to an integrative approach, can exert control on their value creation architectures at the platform level to co-create value with an exclusive selection of private business partners and shield their services from unauthorized parties. These platforms enact closed loop systems to settle payment transactions within their own boundaries. Settling payment transactions among users within the same payment system is virtually free, instantaneous, and guaranteed. Conversely, sending payments beyond the closed loop system contributes to the cost structure in terms of fees, time, and risk. Integrative platforms tend to assimilate resources and arrange access points in ways that culminate in an inward-looking, vertically integrated, and closed-loop ecosystem (see Figure 1).

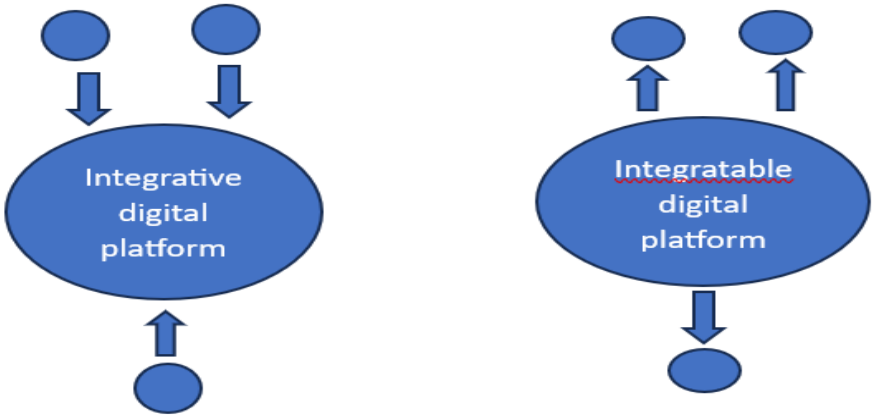


Figure 1: Integrative and Integratable value creation architecture(Kazan et al., 2018)

Integrative platforms maintain standalone mobile payment services to oversee derivatives built on their value creation architectures, ensuring a consistent user experience. Their independent value creation architecture enables agility in responding to dynamic market environments (Sambamurthy*et al.*, 2003). However, to ensure competitive sustainability, owners of integrative platforms must be sufficiently equipped and adapt to continuously nurture their internal developmental capabilities to remain an enticing option for business partners within such *private value networks*. Otherwise, integrative plat-forms may have to relinquish their tight control and embrace interfirm modularity to compensate for deficiencies in their value creation architectures. This in turn could dilute their integrative approach to value creation.

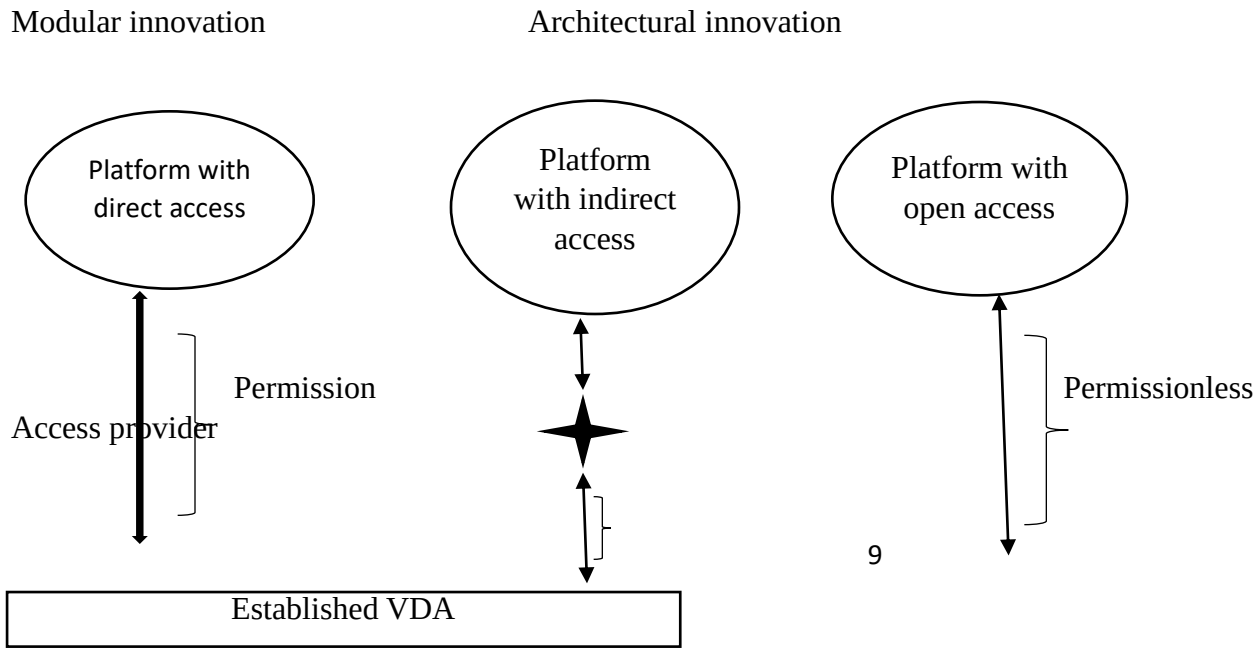
Integratable Approach: Platforms with integratable value creation architectures connect and mo-bilize stakeholders within business networks. The outcome is a mobile payment platform in which the responsibility of value creation and appropriation is distributed among stakeholders within the network (see Figure 1 again).

Platforms with integratable value creation architectures modularize and exploit interorganizational resources to co-create value within an orchestrated business network. We define the structure from platforms taking such a collaborative approach as a *federated value network(*Kazan et al., 2018*).*

Interorganizational platforms face challenges related to reduced control, higher transaction costs, business-IT misalignment, and stakeholder rivalry. When the costs of maintaining integratable platforms outweigh collaboration benefits, owners may opt for an integrative approach to enhance flexibility in responding to business opportunities

Value Delivery Architectures: Three Modes of Access

Direct Access: Mobile payment platforms with direct access to established value delivery architectures are often able to profit from these industry-specific resources (see Figure 2). Direct access to established value delivery architectures, which offer the greatest possible market reach within an economy, is tantamount to a valuable configuration of strategic linkages that cannot be emulated by competing platforms readily.



Permission

Figure 2: Direct, Indirect and Open Value Delivery Architecture(Kazan et al., 2018)

Nonetheless, direct access comes with the burden of costly maintenance (e.g., monthly fix and variable costs) as well as extensive coordination between platform and infrastructure owners. Moreover, such value delivery architectures, being critical national infrastructures, are heavily regulated. Direct access owners (e.g., banking institutions) are legally obliged to offer non-discriminatory indirect access to rival institutions. To address this limitation, integrative payment platforms with direct access often establish their own vertically-integrated, closed-loop mobile payment systems. These systems allow them to settle payment transactions within their own ecosystem. Transactions settled within integrative platforms suppress variable costs. Financial institutions with direct access but lacking integrative platform capabilities often collaborate with owners of interoperable mobile payment services. However, this arrangement requires costly direct access for each transaction to serve customers across different financial institutions, contributing to a variable cost structure(Kazan *et al*., 2018).

Indirect Access: Mobile payment platforms with indirect access to established value delivery architectures achieve competitiveness by cooperating with third parties (e.g., banking institutions) offering the best indirect access conditions (see Figure 2 again).

Indirect access challenges arise due to platform reliance on third parties and the ongoing transaction costs associated with using, modifying, and adjusting the value delivery architecture. Third parties can also impose constraints on mobile payment platforms when transactions require access to established payment infrastructures. To out-weigh these costs and ensure competitiveness, integratable mobile payment platforms with indirect access forged strategic linkages with select third parties in the business network that has the furthest market reach and can guarantee real-time processing of payments. Alternatively, integrative platforms with indirect access harness their internal capabilities to create a complementary closed loop system that emulates direct access attributes (i.e., instant and

guaranteed payments). This way, platforms with indirect access can circumvent the restrictions of slow value delivery architectures when sending payments across financial institutions(Kazan *et al*., 2018).

Open Access: Mobile payment platforms with open access achieve competitiveness by leverag-ing novel value delivery architectures. Open access endeavors to emulate direct access rights (i.e., unobstructed payment without intermediaries) in a cost-effective fashion (see Figure 2). Nevertheless, new value delivery architectures do not have the same market reach as that of established ones nor have they been comprehensively tested(Kazan *et al*., 2018).

TYPES OF DIGITAL PAYMENTS

Payment Cards

The most common types of payment cards are credit cards and debit cards. Payment cards are usually embossed plastic cards, 85.60 × 53.98 mm in size, which comply with the ISO/IEC 7810 ID-1 standard. They usually also have an embossed card number conforming with the ISO/IEC 7812 numbering standard.Mostcommonly, a payment card is electronically linked to an account or accounts belonging to the cardholder. These accounts may be deposit accounts or loan or credit accounts, and the card is a means of authenticating the cardholder.The information required for using payment cards are Card Verification Value (CVV Number) and Expiry date of the payment card. CVV number is a combination of features used in credit and debit cards for the purpose of establishing owner's identity and minimizing the risk of fraud. Payment cards require 2 factor authentications. Authentication is a process in which credentials provided are compared to those on file in a data base of authorized users' information on a local operating system. Factors of authentication includes Knowledge factor (PIN), Possession factor (ID card, Smart phone) and Inherence factor (Fingerprint, face or voice).Generally, the Payment cards can be distinguished on the basis of its features(Franciska and Sahayaselvi, 2017). They are:

- **Credit card:** The first universal credit card, which could be used at a variety of establishments, was introduced by the Diners' Club, Inc., in 1950. Another major card of this type, known as a travel and entertainment card, was established

by the American Express Company in 1958.Central Bank of India was the first public bank to introduce Credit card. The issuer of a credit card creates a line of credit (usually called a credit limit) for the cardholder on which the cardholder can borrow. The cardholder can choose either to repay the full outstanding balance by the payment due date or to repay a smaller amount, not less than the "minimum amount", by that date.

