Addis Ababa University
አዲስ አበባ ዩኒቨርሲቲ
SEEK WISDOM, ELEVATE YOUR INTELLECT AND SERVE HUMANITY !

DETERMINANTS OF CUSTOMER ADOPTION OF DIGITAL BANKING: A CUSTOMER-LEVEL ANALYSIS IN AN INTEREST-FREE BANK: EVIDENCE FROM HIJRA BANK ETHIOPIA

BY: ZEBIBA FEDLU

JUNE, 2026

ADDIS ABABA, ETHIOPIA

DETERMINANTS OF CUSTOMER ADOPTION OF DIGITAL BANKING: A CUSTOMER-LEVEL ANALYSIS IN AN INTEREST-FREE BANK: EVIDENCE FROM HIJRA BANK ETHIOPIA

BY: ZEBIBA FEDLU

ADVISOR: DR. TILAHUN TEKLU (PhD)

A THESIS SUBMITTED TO SCHOOL OF GRADUATE STUDIES OF ADDIS ABABA UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION (MBA)

JUNE 2026

ADDIS ABABA, ETHIOPIA

ADDIS ABABA UNIVESITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF MANAGEMENT (MBA)

BY

ZEBIBA FEDLU

Approved by Board of Examiners

Advisor	Signature	Date
Tclahun Tekle		June 2026

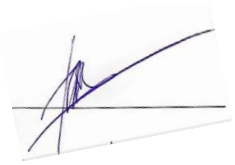
Internal Examiner	Signature	Date
Amare Abawa (PhD)		June 2026

External Examiner	Signature	Date
Alejandro G. (PhD)		22 June 2026

Endorsement

These thesis has been submitted to Addis Ababa University, Collage of Business and Economics, Department of Management for examination with my approval as a university advisor.

Dr. Tilahun Teklu (PhD)

Signature:  Date: June, 2026

DECLARATION

I, Zebiba Fedlu, do hereby declare that this thesis is my original work and have never been Submitted partially or fully by any person to any institution and that all source of materials Used for this thesis have been properly acknowledge.

Submitted By:

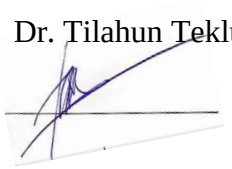
Full Name: Zebiba Fedlu

Signature:  Date: June, 2026

Approved By:

This thesis has been submitted for examination with my approval

Full Name: Dr. Tilahun Teklu (PhD)

Signature:  Date: June, 2026

ACKNOWLEDGMENT

I extend my gratitude to the Almighty Allah for the strength, wisdom and perseverance with which he guided me to complete this study.

I would like to express sincere thanks to my advisor Dr. Tilahun Teklu for his valuable guidance, constructive comments and continuous support during this research.

I would like to thank the members of the Hijra Bank team, especially Mr. Assen Mohammed, Senior Chief Retail and Digital Banking Officer and Mr. Abdiselam Mohamed, Director of Digital Banking, the Manager of Bethel Ansar Branch and the staffs of the respective branches for their cooperation and support during the study.

I owe a debt of gratitude to all my family and friends in general for their unconditional love, encouragement, prayers and support during my study years.

Lastly, I would like to thank everyone who helped in any ways with this research.