- **Debit card**: Debit card was introduced by Citi Bank.With a debit card, when a cardholder makes a purchase, funds are withdrawn directly from the cardholder's bank account.
- **Smartcard**:Banks are adding chips to their current magnetic stripe cards to enhance security and offer new service, called Smart Cards. Smart Cards allow thousands of times of information storable on magnetic stripe cards. In addition, these cards are highly secure, more reliable and perform multiple functions. They hold a large amount of personal information, from medical and health history to personal banking and personal preferences.
- **Charge card**:With charge cards, the cardholder is required to pay the full balance shown on the statement, which is usually issued monthly, by the payment due date. It is a form of short-term loan to cover the cardholder's purchases.
- **Fleet card**: A fleet card is used as a payment card, most commonly for gasoline, diesel and other fuels at gas stations.
- **Gift card**: A gift card also known as gift voucher or gift token is a prepaid stored-value money card usually issued by a retailer or bank to be used as an alternative to cash for purchases within a particular store or related businesses.
- **Store card:** It is a credit card that is given out by a store and that can be used to buy goods at that store.

Unstructured Supplementary Service Data (USSD)

USSD is sometimes referred to as "Quick Codes" or "Feature codes", is a protocol used by GSM cellular telephones to communicate with the service provider's computers. A typical USSD message starts with an asterisk (*) followed by digits that comprise commands or data. Groups of digits may be separated by additional asterisks. The message is terminated with a number sign (#).The innovative payment service *99# works on Unstructured Supplementary Service Data (USSD)

channel.This service allows mobile banking transactions using basic feature mobile phone, there is no need to have mobile internet data facility for using USSD based mobile banking. USSD is generally associated with real-time or instant messaging services.USSD is sometimes used in conjunction with SMS. The user sends a request to the network via USSD, and the network replies with an acknowledgement of receipt:"Thank you, your message is being processed. A message will be sent to your phone." The Information required for USSD transaction is MPIN/ IFSC/Aadhar number/Account number. Mobile Banking Personal Identification Number (MPIN) works as a password when we perform any transaction using Mobile(Franciska and Sahayaselvi, 2017).

Aadhaar Enabled Payment Service (AEPS)

The Aadhaar Enabled Payment System (AEPS) utilizes Aadhaar online authentication to enable Aadhaar Enabled Bank Accounts (AEBA) for anytime-anywhere banking through Micro ATMs(Franciska and Sahayaselvi, 2017). Controlled by the National Payments Corporation of India (NPCI), AEPS allows users to withdraw money from their bank accounts without requiring a signature or debit card. It eliminates the need to visit a bank branch, and for AEPS transactions, you'll need your Aadhaar number, bank issuer identification number (IIN) or name, and fingerprint

Unified Payments Interface (UPI)

Unified Payments Interface (UPI) is a real-time payment system developed by the National Payments Corporation of India (NPCI). It allows users to transfer money between bank accounts using a single mobile application. With UPI, you can send and receive money seamlessly by sharing a Virtual Payment Address (VPA) and using your Mobile banking Personal Identification Number (MPIN)(Franciska and Sahayaselvi, 2017)

Digital Wallets

A Digital wallet is a way to carry cash in digital format. Credit card or debit card information should be linked to digital wallet application or moneycan be transferred in online to mobile wallet. Instead of using physical plastic card to make purchases, it can be paid through smartphone, tablet, or smart watch(Franciska and Sahayaselvi, 2017).The Services offered by Digital Wallets are Balance Enquiry, Passbook/ Transaction history, Add money, Accept Money, Pay money etc.Digital wallets are composed of both digital wallet devices and digital wallet systems.A mobile wallet is simply the digital wallet on the mobile handset. Presently there are further explorations for smart phones with digital wallet capabilities, such as the Samsung Galaxy series and the Google Nexussmart phones utilizing Google's Android operating system and the Apple Inc.iPhone 6 and iPhone 6 Plus. Most banks have their e-wallets and some private companies. e.g. Paytm, Freecharge, Mobikwik, Oxigen, mRuppee, Airtel Money, Jio Money, SBI Buddy, itz Cash, Citrus Pay, Vodafone M-Pesa, Axis Bank Lime, ICICI Pockets, SpeedPay etc.

Point of Sale machines

Point of Sale Machine made it faster and easier for cashiers to ring up sales and keep tabs on transactions. In the 1970s, innovation helped traditional cash registers evolve into computerized point of sale systems. It was also during these years that devices such as credit card terminals and touch screen displays were introduced.

The point of sale or point of purchase is the point at which a customer makes a payment to the merchant in exchange for goods or after provision of a service. After receiving payment, the merchant may issue a receipt for the transaction, which is usually printed but is increasingly being dispensed with or sent electronically.A retail point of sale system typically includes a cash register (which in recent times comprises a computer, monitor, cash drawer, receipt printer, customer display and a barcode scanner) and the majority of retail POS systems also include a debit/credit card reader(Franciska and Sahayaselvi, 2017).

Mobile Banking

Mobile banking is by using a mobile device i.e., mobile phone or tablet,customers to conduct financial transactions. It uses software, usually called an app, provided by the banks or financial institution for the purpose. Each Bank provides its own mobile banking App for Android, Windows and iOS mobile platform(s)(Franciska and Sahayaselvi, 2017).SMS bankingthe oldest mobile banking services.Later with the evolution of smart phones with wireless application protocol support in 1999, enable the use of the mobile web. In the world the firstto offer mobile banking on this platform to their customers are European banks. The European company called PayBox supported financially by Deutsche Bank, in 1999 started mobile banking. The cost of mobile devices has been reduced drastically and is still being reduced. Network speed is much better than before and data plans are not as costly. All of these changes have provided necessary raw materials for the growth of mobile banking and the numbers of people using mobile banking is increasing day by day. Users, who were using computers/laptops for online banking, are moving towards mobile banking because of ease of use and fast access.

The main mobile banking services are: obtaining account balances, lists of latest transactions, electronic bill payments, etc. e.g. –iMobile for ICICI bank, Kotak Bank App for Kotak Mahindra bank, SBI freedom app for State bank of India

Internet Banking

Internet bankingis an electronic payment system that enables customers of a bankto conduct a financial transaction through the financial institution's website(Franciska and Sahayaselvi, 2017). Online banking was first introduced in the early 1980s in New York, United States. Four major banks — Citibank, Chase Bank, Chemical Bank and Manufacturers Hanover — offered home banking services. Chemical introduced its Pronto services for individuals and small businesses in 1983, which enabled individual and small-business clients to maintain electronic checkbook registers, see account balances, and transfer funds between checking and savings accounts.

Importance of Digital payment system with time

As the ramification of revolution in IT in the current scenario every class of society becoming more familiar with use of mobile banking, plastic money and the new era of digital payments.In the growing era of the digitization of the technology much of the people have using the plastic money in the form of Debit Card, Credit Card and other cards provided by the numerous respective commercial banks. The banking industry had an array of payment products – Core banking Services, immediate payment service, net banking and mobile banking; but it is found that people needed an easier, simpler way to make payments. so, this gap was filled by the digital wallets or e-wallets. The very first patent of the mobile e wallet was registered in the year of 2000, this was the starting of a revolution in the field of digital payments.Gagandeep studied to find out the adoption behavior and change in the daily payment or transactions; and forty-five studies were taken for the evaluation and the time phrase is divided into four phases i.e. From 2002-2004, 2005-2009, 2010-2015 and 2016-2019 or present(Gagandeep, 2020).

- **Phase I (2002-2004)**

In the year of 2000 there was the first patent of mobile e-walletregistered. After this regime the face of online and e-bankingwere being changed. Internet forces square measure poignantthe banking sector transition quite the other monetary suppliercluster. E-Bank solution should deliver three key requirements:High Availability, Scalability and Security, Network security, dataintegrity and privacy (Antovski and Gusev, 2014). Mobile Ecommerce addresses electroniccommerce via mobile devices, where the buyer isn't in physical oreye contact with the products that square measure being purchased.On the contrary in M-Trade the buyer has eye contact with offeredmerchandise and services. In each cases the payment procedureis dead via the mobile network. No successful mobile paymentsystem has yet lived up the different requirements from the marketand thereby not been a success (Antovski and Gusev, 2014).There are different criticalsuccess factors and requirements considering the involvement ofdifferent factors such as Ease of use, Security, Comprehensiveness,Expenses, Technical Acceptability(Antovski and Gusev, 2014). However, no standardised,broadly adopted mobile payment method has yet emerged, and thisis supposed to be one of the factors that inhibits rife use of mobilecommerce. At the start of 2003, there were more than 1 billion of them inuse. As the prevalence of mobile devices has grown, consumershave shown a growing eagerness to find new and useful waysto apply mobile technologies. Consumers, mobile carriers

andmerchants have been exploring the feasibility of using mobiledevices to initiate and complete payment transactions. The useof mobile devices for initiating and completing payments willcontinue to increase, but the factors affecting adoption will slowgrowth. Mobile operators, merchants and application vendorsmust offer mobile payment systems that focus on very specificconsumer needs, culture and locale. Solutions that attempt to reachtoo far will fail (Bradford, 2003).

- **Phase II (2005-2009)**

This phenomenon has happened in ecommerce, when Internetuse was increasing worldwide. Forrester Research predicts thatthe total revenue from European Online Retail will quadrupleto €167 billion between 2004 and 2009. New wireless andmobile technologies supply varied mobile applications. Mobilepayment is one in all the quickest growing services. The businessapplications of mobile payment embrace parking tickets, vendingmachines, points of- sales, and digital content. Plenty of differentindustry sectors have become interested in mobile payments.These solutions claim to offer easier, faster and more securemethods than do competingsolutions(Chen and Adams, 2005). The payment businessis hoping that m-Payment can deliver the convenience, dealingspeed, and flexibility needed in today's advanced marketplace. Thedevice allows consumers to decide which payment mechanismthey prefer (debit, credit, pre-paid, etc.) and receive one usagestatement at the end of each billing period.The factors pushingto adopt m-payment such as Perceived Transaction Convenience,Perceived Transaction Speed, Security Concerns, Perceived Easeof Use and Privacy Concerns personal digital assistants, andother radio frequency and near field communication-based devices(Da Chen, 2006).

- **Phase III (2010-2015)**

As per the research conducted it was found that respondents usethe Internet because it is informative, believable and helpful as abuying guide. Respondents avoid the internet because it may because of wrong decision. Besides all these things, respondentsspent most of their time on Internet by both types of consumersi.e., rural and urban consumers. One issue is however positive thatmedia has a dramatic impact on the consumption patterns of thecustomers, irrespective of their affiliation to certain geographicallocations – rural

or urban & their gender. Even during this newbusiness setting wherever electronic transactions have becomethe norm, the use of other media options to document businesstransactions is equally important, specifically for the ruralcustomers (Makkar, 2010).Reason of Payment system constant evolution is innovation andadaption of emerging technologies that provide convenience,efficiency and greater value. Human spirit of innovation batterypoweredthe expansion of world electronic payments.

Today,we've several international electronic payment systems thatoffer the secure, sound, economic transparency and consumerempowerment. People around the world accrues the benefits of thispayment network.The users are able to instantaneously transfer money from userto another using a secured and fast application of e-wallet. Atprototype stages this application will run on client-server basisfrom computers and once implemented on a large scale, will makeuse of smartphones through Near Field Communications (NFC).The main characteristics of e-wallets and NFC highlighted asSecurity, availability, integration and scalability, cost efficiencyand easy to use (Ambarish Salodkar, 2015).

- **Phase IV (2016-2019) or present**

Almost 94% of respondents is using mobile phones for theirprofessional and personal works. Most ofyouths (age 18-30years), 81% are more tech-savvy, and use internet for their billsand other online services as compared to other cities. The surveyeven showed that women are more active in using wallets, plasticmoney (74%), and other online transactions (56%) than men.Consumers' demand has increased with technology advancements.Consumers' intention to use the mode of e-currency in terms ofon-line dealing through web site or mobile devices is basically relyupon the services obtainable to the purchasers by banks and mobileservice suppliers their own apps or web through the smartphones.If all the conditions square measure full filed, then the client isextremely ease to shop for or sell something with one "click" or"touch". there's a shift within the technology and therefore thegetting behavior of the individuals earlier the net market wasrestricted to those that have web access and should have conditionof getting pc with electronic equipment solely then they'll accessthe web and do getting. Nowadays, these necessities squaremeasure full stuffed by the one smartphone it's all, and on-linecorporations square measure forcing individuals to choose mobilepurchase rather than web site purchase(Gagandeep, 2020).

Theories on Adoption of digital payment system

The global spread and use of the internet and mobile phones has contributed to the development of digital payments. Despite its growth potential, until now there is a lack of research providing a comprehensive synthesis and analysis of factors affecting the use, adoption, and acceptance of digital payment methods. With regards to this there are many theories developed, but the most commonly used are (Sahi *et al*., 2021):

a. The technology acceptance model (TAM)

TAMexplains acceptance of information systems by individuals. TAM postulates that the acceptance of technology is predicted by the users' behavioral intention, which is, in turn, determined by the perception of technology usefulness in performing the task and perceived ease of its use (Marikyan and Papagiannidis, 2022). TAM also explains the interrelationship between the simplicity of use, perceived usefulness, attitude, and adoption intention of individuals. Meanwhile, the TAM model was been tested in a different setting to forecast the adoption of information technology-enabled innovations, and the model's results have been proven to be genuinely accurate in terms of human attitudes. However, it has been widely confirmed that TAM alone does not explain the complex nature of customer intention. As a consequence, many researchers have mainly focused on the TAM with more constructs adapted from mobile payment studies, such as pricing, reliability, mobility, expressiveness, suitability, transaction speed, usage situation, social reference groups, enabling conditions, appealing Ness, and technological anxiety.

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

UTAUT postulates four key elements as determinants of use willingness with technology adoption (IS/IT): Expected performance, facilitating conditions,effort and social influence(Venkatesh *et al*., 2003). Later reframed that attitude partially mediates the effects of expectedperformance, expected effort, social influence and facilitating conditionson behavioral intention, and also has a direct effect on usage behavior **(**Dwivedi *et al*., 2019**).**

c. Innovation Diffusion Theory (IDT)

Innovation diffusion theory claims that novel characteristics such as conformity, complexity, observability, trialability, and other associated benefits have effects on the adoption rate of new technology (Rogers, 1995**).**

d. **Technology Organization Environment framework (TOE)**

TOE is defined as the entire process of innovation – stretching from the development of innovations by engineers and entrepreneurs to the adoption and implementation of those innovations by users within the context of a firm(Tornatzky and Fleischer's, 1990). The TOE framework represents one segment of this process – how the firm context influences the adoption and implementation of innovations. According to TOE organization-level theory: technological context, organizational context, environmental contextinfluence adoption decisions and technological innovation (Baker, 2012).

Empirical Literature review

Liu and colleagues studied the Use of the PX Pay mobile payment app for PX Mart, the most popular supermarket in Taiwan, using UTAUT to evaluate impacts of a mobile payment app on the shopping intention and usage behavior of middle-aged costumers, and examined the degree of involvement as moderator. This study resulted performance expectations, ease-of-use expectations, social impact,and the degree of involvement significantly influence usage behavior whereas gender has no significant moderating effect (Liu*et al.*, 2022).In otherstudies, done in Pakistan using technology acceptance model andtheory of reasoned action found that personal awareness of security,perceived usefulness, personal innovativeness, and perceived ease of use—are positivelyand significantly related to online purchasing intention with direct and indirect effects, usingattitude as a mediator (Saleem*et al.*,2022).

Chandra and Kumar on "Exploring Factors Influencing Organizational Adoption of Augmented Reality in E-Commerce Using Technology-Organization Environment Model" highlight the significant roles of technology competence, relative advantage, top management support, and consumer readiness in influencing an organization's adoption intention of Augmented reality for e-

commerce (Chandra et al., 2018). This finding was similar to the study conducted in Ghana on small and medium sized enterprises (SMEs) (KWABENA, *et al*., 2021). Najib and co-authors investigating the Adoption of Digital Payment System through an Extended Technology Acceptance Model in small and medium-sized restaurants in developing countries like Indonesia and resulted:attitude, perceived usefulness, perceived ease of usage, trust affectintention to use digital payment (Najib and Fahma, 2020). In otherstudies, done in Tanzania: - ease of use, and services quality were positively rated factors whereas information quality and perceived usefulness had lesser influence to accepting mobile phone payment systems. Several other factors behind acceptance were also identified in the interview, including premium pricing, level of understanding, and perceived risks (Wilsonand Mbamba, 2017).

Shahid exploring the determinants of adoption of Unified Payment Interface (UPI) in India based on diffusion of innovation theory confirming that relative advantages, complexity, and observability have a significant positive association with adoption and intention to use UPI, while Compatibility and trialability have no significant association with intention to use UPI (Shahid, 2022), but contrary to this finding was found in study done in Canada, Germany and the United States with new model i.e., complexity is dropped and compatible advantage replaces relative advantage and compatibility with context-relevant extensions of security, privacy and ubiquity (Shaw*et al*., 2022).

Yemisrach studied on customers' e-banking adoption in Ethiopia usingUTAUT revealed that expected performance, facilitating conditions, habit, hedonic motivation,and price valueare factors that influence customers' intention to adopt E-banking technologies in Ethiopia(Desta, 2018). Bultum (2014) also studied on the same topic but usingtechnology-organization environment model (TOE) and resulted:security, trust, legal and regulatory formwork, ICT infrastructure, affects adoption of E-banking in Ethiopia (Bultum, 2014). Similarly,Mulualem(2015) studied on this topic specific to CBE using TAM model and found that perceive risk, perceived usefulness, perceive ease of use affect the adoption of CBE mobile banking.

2.2. Research Hypotheses

Attitudes

Attitude represents the overall evaluation (positive and negative feelings) or emotional response that an individual has toward a particular technology (Schierzs' et al., 2010). Based on the theory of TRA better purpose to adopt a specific performance is acquired when an individual obtain more positive attitude towards behaviour, TRA theory also suggest that an individual behaviour is most of the time motivated by attitude. In previous research, a strong link has been found between an individual's beliefs about a specific technology and their intention to use that technology. Essentially, the more positively someone perceives a technology, the more likely they are to adopt and use it (Yank&Yoo, 2004; Schierzs' et al., 2010). In their research on the attitudes and behaviors of Egyptians toward e-payment services, Chen and colleagues highlighted the significance of social influences. These influences can come from various sources, including family, friends, peers, supervisors, experts, government, news media, or social media. These external factors play a crucial role in shaping e-payment adoption among Egyptians (Chen etal.,2021)

H1:Attitude has a positive effect on consumers' adoption of telebirr digital payment app.

Perceived ease of use

Perceived Ease of Use is defined as the degree to which the user finds that a certain system is effortless and user friendly. According to (Venkatesh, 2000) in the direction of acceptance of mobile payment applications perceived ease of use plays a important role. According to Pagane and Schipani (2004), for technology adoption, mobile payment applications should offer straightforward and user-friendly processes, along with clear representations and performance indicators. These factors contribute to customers perceiving the system as user-friendly.

H2:Perceived ease of usage has a positive effect on consumers' adoption of telebirr digital payment app.

Perceived usefulness

According to Davis ,1989 the perceived usefulness is the degree in which an individual trust that adopting a certain system will improve their work performance.Perceived usefulness is unique and fundamental factors for analysing the usage of technology and

adoption of technology (negahban&chung, 2014). In their research, Lee and Kim (2009) found that perceived usefulness has a substantial influence on the actual adoption and usage of intranet technology. Essentially, when individuals perceive a technology as useful, they are more likely to use it effectively. According to Panhwer and colleagues, the primary reasons for the slow adoption of E-Payment systems include perceived ease of use, perceived usefulness, system credibility, and facilitating conditions (Panhwer*et al*., 2020)

H3: Perceived usefulness has a positive effect on consumers' adoption of telebirr digital payment app.

Perceived risk/Security

Perceived security is defined as the amount of trust and confidence when a web channel, technology transforming sensitive information, transaction process (Salisbury et al; 2001). In marketing research, the increasing innovation within mobile payment applications has become crucial. However, this innovation can potentially create perceived risk for consumers when they use these applications (Lim, 2003, Mitchell,1999). When making the transaction through mobile payment applications the consumers have much concerns about data privacy, individual loss of data, and also about the process of transcation according to (Bauer, Reinhardt and Schule;2005). In a study by Nguyen and colleagues, they investigated the impact of perceived risk and trust on E-Payment adoption. Using structural equation modeling, they established relationships among several dimensions, including perceived risk, trust, perceived usefulness, ease of use, and E-Payment adoption. Their research contributes to the theoretical understanding of perceived risk, trust, and IT adoption in the context of E-Payment systems (Nguyen and Huynh., 2018).