Contents

Chapter One 1

Introduction 1

1.1 Background of the Study 1

1.2 Statement of Problem 5

1.2 Research questions 8

1.2.1. General Research Question 8

1.2.2. Specific Research Questions 8

1.3 Research Objectives 9

1.3.1. General Objective 9

1.3.2. Specific Objective 9

1.4 Research Hypotheses 9

1.5 Significance of the Study 10

1.6.1 Theoretical Significance 10

1.6.2 Practical Significance 11

1.6 Scope of the Study 13

1.7 Limitation of the Study 13

1.8 Operational Definition of terms 15

1.9 Organization of the Thesis 17

Chapter Two 19

Review of Literature 19

2.1 Introduction 19

2.2 Theoretical Literature Review 20

2.2.1 Technology Acceptance Model (TAM) 20

2.2.2 Diffusion of Innovation (DOI) Theory 21

2.2.3 Theory of Planned Behavior (TPB) 22

2.2.4 Summary of the Theoretical Foundations 23

2.3. Conceptual Literature Review 24

2.3.1 Concept of Digital Banking 24

2.3.2 Digital Banking Service 25

2.3.3 Concept of Digital Banking Adoption 27

2.3.4 Interest-Free Banking 28

2.3.5 Digital Banking In Interest-Free Banks 28
2.3.6 Customer Adoption Behavior 29
2.3.7 Digital Literacy and Digital Banking Adoption 30
2.3.8 Customer Trust and Digital Banking Adoption 31
2.3.9 Customer Awareness and Digital Banking Adoption 33
2.3.10 Cash Preference and Digital Banking Adoption 34
2.4 Empirical Literature Review 35
2.4.1 Digital Literacy and Digital Banking Adoption 35
2.4.2 Customer Trust and Digital Banking Adoption 36
2.4.3 Customer Awareness and Digital Banking Adoption 37
2.4.4 Cash Preference and Digital Banking Adoption 38
2.4.5 Empirical Studies in Interest-Free Banking Contexts 39
2.4.6 Empirical Studies in Ethiopia 40
2.5 Research Gap 41
2.6 Conceptual Framework 43
2.7 Research Hypotheses 45
2.7.1 Digital Literacy and Digital Banking Adoption 45
2.7.2 Customer Trust and Digital Banking Adoption 46
2.7.3 Customer Awareness and Digital Banking Adoption 47
2.7.4 Cash Preference and Digital Banking Adoption 48
Chapter Three 49
Research Methodology 49
3.1 Research Approach 49
3.2 Research Design 50
3.3 Target Population 51
3.4 Sampling Procedure 52
3.5 Sample Size Determination 52
3.6 Data Sources 53
3.7 Data Collection Techniques 54
3.8 Method of Data Analysis 55
3.8.1 Model Specification (Econometric Model) 56
3.9 Validity and Reliability 57

3.10 Ethical Consideration 58
Chapter Four 59
Data Analysis and Presentation 59
4.1 Introduction 59
4.2 Response Rate and Sample Characteristics 59
4.3 Demographic Characteristics of Respondents 59
4.3.1 Gender Distribution 59
4.3.2 Age Distribution 60
4.3.3 Educational Level 60
4.3.4 Digital Banking Service Used 61
4.4 Descriptive Statistics of Study Variables 62
4.5 Reliability Analysis 62
4.6 Correlation Analysis 63
4.7 Diagnostic Test for Multiple Linear Regression 64
4.7.1 Linearity Test 64
4.7.2 Independence of Errors (Autocorrelation) Test 65
4.7.3 Normality of Residuals 65
4.7.4 Homoscedasticity Test 66
4.7.5 Multicollinearity Test 67
4.7.6 Summary of Diagnostic Tests 68
4.8 Regression Analysis and Hypothesis Testing 69
4.9 Summary of Hypothesis Testing 71
4.10 Discussion and Findings 72
4.10.1 Digital Banking and Digital Literacy 72
4.10.2 Customer Trust and Digital Banking 73
4.10.3 Customer Awareness and Digital Banking 74
4.10.4 Cash Preference and Digital Banking 75
4.10.5 Qualitative Insight From Respondent 76
4.10.6 Overall Discussion 76
Chapter Five 78
Summary, Conclusions, and Recommendations 78
5.1 Introduction 78

5.2 Summary of the Study 78
5.3 Summary of Key Findings 79
5.4 Conclusions 80
5.5 Theoretical Implications 81
5.6 Practical Implications 82
5.7 Policy Implications for Regulators 83
5.8 Limitations of the Study 84
5.9 Recommendations for Future Research 85
5.10 Chapter Summary 86
References 87
Appendix 92

List of Tables

Table 4.1 Response Rate 59
Table 4.2 Gender Distribution 60
Table 4.3 Age Distribution 60
Table 4.4 Educational Level 61
Table 4.5 Digital Banking Service Used 61
Table 4.6 Descriptive Statistics of Study variables 62
Table 4.7 Reliability Analysis Result 62
Table 4.8: Pearson Correlation Matrix 63
Table 4.9 Durbine-Watson Test Result 65
Table 4.10 Variance Inflation Factor 68
Table 4.11 Summary of Regression Assumption Tests 68
Table 4.12 Multiple Regression Results 69
Table 4.13 Summary of Hypothesis Testing 71
Table 5.1 Summary of Key Findings 80