H4:Security has a positiveeffect on consumers' adoption of telebirr digital payment app

Trust

Trust has been the focus of many studies over the past decades. Various academics have been studying the effects of trust on mobile payment systems (MPS) acceptance. According to research by Duane, O'Reilly, and Andreev (2014), trust plays a significant role in

shaping consumers' willingness to use smartphones for making mobile payments. In other words, trust is a crucial factor influencing the adoption of mobile payment services. Dastan (2016) emphasized that perceived trust plays a crucial role in driving the adoption of mobile payment services (MPS). This finding aligns with the endorsement by Mahad, Mohtar, and Othman (2015, p.6), who observed that perceived trust significantly influences users' intention to use mobile banking. In essence, trust is a powerful factor shaping consumers' willingness to embrace mobile payment solutions. Oskar Szumski's research highlights that technological trust significantly influences individuals' decisions regarding the use of various payment methods or payment service providers. In other words, trust in technology plays a crucial role in shaping payment behavior and preferences (Szumski, 2020).

H5:Trust has a positive effect on consumers' adoption of telebirr digital payment app

Conformance

Al-Jabri and Sohail studied mobile banking adoption applying diffusion of innovation theory and found that relative advantage, compatibility/Conformance, and observability have positive impact on adoption. Contrary to the findings in extant literature, trialability and complexity have no significant effect on adoption (Al-Jabri and Sohail, 2012). Similarly, Sujatha and Sekkizhar studied determinants of M-Commerce adoption in India using technology acceptance model infused with innovation diffusion theory which includes variables like perceived risk, cost involved, compatibility of using m-commerce, perceived ease of usage, perceived usefulness, attitude, and the actual usage and finding indicated that all variables except cost have positiveseffects on M-Commerce adoption (Sujatha and Sekkizhar, 2019).

H6: Conformance/Compatibility has positive effect on consumers' adoption of telebirr digital payment app

Conceptual Framework

There are many theories and models employed over the years in understanding and studying users' technology adoption behaviors. These theories and models focus on people's intention to engage in a certain behavior such as the adoption and use of new

technologies. Yet, no single theory explains exhaustively users' technology adoption behaviors. The Theory of Reasoned Action have been widely used in technology adoption and most of the Information Systems scholars, who have used this theory, have only been used to an extent where they set up the stage for other theories such as TAM, Extended TAM, and UTAUT (Otieno et al., 2016). Innovation Diffusion of Theory is vital for organization implementation success i.e., improved efficiency, effectiveness, and/or higher quality because it is market focus. This model is suitable for investigating the actual usage of the technology or task-technology fit especially testing of new technology to get feedback (Lai, 2017).

For this study a hypothethical conceptual framework is developed by combining selected elements of models TAM, TRA and UTAUT.Figure 3 shows relationship between dependent variable (telebirr digital payment app) and independent variable(attitude, perceive ease of usage, perceive usefulness, perceive risk or security, trust, conformance).

Factors that affect adoption of telebir digital payment app

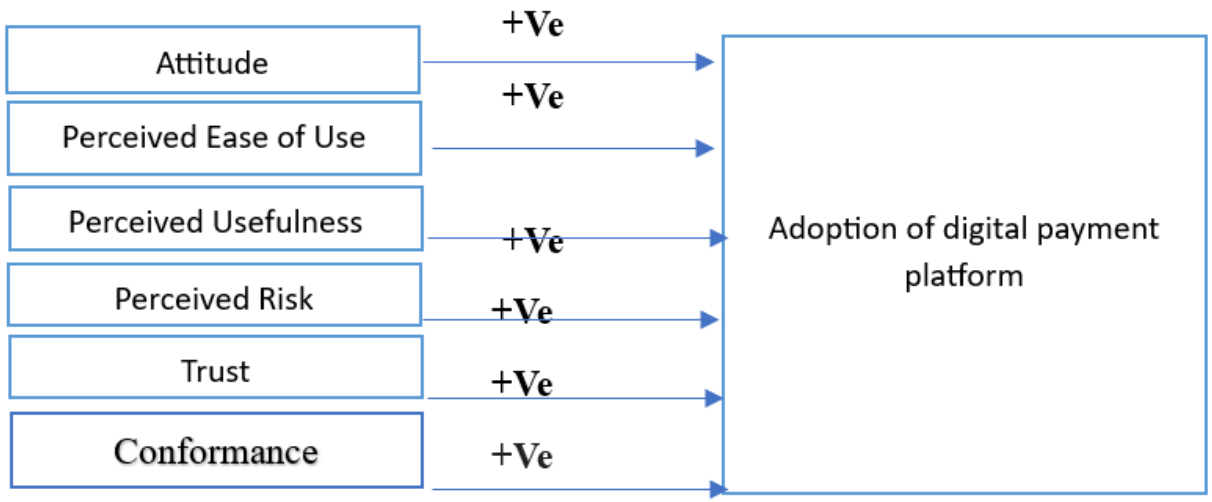


Figure 3: Proposed conceptual frame model for the study. Source: Carr (1999), with modification based on reviewed literature

The figure above is studying the relationship between dependent and independent variables forthe conceptual framework. The figure shows the conceptual framework is the essential basisof this research project. TRA, DIT, TAM and UTAUT models are implemented in this research to form the research framework.

Operational Definitions

- Perceived usefulness (PU)is a belief of a specific systemwill boost our performance (Davis, 1989). Perceived ease of use refers to free of effort in making online transactions through digital mobile payment app(Davis *et al*, 1989).
- Perceive Risk or Security refers to safe and secure means of making transaction (Ali and Hayat, 2014)
- Trust is technical functioning i.e., availability and properly functioning of digital mobile payment app(Sathye,1999; Polatoglu and Ekin,2001). Attitude refers to a positive or negative evaluation of the behavior toward digital mobile paymentapp (Davis *et al*., 1989)
- Conformance-Cognitive engineering researchers have long studied the complexity and reliability of human–automation interaction. Historically, though, the area of human–automation decision making compatibility has received less attention. Paradoxically, this could in the future become one of the most critical issues of all, as mismatches between human and automation problem-solving styles could threaten the adoption of automation. Here, strategic conformance represents the match in problem-solving style between decision aiding automation and the individual operator and concludes with a critical discussion on the limitations and drawbacks of strategic conformance (Westin*et al*., 2015)

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

In this chapter we discussed methodology used for the study such as: population of the study, sample size, research design, sampling techniques, data collection,description reliability of instruments, data collection procedures, and data analysis techniques.in details.

3.2. Description of the Study Area

The Study was conducted at the threeEthio telecom shop (mesalemiya shop, sebategna shop andAwutobis tera)locatedinAddisketemasub city. the branches were strategically chosen to optimize both time and cost, ensuring practicality and feasibility for the research study.

Research Approach

Creswell (2003) divided scientific research approaches are into three: quantitative,qualitative, and mixed research. Quantitative research is used for testing objectiveby seeing the relationship among variables, and is usually associated with collecting and converting data into numerical form as a result of which statistical calculation can be made and conclusions will be drawn. Quantitative research isused to evaluate the problem by way of creating numerical data or data that can bechanged into usable statistics. Quantitative research used to measure attitudes, opinions, behaviors, and generalize the results to larger sample population (Susan, 2011).

Therefore, in this study we usedquantitative research to determinefactors affecting adoption of telebirr digital payment and test the hypothesisusing questionnaires

Research Design

Explanatory approach is used for cause-effect studies and generallymeasures the level of impact of the independent variables on the dependent variable (CarlMcDaniel, 2010). This research used an explanatory approach due to it tried to identify factors affecting the adoption of telebirr digital payment app.

3.3. **Population of the Study**

Population/ study population' is defined the aggregation of elements or cases from which a sample is actually selected (Churchill, 2001).The study wasimplemented to determine factors affecting the adoption of telebirr digital payment app among customers of ethiotelecom.Nowadays, twotelecom companiesi.e., ethiotelecom and Safaricom are giving service in Ethiopia. This research is dealing with ethiotelecom due it has many costumers(above 70 milliom) and launched a new mobile digital payment app which is telebirr. Hence, those who are users of telebirrdigital payment app were thepopulation of the study.

3.4. **Sampling Size**

Many methods are for calculating sample size. Some of thes with their appropriate usage are: a census forsmall populations, simulating sample size of comparable research, using public tables for defined sample size,and calculating the sample size using formulas(Kothari,2004). In this study due the population is greater than 100,000(about 70 million) at the confidence level of 95%taking 384 sample size is appropriate.

By using Kothari formula sample size for this study is calculated as follows:

$n = z.^2\ p.q/\ e^2$; Where: -Population is infinite;e =0 .05 ;z = 1.96 ; p =0 .5 and q =1-0.5

$n = (1.96)^2.\ (0.5).(1-0.5) \div (0.05)^2 = 0.9604 \div 0.0025$

$= 384$

3.5. Sampling Technique

Sampling technique is atool usedto collecting data from a larger population. This study utilizedconvenience non-probability as sampling techniques due to trouble to identify a whole population, time outline figures and insufficient assets This technique, to draw a sample from the targeted population, was chosen because of the expected large number of sample unit, time and cost constraint.

3.6. Data Collection Methods

Both primary and secondary source is used

3.6.1. Primary Data Collection

Refers to the collecting of specific information either to prove or disprove certain facts. In datacollection, the researcher must understandwhat they want to get and howthey willattain it (Kombo and Tromp, 2006). Primary data was collected using questionnaires developed based on six specific objective dimension affecting adoption of telebirr digital payment app.The response to the questionnaire was scale of five rating scaleswhere: Strongly Agree =5; Agree= 4; Neutral =3, Disagree= 2; andStrongly Disagree =1.

Secondary Data Collection Method

Relevant published books and articles,previous researches, Journals, Scientific Articles, Addis Ababa university repository website, Google scholar were source of secondary data used for this research. It is useful to save time and minimize costs of researcher (Mark Saunder, philiplewis, Adrian Thornhill,2009, p. 272)

Data analysis

Collected data through a questionnaire was analysed by IBM SPSS 29 software. Descriptive analysis(demographic factors such as gender, age, education, occupation), Correlation analysis(measuring association with independent variable and between dependent and independent variable) and regression, multiple regressionwas discussed in detail to determine factors affecting adoption of telebirr digital payment platform app.

Reliability

Hair *et al*. (2010) define reliability as the uniformity of multiple measurements of variables. Internal consistency is a typical method of measuring reliability, in which the scale is used to assess the correlation between variables. The Cronbach's alpha(α) was used in this study, which is a typical tool for estimating the instrument's internal consistency. For an exploratory or pilot study, it is suggested that reliability should be equal to or above 0.60 (Straub *et al*., 2004).

To assess the consistency of measurement, researchers often use Cronbach's coefficient Alpha (α), a statistic developed by Lee Cronbach in 1951. This measure evaluates internal consistency, particularly when employing Likert scales. If α exceeds 0.7, it indicates high reliability, while values below 0.3 suggest low reliability. The pilot survey involved distributing 41 questionnaires, with 32 completed and returned to ensure reliable responses.

The overall reliability was determined, yielding a Cronbach's alpha (α) of 0.734—above the acceptable threshold of 0.7. Consequently, we can sayinstruments employed for this research are reliable and suitable for measuring the study variables.

Table 2: Reliability test results of variables

Measurement	Number of Items	Cronbach's α
Attitude	4	0.761
Perceived ease of use	5	0.715
perceived usefulness	4	0.702
Perceived risk	6	0.74
Trust	4	0.777
Conformance	6	0.805
Telebirr	4	0.751
Reliability of all items	33	0.734

3.6.2. **Validity**

Validity, is defined to what extent a test accurately measures what is intended to measure(Field, 2005). In other words, it assesses how well a test aligns with the underlying construct it aims to capture(Ghauri and Gronhaug, 2005). If a test lacks validity, it fails to adequately measure the relevant content or competencies.

In order to ensure content validity of this research a representatives of sample were taken and the appropriateness of the questions were verified by the advisor of this research.

Ethical Consideration

Issue of confidentiality and anonymity is closely connected with the rights of beneficence, respect for the dignity and fidelity (Mantzorou&Fouka, 2011). The researcher, in accordance with this, took meticulous steps to make sure that no respondent's name or

identity who participated in this research work have their names be mentioned in any way and made sure that acquiescence was given. While performing this study, no respondent was forced into answering any questionnaires without willingness. In addition to that, the participants were informed of the purpose and aim of the study.

Chapter four: Results and Discussions

4.1.Overview

4.1.1. This chapter discusses about data preparation, processing, and result analysis. It begins with descriptive statistical analysis such as:demographic characteristics and descriptives statics of variable.The main section presents and discusses both structural and measurement model results.

Data Preparation

During the data preparation phase, responses collected via convenience non-probability sampling techniques using questionnaires were assigned code and entered into a computer system using MS Access 2016 for its ease of data insertion, retrieval through forms and queries. In this data preparation,incomplete or missing values for more than four items were also rejected.Proportion of missing values should be below 15%(Hair et al, 2014). After this filtering process, 334 valid responses out of the 372 distributed questionnaires remained, resulting in an 89.8% valid response rate.

In the data preparation phase, I exported the dataset to an Excel (.xlsx) file format. Next, I calculated the central mean for all items, correlation, regression using SPSS 29. Finally, I saved the complete dataset in CSV format for analysis using SmartPLS software."

4.2.Descriptive Statistics

4.2.1. Demographic characteristics

The survey collected information on four personal characteristics: gender, age, occupation, and education level. Respondents selected one answer from the provided multiple-choice options for each characteristic. The responses were then coded numerically for analysis using the SmartPLS data tool.

The largest age group (58.1% of the total sample) consisted of respondents aged 18 to 30 years(Table 3).The next largest group (37.4%) fell within the age range of 31 to 45 years.Only 4.5% of respondents were in the age group of 46 to 60 years.In terms of gender, 51.5% were male, and 48.5% were female.Education levels varied: 49.4% had a diploma, 29.3% held a bachelor's degree, 17.4% had education below a diploma, 3.3% had master's degrees, and 0.6% had education beyond master's level.Regarding occupation, 54.5% were private employees, 32.6% were government employees, and 12.9% were self-employed.These demographic characteristics suggest that the respondent profile is sufficient, especially considering that the age group is more likely to accept the adoption of new technologies.

Table 3: Demographic characteristics

Variable	Category	Sample Number	Frequency (%)	
Age	18- 30 years	194	58.1	
	31 – 45 years	125	37.4	
	46- 60 years	15	4.5	
Gender	Male	172	51.5	
	Female	162	48.5	
Education	Below diploma	58	17.4	
	Diploma	165	49.4	
	First Degree	98	29.3	

	Above Masters	2	0.6	
	Masters	11	3.3	
Occupations	Government Employee's	109	32.6	
	Private Employee's	182	54.5	
	Self-employed	43	12.9	

4.2.2. DescriptiveStatistics of Variables

In this subsection, descriptive statistics are used to demonstrate the level of agreement among responses. The mean represents the average behavior of a dataset, variability of the observed responses was indicated by the standard deviation. Deviations from the mean help quantify how much the data spreads from the average value. Higher mean values suggest greater agreement between the responses and the statement**.**

To determine factors influencing the adoption of the Telebirr digital payment platform, a total of 28 questions were formulated. These questions were grouped into six dimensions based on independent variables: Attitude, Perceived Ease of Usage, Perceived Usefulness, Perceived Risk or Security, Trust, and Conformance. The dependent variable was the adoption of the Telebirr platform. Respondents rated their level of agreement using a five-point Likert scale. Ratings ranged from 1 (strong disagreement) to 5 (strong agreement) for each question across the four attributes. According to the table, the mean scores for both dependent and independent variables fell

within the range of 3.0758 to 3.2680. Trust received the highest mean score of 3.2680, while conformance factor had the lowest mean score at 3.0758.

Table 4: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Attitude	334	1.50	4.50	3.1609	.62280
Percievedeasy of use	334	1.20	4.40	3.0928	.52299
Perceived usefulness	334	1.25	4.50	3.2058	.58743
Perceived Risk	334	2.00	5.00	3.1018	.60220
Trust	334	1.50	4.50	3.2680	.60873
Conformance	334	1.67	4.00	3.0758	.56455
Telebirr	334	1.25	4.75	3.1519	.62415
Valid N (listwise)	334				

4.2.1.1.Descriptive Statistics of the attitude Factor

The mean and standard deviation have been calculated for all four questions under the attitude factor dimension. These questiones include:1) 'I like to use Telebirr digital payment app due to it is convenient,' 2) 'I like to use Telebirr digital payment app due to it provides a wide range of products,' 3) 'I am like to use Telebirr digital payment app because it is beneficial to me,' and 4) 'I like to use Telebirr digital payment app because it is not complicated.' The mean scores for the attitude factor items ranged from 3.08 to 3.32. Specifically, the questiones related to Telebirr providing a wide range of products received the highest mean score (3.32), while the convenience factor had the lowest mean score (3.08). Overall, the attitude factor attributes had an average mean score of 3.16.

Table 5: Attitude Descriptive Statistics

	N	Mean	Std. Deviation
Attitude1	334	3.08	.749
Attitude2	334	3.32	.824
Attitude3	334	3.13	.931
Attitude4	334	3.12	.858
Valid N (listwise)	334		

4.2.1.2.Descriptive Statistics of Perceived Ease of Use Factor

The mean and standard deviation scores for the five sub-constructs of the Perceived Ease of Use factor dimension are states as: 1) Ease of Use When Using Telebirr Digital Payment: This sub-construct assesses how easy it is to use Telebirr for digital payments.2) Ease of Learning Telebirr: This sub-construct evaluates the ease of learning how to use Telebirr. 3)Flexibility in Performing Transactions Through Telebirr: Here, users rate how flexible they feel when conducting transactions using Telebirr. 4) Telebirr's

Payment Channel Variety: This sub-construct considers the variety of payment channels provided by Telebirr to ease the payment process. 5)Effort Required for Telebirr Transactions: Users indicate the level of effort needed when performing transactions through Telebirr. The result is presented in table 6.

Table 6:Perceived Ease of Use Descriptive Statistics

	N	Mean	Std. Deviation
PerceivedEaseofUse1	334	3.03	.918
PerceivedEaseofUse2	334	2.96	.889
PerceivedEaseofUse3	334	3.11	.855
PerceivedEaseofUse4	334	3.21	.842
PerceivedEaseofUse5	334	3.15	.865
Valid N (listwise)	334		

The table titled “Table 5: Perceived Ease of Use Descriptive Statistics” presents the descriptive statistics for five sub-constructs of perceived ease of use. All sub-constructs have a sample size of **334** responses. The average scores range from **2.96** to **3.21**, indicating a moderate perceived ease of use. The standard deviations range from **.842** to **.918**, suggesting that the responses vary somewhat but not excessively around the mean.The data suggests that the respondents generally find the system to be of moderate ease of use, with some variation in their perceptions.This information can be useful for understanding how users perceive the ease of using the Telebirr digital payment system. The consistent sample size across all items indicates a reliable dataset for analysis.

4.2.1.3.Descriptive Statistics of perceived usefulness

The mean and the standard deviation have been calculated for all the four questions of perceived usefulness. These questions are stated as: 1) By using Telebir digital payment saves my time and cost , 2) By using Telebir digital payment app save my money, 3) Telebirr helps me in terms of making better payment decisions, 4) Telebirr digital payment app is easier for me in order for comparison products among payment modes. The result is presented in table 7.

Table 7: Descriptive Statisticsperceived usefulness

	N	Mean	Std. Deviation
PerceivedUsefulness1	334	3.32	.860
PerceivedUsefulness2	334	3.21	.890
PerceivedUsefulness3	334	3.19	.890
PerceivedUsefulness4	334	3.10	.832
Valid N (listwise)	334		

Table 6 represents data from **334 respondents**. Four items measured perceived usefulness, with mean scores ranging from **3.10 to 3.32**. The standard deviation for each item is less than 1, indicating **relatively consistent responses** among participants. The data suggests a **moderate perception** of usefulness among the respondents. This table provides a snapshot of how the respondents perceive the usefulness of the subject in question, with a fairly consistent agreement across the items measured.

4.2.1.4.Descriptive Statistics of Perceived risk

The mean and the standard deviation have been calculated for all the six questions of Perceived risk. These questions are stated as: 1) Adequate payment security is provided by telebirr digital payment app, 2)There is minimum financial risk by using telebirr digital payment app, 3) I will get compensation from the ethiotelecom,when a transction error occurs and 4) Without having service, my account cannot be deducted, 5) If my account is wrongly debited, I have the right to claim the ethiotelecom and 6) Telebirr digital payment app perform well and process payment correctly. The result is presented in table8.