List of Figures

Fig 2.1 Conceptual Framework of the Study. 45
Fig. 4.1 Histogram of Standardized Residuals..... 65
Fig. 4.2 Normal Q-Q Plot of Standardized Residuals..... 66
Fig. 4.3 Scatterplot of Standardized Residuals versus Predicted Values..... 67

List of Acronyms

ATM – Automated Teller Machine

CA – Customer Awareness

CADB – Customer Adoption of Digital Banking

CP – Cash Preference

CT – Customer Trust

DBA – Digital Banking Adoption

DL – Digital Literacy

DOI – Diffusion of Innovation

IFB / IFBs – Interest-Free Bank(s)

PU – Perceived Usefulness

PEOU – Perceived Ease of Use

TAM – Technology Acceptance Model

TPB – Theory of Planned Behavior

UTAUT – Unified Theory of Acceptance and Use of Technology

USSD – Unstructured Supplementary Service Data

VIF – Variance Inflation Factor

Abstract

The factors that influence customers' digital banking adoption decisions in interest-free banks were explored in this research with the digital literacy, customer trust, customer awareness and preference for cash as variables. A quantitative cross sectional survey design was employed in the study and it targeted the customers of Bethel Ansar Branch of Hijra Bank in Addis Ababa, Ethiopia. Data were gathered from 120 customers, analyzed through descriptive statistics, reliability analysis, correlation and multiple linear regression, using a structured questionnaire. Overall, the regression model was significant, explaining a fairly large amount of the variance in digital banking adoption. Both digital literacy and customers' trust were factors that positively influenced adoption, with trust having the greater influence. Customer awareness did not have significant influence on adoption, whereas cash preference had significant positive association with adoption which was opposite to the hypothesized direction. The qualitative results showed that customers primarily use Hijra Bank's digital services to make balance enquiries, cash withdrawals and deposits, but they like to pay out and withdraw money using cash. The study finds that digital literacy and customer trust are the main motives for digital banking adoption in an interest-free banking context, while the preference for cash also influences digital banking adoption behavior in the Ethiopian context.

Keywords: Digital Banking Adoption, Interest-Free Banking, Digital Literacy, Customer Trust, Cash Preference

Chapter One

Introduction

1.1 Background of the Study

The banking sector has been greatly transformed by the rapid advancement of information and communication technology in the world. Digital banking enables customers to access financial services from anywhere, anytime, without the need to travel to physical branches, which has revolutionised the way banks provide financial services. Digital banking has facilitated better operational efficiency, lower transaction cost, greater accessibility of services and improved convenience for customers in developed and developing countries (Joshi et al.; Kazmi & Hashim, 2015). Banks everywhere are therefore adopting digital technologies to stay competitive, enhance customer experiences, and increase financial inclusion.

The growing digitalization of banking services has also restructured and made the financial sector more competitive. The use of digital banking platforms has transformed the modern banking system by enhancing efficiency, profitability, customer satisfaction, and competitiveness in the market (Abu Al-Haija et al., 2025). Apart from the operational advantages, digital banking also helps financial institutions to cater to the needs of underbanked and unbanked populations and thus help meet the goal of financial inclusion. Son et al. (2020) also claim that digital banking has revolutionized the way customers interact with banks, ushering in a new era of lower transaction costs and greater access to financial services via digital and mobile platforms. Banks thus have no choice but to adopt digital transformation as a top business priority in the digital economies they serve.

In the context of digital transformation of the financial industry, Islamic and interest-free financial institutions are also making an increasing use of digital banking technologies to enhance service delivery and stay competitive. Interest-free banks do not accept interest for transactions but are based on the principles of Sharia which emphasize ethical financial intermediation. Islamic banking institutions are facing challenges and opportunities due to the development of digital banking. According to Sutikno et al., (2022), digital banking is an opportunity for Islamic banks to enhance customer convenience, speed up service delivery and increase outreach and outreach of the banks beyond physical branches. Likewise, Abu Al-Haija

et al. (2025) concluded that digital banking transformation has a positive impact on the profitability, efficiency, customer satisfaction and competitiveness of Islamic banks and enhancing financial inclusion by bringing access to the underserved customers.