Table 8: Descriptive StatisticsPerceived risk

	N	Mean	Std. Deviation
PerceivedRisk1	334	3.15	.933
PerceivedRisk2	334	3.21	.858
PerceivedRisk3	334	3.16	.905

PerceivedRisk4	334	3.08	.880
PerceivedRisk5	334	3.16	.904
PerceivedRisk6	334	3.24	.857
Valid N (listwise)	334		

The study included **334 participants**. Participants rated six different aspects of perceived risk. The average scores ranged from **3.08 to 3.24** on a scale. The variation in responses was moderate, with standard deviations between **.857 and .933**. This table summarizes the participants' perceptions of risk across six different items, indicating a fairly consistent view with some variability. The mean scores suggest a moderate level of perceived risk.

4.2.2.5. **Descriptive Statistics of Trust**

The mean and the standard deviation have been calculated for all the four questions of trust. These questions are stated as: 1) Telebirrdigital payment app give rapid response as with time frame, 2)Telebirr digital payment app give service as promised, 3) Telebirr digital payment app keeps accurate records of transactions, and 4) Telebirr digital payment is dependable. The result is presented in table 9.

Table 9: Descriptive Statistics trust

	N	Mean	Std. Deviation
Trust1	334	3.19	.898
Trust2	334	3.29	.906
Trust3	334	3.22	.926
Trust4	334	3.37	.805
Valid N (listwise)	334		

Table 8 presents the descriptive statistics for four sub-constructs of trust (Trust1, Trust2, Trust3, Trust4) related to the Telebirr digital payment system. Each trust sub-construct was evaluated by **334 respondents**. **Trust1** Average rating is **3.19**, suggesting a moderate

level of trust;**Trust2** Slightly higher average of **3.29**, indicating a somewhat stronger trust; **Trust3** Similar to Trust1 with an average of **3.22**, and **Trust4**: Highest average rating of **3.37**, reflecting the strongest trust among the four. **Trust1** Std. Deviation of **.898**, showing some variability in responses; **Trust2**: Std. Deviation of **.906**, indicating similar variability as Trust1; **Trust3**: Slightly higher Std. Deviation of **.926**, suggesting a bit more diversity in opinion; **Trust4**: Least variability with a Std. Deviation of **.805**, which means responses were more consistent. The overall data indicates that respondents generally have a moderate to slightly high level of trust in the Telebirr system, with Trust4 being rated the highest on average. The standard deviations suggest that there is some variation in how respondents perceive each sub-construct of trust, but it's not overly large, which implies a relative consensus among the participants.

4.2.1.5.Descriptive Statistics of Conformance

The mean and the standard deviation have been calculated for all the six questions of Conformance. These questions are stated as: 1) By using telebir I am confident have my money when I need it, 2) I know Ethiotelecom getting claims paid when something goes wrong with telebir, 3) I know telebir to trade safely have the appropriate risk controls in place, 4)I am confident telebirr treat customers fairly from the sales process to how complaint is managed, 5)I am confident telebirr has consumer protection rules, and 6) Telebir to make sureabide by the rule of regulation they have risk- based supervision . The result is presented in table10.

Table 10: Descriptive Statistics conformance

	N	Mean	Std. Deviation
Conformance1	334	3.07	.856
Conformance2	334	3.14	.916
Conformance3	334	3.01	.890
Conformance4	334	2.99	.835
Conformance5	334	2.93	.810
Conformance6	334	3.31	.895
Valid N (listwise)	334		

Table 9, each conformance measure was assessed by **334 participants**. Six different conformance metrics were evaluated, with scores ranging on a scale. The mean scores for the conformance metrics varied slightly, with **Conformance6** having the highest average of **3.31** and **Conformances** the lowest at **2.93**.The standard deviation, indicating the spread of scores, was relatively similar across all metrics, suggesting a consistent level of variability in responses.This table provides a statistical summary of how participants rated various conformance metrics.

4.2.1.6.Descriptive Statistics of Telebir

The mean and the standard deviation have been calculated for all the four questions of Telebir. These questions are stated as: 1) I like using Telebir digital payment method ,2) I Prefer Telebir from different digital payment method available, 3) I always use Telebir to make payment, and 4) Yet, I didn't face problem by using Telebir mobile payment. The result is presented in table 11.

Table 11: Descriptive Statisticstelebirr

	N	Mean	Std. Deviation
Telebir1	334	3.26	.966
Telebir2	334	3.23	.907
Telebir3	334	3.11	.853
Telebir4	334	3.00	.868
Valid N (listwise)	334		

Table 9, each Telebir variable had **334 responses**. The mean scores for Telebir1, Telebir2, Telebir3, and Telebir4 were **3.26**, **3.23**, **3.11**, and **3.00** respectively. Thestandard deviations, which measure the spread of the scores, were **.966** for Telebir1, **.907** for Telebir2, **.853** for Telebir3, and **.868** for Telebir4 so, all **334 cases** were valid for the analysis.

4.2.2. Correlation Analysis

Correlation analysis examines the associations between two variables. The strength of this relationship is represented by a number between -1 and +1. A positive or negative sign indicates the type of relationship. The correlation coefficient values between 0.1 and 0.29 indicate a weak relationship; 0.3 and 0.49 suggest a moderate relationship; above 0.5 indicate a strong relationship. In this study, all basic independent factors were included in the correlation analysis, and a bivariate two-tailed correlation analysis was performed. The results are shown in a table 12.

Table 12: Correlations Matrix

		Attitude	Percievedeasy of use	Perceived usefulness	Perceived Risk	Trust	Conformance	Telebirr
Attitude	Pearson Correlation	1						
	Sig. (2-tailed)							
	N	334						
Percievedeasy of use	Pearson Correlation	.260**	1					
	Sig. (2-tailed)	.000						
	N	334	334					
Perceived usefulness	Pearson Correlation	.251**	.280**	1				
	Sig. (2-tailed)	.000	.000					
	N	334	334	334				
Perceived Risk	Pearson Correlation	.191**	.126*	.175**	1			
	Sig. (2-tailed)	.000	.022	.001				
	N	334	334	334	334			
Trust	Pearson Correlation	.138*	.214**	.280**	.174**	1		
	Sig. (2-tailed)	.011	.000	.000	.001			
	N	334	334	334	334	334		
Conformance	Pearson Correlation	.169**	.188**	.181**	.653**	.263**	1	
	Sig. (2-tailed)	.002	.001	.001	.000	.000		
	N	334	334	334	334	334	334	

	Pearson Correlation	.277**	.171**	.215**	.881**	.204**	.653**	1
Telebirr	Sig. (2-tailed)	.000	.002	.000	.000	.000	.000	
	N	334	334	334	334	334	334	334

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

The table presents a correlation matrix showing relationships between different factors related to digital payment systems. Attitude & Ease of Use: A moderate positive correlation (r = .260), significant at 0.01 level) suggests that as users perceive digital payment systems as easier to use, their attitude towards using them becomes more positive. Usefulness & Trust: Perceived usefulness also has a moderate positive correlation with trust (r = .280), significant at 0.01 level), indicating that finding the system useful is associated with higher trust in it. Risk & Conformance: There's a strong positive correlation between perceived risk and conformance (r = .653), significant at 0.01 level), meaning that as users perceive higher risks, they tend to conform more to the security measures. Telebirr: This specific mobile payment platform shows strong correlations with all factors, especially perceived risk (r = .881), significant at 0.01 level), suggesting that risk perceptions are highly influential in its adoption and use. Each correlation is based on a sample size of 334 respondents, and the significance levels indicate a reliable statistical relationship.

4.2.3. Assumption Testing for Regression Analysis

In regression analysis ensuring that data are accurately represent the sample is crucial (Hair et al., 2006). Normality, linearity, and multicollinearity assumptions play a vital role in the validity of the results.

4.2.3.1.Normality Assumption

Normality means to the distribution graph of a variable. In statistics, the normal distribution is crucial because most statistical tests assume normally distributed data. Before conducting regression analysis, it's essential to test whether the independent variables follow a normal distribution. Essentially, normality describes how large data samples appear when plotted.

Histograms serve as graphical tools for assessing whether residuals follow a normal distribution. If residuals are normally distributed, the histogram exhibits a bell-shaped curve with centered and unimodal (Robert, 2006). In this study, the distribution of residuals, as shown in Annex 2, resembles a normal curve. This indicates that it is not heavily skewed and confirms that the data follows a normal distribution.

In assessing the normality assumption, normal probability plots were employed. If residuals are normally distributed around their mean, they should follow a straight line on the plot, but when the distribution is normal, the residual line closely aligns with the diagonal(Hair et al.,2006). In this study (Annex 3), the residuals exhibit a reasonably normal distribution, confirming the normality of the data.

Skewness measure distribution of symmetry. It indicates degree deviation from normality, either to the left or right. If skewness value is zero or equals to the median it is a perfect normal distribution. **Kurtosis**, on the other hand, assesses how observations cluster around a central point. It determines if the dataset is light-tailed or heavy-tailed compared to a normal distribution.

In this study, the computed skewness and kurtosis values, along with their standard errors (as shown in TABLE 11), fall within the range of +/- 1. This suggests that the data can be assumed to be normally distributed.

Table 11: Descriptive Statistics of Skewness and Kurtosis measures

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Attitude	334	-.362	.133	-.143	.266
Percievedeasy of use	334	-.299	.133	-.056	.266
Perceived usefulness	334	-.820	.133	.502	.266
Perceived Risk	334	-.262	.133	-.245	.266
Trust	334	-.555	.133	.054	.266
Conformance	334	-.287	.133	-.468	.266
Telebirr	334	-.462	.133	.207	.266

Valid N (listwise)	334				

As indicated from Table 12 descriptive statistics for skewness and kurtosis: Attitude: The skewness value is approximately -0.362, indicating a slight leftward deviation from a perfectly symmetric distribution and the kurtosis value is around -0.143, suggesting a relatively flat distribution compared to a normal distribution. Perceived Ease of Use: The skewness value is approximately -0.299, showing a similar leftward deviation and kurtosis value is close to -0.056, indicating a slightly flatter distribution. Perceived Usefulness: The skewness value is approximately -0.820,suggesting a more pronounced leftward deviation and the kurtosis value is around 0.502, indicating a distribution that is somewhat peaked compared to a normal distribution. Perceived Risk: The skewness value is approximately -0.262, showing a mild leftward deviation and the kurtosis value is close to -0.245, implying a relatively flat distribution. Trust: The skewness value is approximately -0.555, indicating a moderate leftward deviation. And the kurtosis value is around 0.054, suggesting a distribution close to normality. Conformance: The skewness value is approximately -0.287, showing a slight leftward deviation and the kurtosis value is close to -0.468, implying a relatively flat distribution. Telebirr: The skewness value is approximately -0.462, indicating a moderate leftward deviation and the kurtosis value is around 0.207, suggesting a distribution that is somewhat peaked. Overall, the skewness and kurtosis values fall within the range of +/- 1, which supports the assumption of normality for the data.

4.2.3.2.Linearity Assumption

Linear models predict values along a straight line, where a constant change in the dependent variable corresponds to a constant change in the independent variable (Hair et al., 2006). In simpler terms, linearity describes how the dependent variable changes in relation to the independent variable. To assess this relationship, scatter plots of the standardized residuals versus the fitted values were visually examined.

4.2.3.3.Multicollinearity Assumption

Multicollinearity is a situation where independent variables in a regression model are highly correlated and there is an overlap of explanatory power among these variables, leading to potential contradictions (Hair et al., 2006). In this research, multicollinearity was assessed using tolerance and the variance inflation factor (VIF) and Tolerance. VIF quantifies how much the precision of regression estimates is affected by correlations among independent variables. Ideally, VIF values should be less than 10; and Tolerance measures the proportion of variability in a specific independent variable that is not explained by other independent variables in the model. It is calculated using the formula (1 - R^2).If the tolerance value falls below 0.1, it suggests high multiple correlation with other variables, indicating the possibility of multicollinearity.

Table 13: Multicollinearity test

Model	Collinearity Statistics	
	Tolerance	VIF
Attitude	.879	1.138
Percievedeasy of use	.858	1.165
Perceived usefulness	.837	1.195
Perceived Risk	.564	1.774
Trust	.862	1.160
Conformance	.544	1.839

a. Dependent Variable: Telebirr

Table 13 presents a multicollinearity test for a model with “Telebirr” as the dependent variable. Overall, the model shows low to moderate multicollinearity among the variables, which suggests that the independent variables can reasonably be used in the regression analysis for predicting the adoption of Telebirr.

4.3. Regression Analysis

4.3.1. Multiple Regressions

Regression is used to explore how one or more predictor variables impact an outcome variable. Multiple regression, also known as multivariate regression, employs multiple independent variables to determine the values of a single dependent variable. Its purpose is to understand the effects of these independent variables on the dependent variable and identify significant and insignificant factors.

In this research, multiple regression analysis was performed to determine the extent to which independent variables—such as Attitude, Perceived Ease of Use, Perceived Usefulness, Perceived Risk, Trust, and Conformance—explain the variation in the dependent variable, which represents the adoption of the Telebirr digital payment platform. The **R-squared** value was used to quantify the percentage of variance in the dependent variable that can be attributed to these independent variables.

Equations of multiple regression is: Y= A+B1X1+B2X2+…. BnXn

Where Y = the predicted independent variable; A = constant; B = unstandardized regression coefficient; X = value of the predicted coefficient.

Thus, in this research we develop these multiple equations to predict the level of preference for the six independent variables:

Tel =A+B1AT+B2PEU+B3PU+B4PR+B5T+B6C

Y=-0.243+0.096 AT +0.776 PR+0.118C

Where: Tel is Adoption of Telebirr digital payment platform

AT is Attitude

PR is Perceived risk

C is Conformance

Table 14: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.893[a]	.798	.795	.28292	1.849

a. Predictors: (Constant), Conformance, Attitude, Trust, Perceived ease of use, Perceived usefulness, Perceived Risk

b. Dependent Variable: Telebirr

Table 14 presents a model summary of a statistical analysis, with the dependent variable being Telebirr. Adjusted R Square: Adjusted for the number of predictors, 79.5% of the variance is accounted for, which is very close to the R Square value, indicating a good fit, and which means that 79.5% of the *Adoption of Telebirr digital payment platform* variable was explained by the variation of the six independent variables.

Analysis of Variance (ANOVA) is employed to assess the hypothesis of no linear relationship between predictor and dependent variables According to Robert (2006), if the **F-statistic** is significant (with a p-value less than 0.05), we reject the null hypothesis, indicating evidence of a linear relationship between the independent and dependent variables. The results are shown in a table

Table 15: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	103.551	6	17.259	215.607	.000[b]

	Residual	26.175	327	.080		
	Total	129.726	333			

a. Dependent Variable: Telebirr

b. Predictors: (Constant), Conformance, Attitude, Trust, Percievedeasy of use, Perceived usefulness, Perceived Risk

This ANOVA result implies that the model with these predictors is a good fit for explaining the variance in the adoption of Telebirr, digital payment app . The predictors listed contribute significantly to the model.

Table 16 result shows on predicting the adoption of the Telebir digital payment platform, the standardized beta coefficients for independent variables (Attitude, Perceived Risk, and Conformance) play a crucial role. Here's what they indicate: A one-unit increase in Attitude corresponds to a 0.096 increase in Telebir adoption, assuming other variables remain constant.; a one-unit increase in Perceived Risk leads to a substantial 0.776 increase in consumer preference for Telebir, and **a**unit increase in Conformance results in a 0.118 increase in Telebir adoption. Among these factors, Perceived Risk appears to be the most influential in positively affecting consumer preference for Telebir

Table 16: Coefficient Matrix

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.243	.141		-1.726	.085
	Attitude	.097	.027	.096	3.636	.000

	Percievedeasy of use	.018	.032	.015	.578	.564
	Perceived usefulness	.028	.029	.026	.957	.339
	Perceived Risk	.804	.034	.776	23.450	.000
	Trust	.015	.027	.014	.535	.593
	Conformance	.131	.037	.118	3.513	.001

a. Dependent Variable: Telebirr

4.4.Hypothesis Testing and Interpretation of Results

Table 17: Hypothesis test Finding and their reasons

Hypotheses	Results	Reason
H1: Attitude has a positive effect on consumers' adoption of telebirr digital payment app.	H1: Supported	B = 0.096, P < 0.05
H4: Perceived Risk has a positive effect on consumers' adoption of telebirr digital payment app.	H4: Supported	B = 0.776, P < 0.05
H6: Conformance/Compatibility has a positive effect on consumers' adoption of telebirr digital payment app.	H6: Supported	B = 0.118, P < 0.05

Hypothesis H1 (Attitude): Attitude has a positive effect on consumers'' intentions to use the Telebir Digital Payment platform. In other words, as users' attitude towards Telebir improves, their intention to use it also increases.

Hypothesis H4 (Perceived Risk): Perceived Risk has a positive effect on consumers' intention to use Telebir. Higher perceived risk is associated with stronger preference for Telebir.

Hypothesis H6 (Conformance/Compatibility):Conformance/Compatibility has a positive effect on consumers' adoption of telebirr digital payment app.When users perceive that Telebir conforms well to their needs and existing systems, they are more likely to adopt it.

Whereas **Perceive ease of use, perceive usefulness** and **trust** have no significant effect on adoption of telebirr digital payment app.The lack of significant effects for perceived ease of use, perceived usefulness, and trust on the adoption of the Telebirr digital payment app could be attributed to several factors such as- the study might have used a specific sample that does not fully represent the broader population, the availability of alternative payment methods (e.g., cash, other digital wallets), local infrastructure (network coverage, internet speed), and regulatory environment play a crucial role or Perceptions of ease of use, usefulness, and trust can vary across cultures. Hence, examining these factors and conducting further research with a robust methodology can provide deeper insights into the adoption of the Telebirr digital payment app.

Overall, these findings highlight the importance of Attitude, Perceived Risk, and Conformance in shaping consumers' adoption intentions for the Telebir Digital Payment platform.

4.5.Discussion of Results

The key findings from the demographic characteristics are: Age Distribution: The largest age group in your sample (58.1%) falls within the 18 to 30 years range, the next largest group (37.4%) consists of respondents aged 31 to 45 years, Only a small percentage (4.5%) falls in the 46 to 60 years age group. In case of gender Approximately 51.5% of respondents are male, while 48.5% are female, education Levels -49.4% of respondents have a diploma, 29.3% hold a bachelor's degree, 17.4% have education below a diploma, 3.3% possess master's degrees and a very small percentage (0.6%) have education beyond the master's level. Occupation-54.5% are private employees, 32.6% work in government jobs and 12.9% are self-employed. Given this demographic profile, it appears that this

study sample covers a diverse range of ages, educational backgrounds, and occupational roles. The dominance of the younger age group suggests openness to adopting new technologies. Keep in mind that these findings provide valuable context for your research on digital payment systems.

For Descriptive Statistics -Attitude-Mean scores ranged from 3.08 to 3.32, with the highest for product range and lowest for convenience and Average mean score: 3.16.Perceived Ease of Use -Scores ranged from 2.96 to 3.21, indicating moderate ease of use. Perceived Usefulness: Mean scores between 3.10 to 3.32 suggest moderate perceived usefulness. Trust levels rated from 3.19 to 3.37, with Trust4 showing the strongest trust. Mean scores varied slightly, with Conformance6 scoring the highest at 3.31 and Conformance5 the lowest at 2.93.

The key findings from the correlation matrix related to digital payment systems are: A moderate positive correlation ($r = 0.260$, significant at the 0.01 level) between attitude and Ease of use suggests that as users perceive digital payment systems as easier to use, their attitude toward using them becomes more positive. Perceived usefulness has a moderate positive correlation with trust ($r = 0.280$, significant at the 0.01 level), indicating that finding the system useful is associated with higher trust. There's a strong positive correlation between perceived risk and conformance ($r = 0.653$, significant at the 0.01 level). As users perceive higher risks, they tend to conform more to security measures. **Telebirr**,this specific mobile payment platform shows strong correlations with all factors, especially perceived risk ($r = 0.881$, significant at the 0.01 level). Risk perceptions play a crucial role in its adoption and use.

Regression result of the study are: The data met assumption of normality, linearity,and low to moderate multicollinearity. Skewness and Kurtosis value fall within an acceptable range. The regression model expresses 79.5% of the variance in telebirr adoption. Influential factors are: Attitude positively influence telebirr adoption, Perceived risk had a substantiate positive impact on adoption of telebirr and conformance also play a role.