While digital banking is rapidly becoming a growing segment of the banking business, adoption rates vary from country to country and bank to bank. Many studies have found that the rate of success of digital banking relies on customers' willingness and capacity to adopt and continue using digital platforms. Theories that have been used extensively to understand customer adoption behaviour are the Technology Acceptance Model (TAM) (Straub, 2009); the Unified Theory of Acceptance and Use of Technology (UTAUT) (Rogers et al., 2005); and the Diffusion of Innovation (DOI) theory. These theories state that customer perceptions, attitudes, social context, trust, habits, awareness and perceived usefulness of technology affect technology adoption.

Research in various countries has come up with several critical factors that influence the adoption of digital banking.A number of empirical studies have been carried out in various countries that have identified some important determinants of digital banking adoption. In Saudi Arabia, Alnemer (2022) discovered that perceived usefulness and perceived ease of use have a significant impact on digital banking adoption, with trust also showing a significant impact on customer behavior. In line with this, Legass and Durmuş (2024) conducted a study on the adoption of Islamic mobile banking in Ethiopia, and revealed that perceived usefulness, perceived ease of use, perceived advantage, and trust can positively influence the Islamic mobile banking adoption behavior of Islamic bank customers. A similar study in Jordan (Alwan & Al-Zu'bi, 2016), Nigeria (Esendemirli et al., 2024; Awoniyi, 2022), Vietnam (Nguyen et al., 2020), Nepal (Nepal & Nepal, 2023), and India (Sharma & Kumar, 2025) also found that customer-related factors like trust, awareness, digital literacy, facilitating conditions, habit, and perceived usefulness have significant impacts on digital banking adoption.

Digital literacy is one of the factors related to customers that are often mentioned in literature and has become of greater importance in the world of digital banking. Digital literacy is the capacity of customers to access, comprehend and utilize digital technologies and internet financial services effectively. Sharma and Kumar (2025) concluded that digital literacy has a significant impact on the intention of customers to utilise online banking services in India.

Likewise, research in Ethiopia and other developing countries suggests a lack of digital skills is a significant challenge for digital banking adoption, especially for customers that have less exposure to technology (Hayat Nesibu; Bekele, 2015). Customers with a lack of digital skills could experience challenges in accessing and using digital platforms effectively, as banking services become increasingly digital.

In digital banking literature, customer trust is another key factor that is often stressed. Customers' trust in the security, reliability, and credibility of digital platforms significantly impact their adoption. Digital banking is a process that involves online transactions and exchange of sensitive financial information, and therefore, people's trust in the security, reliability and credibility of digital platforms plays a significant role in the adoption decision. Alnemer (2022) stated that trust is a key factor in digital banking, and Alwan and Al-Zu'bi (2016) found that customer trust is one of the most important factors influencing the adoption of internet banking in Jordan. Similarly, Esendemirli et al. (2024) found that perceived trust has a significant influence on the adoption of digital banking among the youth customers of the Nigerian financial system. Likewise, the results of Sofyani and Darma (2023) showed that the positive relationship between application efficiency and data security with customers' willingness to continue using Islamic banking apps.

Awareness of the customer has also a significant influence on adoption behavior. Awareness is about the information and understanding that customers have about all the digital banking services, their advantages and how they are used. A number of studies have shown that customers can be hesitant to try digital banking due to a lack of knowledge regarding the services offered and their benefits. Joshi et al's study revealed that despite the shift in perception on digitalization, many customers are still in the process of adapting to digital banking technologies. The low level of public awareness of Islamic banking services was also identified as one of the main problems facing sustainable and expansion of interest free banking by Sultan (2023) based on his study on the condition of Islamic banking in Hijra bank in Ethiopia. This implies that awareness campaigns among the customers and education efforts must be implemented to raise adoption levels.

Another important factor influencing digital banking adoption is customers' preference for cash transactions. For many developing countries, customers are still predominantly cash users mainly

because they are not used to using technology, especially for transactions, they don't feel comfortable or safe with it, or they just have gotten used to the way things are. If customers are a big bet on cash, they might not be keen to make the move to online banking solutions. Individuals will embrace innovations in a gradual manner that is dependent upon the compatibility of the new technology with their current existing habits and lifestyles. (Rogers 2003). Similarly, research on digital banking adoption has indicated that customers who are more oriented towards traditional banking practices are less likely to adopt digital banking channels rapidly (Dash et al., 2014).

While there is a vast body of literature available on the adoption of digital banking at global levels, empirical evidence, which specifically centers on customer-level determinants in the context of an interest-free banking system in Ethiopia is still limited in use. The existing studies done in Ethiopia have concentrated on conventional banking institutions, general technology acceptance model, or general technological factors or organizational factors. For instance, Hayat Nesibu studied the variables of the extended Technology Acceptance Model (TAM) for mobile banking adoption in the Commercial Bank of Ethiopia, and Assefa (2022) investigated the adoption of branchless banking with sociocultural and trust-related factors. Legass and Durmuş (2024) studied the adoption of Islamic mobile banking while Legass et al. (2025) studied the satisfaction of customers with digital banking services in the field of Islamic banking.

However, there has been little empirical research to date on the interaction between digital literacy, customer trust, customer awareness, and cash preference on digital banking uptake in fully-fledged interest-free banks in Ethiopia. In addition, little research has focused on such customer level determinants in one institutional environment where customers are both in the same technological and organizational context. This leaves a knowledge gap on the factors explaining the adoption behavior difference between Ethiopian interest-free banks' customers.

Furthermore, the Ethiopian interest-free banking sector is still developing the regulatory and institutional framework, which is also evolving. According to Jarra (2024), the Ethiopian banking laws have been formulated more for conventional banking systems based on interest rather than interest free banking systems. In the same vein, Tewabe (2023) observes that the financial technology regulatory context in Ethiopia is still disjointed and inadequate. The

structural issues could have indirect implications on customer confidence, digital banking growth and technology adaptation in interest-free banks.

To enhance customer convenience and competitiveness, Hijra Bank, one of the fully fledged interest free banks in Ethiopia has been progressively incorporating digital banking service. Data collected from the 2025 headquarters digital banking department of Hijra Bank shows that the bank has a total of more than 1.1 million customers in 160 branches, including 33 branches located in Addis Ababa. The bank has 429,027 mobile banking users, nearly 100 internet banking users, 69,573 ATM card holders and 571,833 USSD users. The figures reveal that although digital banking is offered to a large proportion of customers (more than 1.1 million), the number of customers using these services is not close to the total number of customers. But, the degree of digital banking adoption by customers can't be explained by the availability of services. The previous literature on technology adoption indicates that personal customer attributes and beliefs are important in the adoption and ongoing use of digital banking services by customers. Digital literacy, trust, awareness, and behavioral preferences can impact customers' willingness and ability to use the digital banking platforms available to them. Hence, an analysis of the customer-level determinants seems to be an adequate way of understanding the differences in digital bank adoption across customers of interest-free banks.

The focus of this study is thus to look into the determinants of customer adoption of digital banking in interest-free bank at hijra bank, Ethiopia that include customer-level determinants such as digital literacy, customer trust, customer awareness and cash preference. This study aims to add to the existing literature on adoption of digital banking in Islamic banking and interest-free banking systems by providing empirical evidence on the relative importance of those factors that are related to customers. Further, the results will have potential practical implications for bank managers and policymakers on promoting the use and utilization of digital financial services in Ethiopia.

1.2 Statement of Problem

The banking sector around the world is in the midst of digital transformation, with financial institutions leveraging digital technologies such as Internet banking, mobile banking, automated teller machines (ATMs) and other platforms to increase efficiency in service, cut down on operational costs, boost the convenience of their customers and drive financial inclusion (Daniel,

1999; Alnemer, 2022). Digital banking allows customers to transact financial services anytime and anywhere, moving away from reliance on visiting banks and changing the nature of banking to a more technologically oriented service model (Joshi et al., n.d.; Awoniyi, 2022). Digital banking has grown increasingly relevant in today's market scenario, as the adoption of digital banking is becoming an important concern as it is the success of digital banking that depends on customer willingness and ability to use digital platforms effectively (Son et al., 2020).

Though the relevance of digital banking is rising, adoption rates are not uniform across countries and institutions, especially at low levels in developing economies, due to infrastructural deficits, low levels of digital literacy, limited awareness, distrust of digital banking, and high cash transaction dependency (Molla & Licker, 2005; Chakraborty & Joseph, 2017; Bekele, 2015). As per past studies, customer related factors play a major role in the adoption of digital banking. Published studies based on Technology Acceptance Model (TAM) have shown that, perceived usefulness and perceived ease of use have a strong influence on customers intention of accepting digital banking technologies (Alnemer, 2022; Awoniyi, 2022; Riza, 2019). The trust, awareness, facilitating conditions, and digital literacy are also important factors that influence customer adoption behavior, as highlighted by other studies (Esendemirli et al., 2024; Sharma & Kumar, 2025; Nepal & Nepal, 2023). Furthermore, in many developing nations, the use of cash transactions remains dominant, and customers' traditional usage patterns, security worries, and lack of knowledge about digital financial systems (Sathye, 1999; Rogers, 2003) have led them to continue using cash.