Chapter 5

Summary, Conclusion and Recommendation

In this chapter we summarizewhat was discussed before in this paper and have conclusion based on the results from the research finding. Based on the research main findings, recommendations and directions for future researches alsowill be presented.

5.1. Summary of Major Findings and Conclusions

The main purpose of this research paper is studying**factors affecting the adoption of digital payment platform-the case of telebir**. Although this study specifically examines mobile payment systems(telebirr), the insights can be relevant for understanding consumer behavior in the broader context of adoption of digital payment. Based on the results of this study, we can draw the following conclusions:

1. **Attitude (H1):** The positive and significant effect of attitude on consumers' intentions to use Telebir Digital Payment is supported. Specifically, the coefficient (B) of 0.096 with P< 0.05 indicates that a favorable attitude toward Telebir Digital Payment is associated with higher adoption intentions.
2. **Perceived Risk (H4):** The positive effect of perceived risk on consumers' intention to use Telebir Digital Payment is also supported. With a coefficient (β) of 0.776 and with P<0.05, it suggests that consumers who perceive lower risks associated with Telebir Digital Payment are more likely to adopt it.Similar finding by Nguyen and co-authors on their studied on The Roles of Perceived Risk and Trust on E–Payment Adoption(Nguyen and Huynh., 2018).
3. **Conformance/Compatibility (H6):** The positive and significant effect of conformance or compatibility on consumers' intentions to use Telebir Digital Payment is supported. The coefficient (B) of 0.118 with P<0.05 indicates that compatibility with existing systems or user habits positively influences adoption intentions. In support of this study was done by Al-Jabri

and Sohail studied mobile banking adoption applying diffusion of innovation theory and found that relative advantage, compatibility/Conformance, and observability have positive impact on adoption.

5.2. Recommendations

On the finding of results, the following recommendations are made.

As telebirr is one of products of ethiotelecom,it should consider:

- Constituently brandingand design the app. Maintain consistent branding elements (colors, logos, fonts) across services.
- Error Handling i.e., Anticipate potential issues during integration (e.g., failed transactions, timeouts, invalid data), Provide clear error messages that guide users and developers in resolving issues.Handle edge cases gracefully to prevent disruptions in the user experience.
- Security and Compliance i.e., Ensure that Telebir complies with security standards (e.g., PCI DSS for payment processing), Implement secure communication protocols (HTTPS) and data encryption, Address privacy concerns related to sharing user data between services.
- Testing and monitoring i.e., Rigorously test the integration across different scenarios (e.g., successful payments, declined transactions, network failures), Monitor the integration in real-world usage to identify and address any issues promptly.

5.3. Limitations and Future Directions

This study focused on a specific area and employed convenience sampling, a non-probability technique. However, due to the limited representativeness of convenience samples, the generalizability of the findings may be restricted. Both cost and time limitations also impact research design and execution.

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Annex 1

Addis Ababa University School of Commerce

Questionnaire on **"FACTORS AFFECTING THE ADOPTION OF DIGITAL PAYMENT PLATFORM-THE CASE OF TELEBIRR."**

Dear Respondent, Thanks for taking part in this research project

I'm doing my Master's in Marketing Management at Addis Ababa University, and this project is all about figuring out what makes people use digital payment platforms, like Telebirr. Be assured that the information is used only for this research and will be confidential. I kindly request you:

- To read and understand each question and record or give your opinion
- Answer the question by yourself or not to consult others for answering
- Answer all the questions or not to leave any item unfilled
- Do not write your name or include any other personal details on the questioners
- Check and return the filled questionnaire to the assigned person.

Thank you again in advance,

MEHARI SHIFERAW

Part I: Background information

1. Age

   (a) 18- 30 years ☐ (b) 31 – 45 years ☐ (c) 45- 60 years ☐

2. Gender: (a) Male☐ (b) Female ☐

3. Education?

   (a) Below diploma ☐(b) Diploma ☐(c) First Degree ☐(d) Above Masters ☐(e) Masters ☐

4. Occupation (a) Gov't Employee ☐(b) Private Employee ☐(c) self-employed☐

Part II: For each statement below, just pick the answer and write tick on the box that best reflects your experience

1. **Strongly Disagree**
2. **Disagree**
3. **Neutral**
4. **Agree**
5. **Strongly Agree**

Factors affecting the adoption of Tele birr

Please tick one number per line to indicate the extent to which you agreed or disagreed with

the following statements

1. **Attitude**	**Strongly disagree**	Disagree	Neutral	Agree	Strongly agree
1.1. I like to use Telebirr digital payment app due to it is convenient					
1.2. I like to use Telebirr digital payment app due to it provides a wide range of products					
1.3. I am like to use Telebirr digital payment app because it is beneficial to me					
1.4. I like to use Telebirr digital payment app because it is not complicated.					
2. Perceived ease of use	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
2.1. Ease of Use When Using Telebirr Digital Payment.					
2.2. Ease of Learning Telebirr					
2.3. Flexibility in Performing Transactions Through Telebirr					

2.4. Telebirr's Payment Channel Variety					
2.5. Effort Required for Telebirr Transactions					
3. **perceived usefulness**	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
3.1. By using Telebir digital payment saves my time and cost					
3.2. By using Telebir digital payment app save my money					
3.3. Telebirr helps me in terms of making better payment decisions					
3.4. Telebirr digital payment app is easier for me in order for comparison products among payment modes					
4. Perceived risk	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
4.1. Adequate payment security is provided by telebirr digital payment app					
4.2. There is minimum financial risk by using telebirr digital payment app					
4.3. I will get					

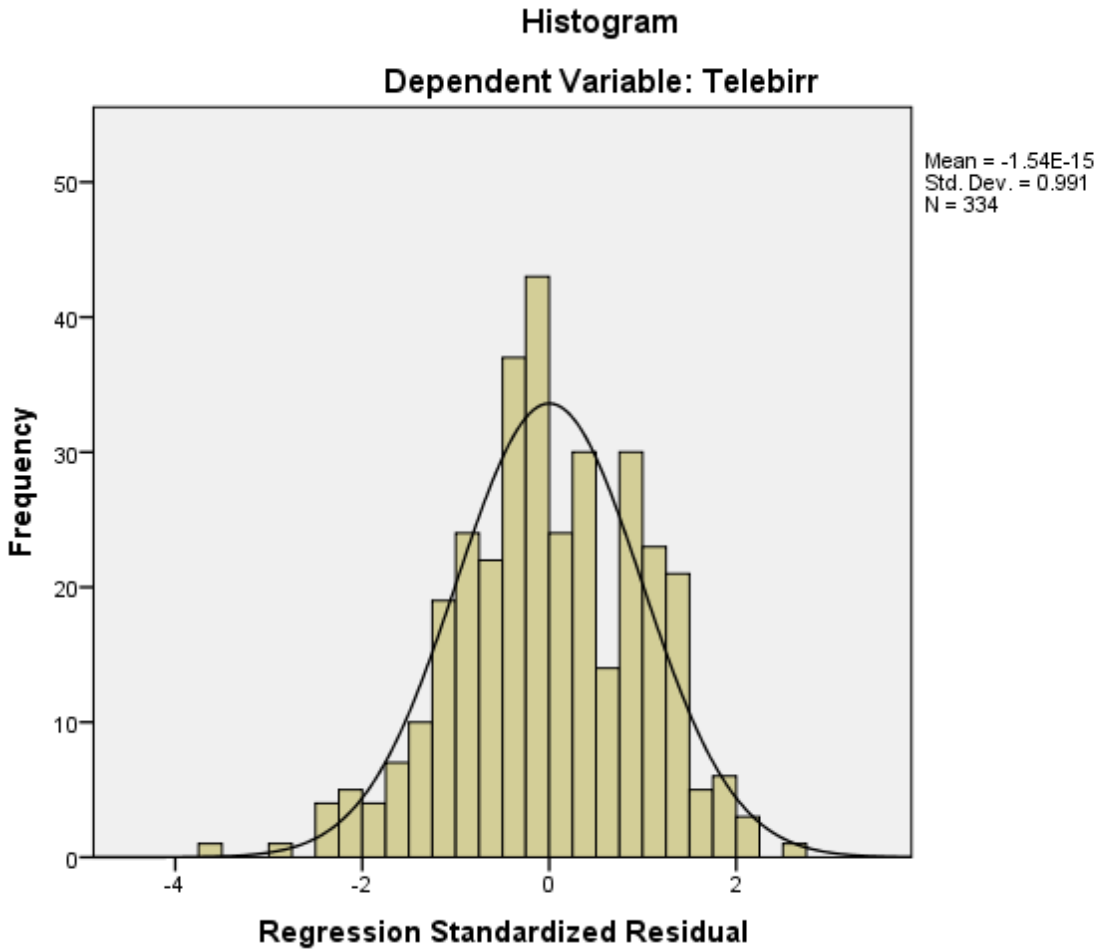
compensation from the ethiotelecom,when a transction error occurs					
4.4.) Without having service, my account cannot be deducted.					
4.5. If my account is wrongly debited, I have the right to claim the ethiotelecom					
4.6. Telebirrdigital payment app perform well and process payment correctly					
5. Trust	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
5.1. Telebirr digital payment app give rapid response as with time frame.					
5.2. Telebirr digital payment app give service as promised					
5.3. Telebirr digital payment app keeps accurate records of transactions					
5.4. Telebirr digital payment is					

dependable					
6. Conformance	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
6.1. By using telebir I am confident have my money when I need it					
6.2. I know Ethiotelecom getting claims paid when something goes wrong with telebir					
6.3. I know telebir to trade safely have theappropriate risk controls in place					
6.4. I am confident telebirr treat customers fairly from the sales process to how complaint is managed.					
6.5. I am confident telebirr has consumer protection rules					
6.6. Telebir to make sure abide by the rule of regulationthey have risk- based supervision					
7.0. **Telebir**	**SD(Strongly disagree)**	**Disagree(D)**	**Neutral(N)**	**Agree(A)**	**Strongly agree (SA)**

7.1.	I like using Telebir digital payment method					
7.2.	I Prefer Telebir from different digital payment method available					
7.3.	I always use Telebir to make payment					
7.4.	Yet, I didn’t face problem by using Telebir mobile payment					

Thank You,

Annexes 2: Histogram for Normality Test of the Data



Annexes 3: Normal P- P Plot to Test Normality of the Data