In Islamic and interest-free banking, additional challenges exist for the adoption of digital banking. In the face of competition, the use of digital platforms is becoming a common tool for interest-free banks to enhance their services and increase financial inclusion (Abu Al-Haija et al., 2025). Research findings in Islamic banking environments show that the perception of convenience, trust, usability, and service efficiency are factors affecting the adoption of digital banking by customers (Suhartanto et al., 2019; Sofyani & Darma, 2023). Digital transformation is thus considered as a strategic priority for interest-free banks as it allows them to reach customers scattered in geographical areas that were not easily reachable before and offers a more efficient operation as well as a higher level of customer satisfaction (Abu Al-Haija et al., 2025; Sutikno et al., 2022). However, there are still problems that conventional banks have to deal with

regarding the readiness of customers, the adoption of technology, competition, and digital infrastructure (Sutikno et al., 2022; Yunita, 2021).

Despite the growth of mobile technologies and an expanding digital financial services landscape, very few people in Ethiopia have adopted digital banking products (Bekele, 2015). The banks have made considerable investments in the mobile banking, internet banking, ATM services and branchless banking systems, but customers' utilization of these services have not been as expected (Gardachew, 2010; Nesibu, 2019). Current research indicates a number of adoption challenges, such as lack of awareness, digital literacy, perceived risk, lack of trust, infrastructure limitations or reluctance to abandon conventional banking practices (Nesibu, 2019; Bekele, 2017). In addition, the financial technology regulatory landscape in Ethiopia is still evolving and fragmented, which further hinders the growth of digital banking in the country (Tewabe, 2023).

The challenge is even more pronounced in the interest free banking industry in Ethiopia.It is especially important in the interest free banking industry in Ethiopia. To meet the needs of customers who would like banking services that are consistent with their religious convictions and financial preferences, banks were permitted to offer interest-free banking. The Ethiopian banking legislation, however, was enacted based on traditional banking concepts and has not been sufficiently adapted to the interests-free banking institution environment (Jarra 2024). This leaves interest-free banks with institutional and operational obstacles to expand their digital financial services. Meanwhile, these banks are faced with increasing pressure on their digital transformation efforts (Sultan, 2023) to remain competitive and modernize their services.

Hijra Bank, Ethiopia's first fully operational interest free bank, has rolled out several digital banking initiatives such as mobile banking, Internet banking, ATM banking, USSD banking and other digital financial services to meet the needs for convenience and ease of doing business. Data from Hijra Bank's headquarters digital banking department (2025) shows that the bank has over 1.1 million customers in 160 branches across the country. The number of customers actively using the digital banking services, however, is still significantly lower in number compared to the customer base. The bank has got an estimated 429,027 Mobile Banking users, 69,573 ATM Cardholders and 571,833 USSD users. The above numbers indicate that digital banking services are offered, but not all customers are using them, and that some customers are affected by factors that affect their adoption behaviour.

While there are international and local studies on digital banking adoption, there are key gaps in the empirical studies. First, most of the studies were done in conventional banking institutions, and only a few of the studies have examined the Ethiopian interest-free banking institutions. Second, previous studies have often focused on technological, organizational and regulatory elements, and neglected to consider the customer-level determinants that directly impact adoption. Third, few empirical studies have been conducted to test the interaction of DLA, CT, CA and cash preference in a single analytical model. Lastly, although Hijra Bank has become a crucial player in Ethiopia's interest-free banking system, there is limited empirical research that examines factors that influence the adoption of its digital banking services by customers. Consequently, there is not enough evidence to inform management and policy interventions that can help with the promotion of digital banking usage among the customers of interest-free banks.

That is why this study focused on the determinants of customer adoption of digital banking in the case of Hijra bank in Ethiopia to fill the identified gaps in the literature. The study, in particular, examines the effect of digital literacy, customer trust, customer awareness and cash preference on digital banking adoption. The study is expected to add to the existing literature and will give practical implications to the bank managers and policy makers who are interested in improving the utilization of digital banking and digital financial inclusion in Ethiopia, by providing empirical evidence on the relative importance of these customer level factors in an interest free banking context.

1.2 Research questions

1.2.1. General Research Question

How much do the customer related factors (Digital Literacy, Customer trust, Customer awareness, Cash preference) affect the adoption of digital banking by customers of Hijra Bank, Bethel Ansar branch Addis Ababa?

1.2.2. Specific Research Questions

1) How much is the impact of digital literacy on digital banking adoption of Hijra Bank customers in Bethel Ansar branch of Addis Ababa?
2) How much is customer trust playing a role in the adoption of digital banking among Hijra Bank's customers in Bethel Ansar branch, Addis Ababa?

3) How much does customers' awareness of digital banking vary in Bethel Ansar Branch, Addis Ababa in the case of Hijra Bank?
4) How much cash preference has an impact on digital banking adoption by the customer of Hijra bank Bethel Ansar branch, Addis Ababa?

1.3 Research Objectives

1.3.1. General Objective

How much Digital Literacy, Customer Trust, Customer Awareness and Cash Preference affect the uptake of digital banking among the customers of Hijra Bank, Bethel Ansar Branch, Addis Ababa?

1.3.2. Specific Objective

1. To analyze the effect of digital literacy on the digital banking adoption of customers of Hijra Bank, Bethel Ansar Branch, Addis Ababa.
2. To analyze the effect of customer trust on digital banking adoption among customer of Hijra Bank, Bethel Ansar Branch, Addis Ababa.
3. To understand how customer awareness affects switching to digital banking among Hijra Bank customers in Hijra Bank, Bethel Ansar, Addis Ababa.
4. To find out the effect of Cash Preference on Adoption of digital banking among the customers of Hijra bank, Bethel Ansar Branch, Addis Ababa.

1.4 Research Hypotheses

Drawing upon the Technology Acceptance Model (TAM), Diffusion of Innovation (DOI) Theory and the empirical results of previous research on digital banking adoption, the following hypotheses were formulated to guide this study:

H1: Digital literacy positively and significantly affects digital banking uptake among Hijra Bank's customers at Bethel Ansar Branch, Addis Ababa.

H2: Customer trust positively and significantly affects digital banking usage of Hijra bank customers in Bethel Ansar branch, Addis Ababa.

H3: The authors found that customer awareness has a positive and significant influence on digital banking adoption among Hijra Bank customers from Bethel Ansar Branch of Addis Ababa.

H4: The cash preference negatively and significantly impacts the adoption of digital banking services among the customers of the Hijra Bank, Bethel Ansar branch in Addis Ababa city.

These hypotheses can be formulated directionally, and have been confirmed by both theory and experiments. The digital literacy is expected to help customers access and effectively use digital banking services. The result is that customer trust should boost their confidence in the security and reliability of digital banking platforms, while customer awareness should enhance their understanding of the services they can access and the benefits thereof. On the other hand, a higher preference for cash transactions would be likely to diminish customers' willingness to take up digital banking solutions as it would reinforce the use of conventional transaction approaches.

1.5 Significance of the Study

This study will have significant contributions to theory, managerial practice, policy making, financial inclusion, and future research. The study aims to examine the relationship between customer-related factors (namely digital literacy, customer trust, customer awareness, and cash preference) and customer adoption of digital banking services at Hijra Bank, Bethel Ansar Branch, Addis Ababa.

1.6.1 Theoretical Significance

The research has several contributions to the existing literature on the adoption of digital banking. First, it takes a customer level perspective, as the technology adoption process is a social/behavioural process influenced by individuals' perceptions, experiences, and attitudes towards technology (Straub, 2009; Rogers et al., 2005). This customer-centric approach helps to understand better which factors contribute to the differences in the uptake of digital banking among customers.

Second, the study investigates and extends the use of the Technology Acceptance Model (TAM) and Diffusion of Innovation (DOI) Theory at the customer level determinants of digital banking adoption in interest-free banking in Ethiopia; namely, the effect of digital literacy, customer trust, customer awareness and cash preference on digital banking adoption behavior. These theoretical models have been extensively used in traditional banking research but applied empirical research on the applicability of these models in fully-fledged interest-free banking institutions in Ethiopia are limited.

Third, the study fills an important void in the banking literature in Ethiopia. It is important to highlight that the banking law in Ethiopia is framed for conventional banking, and is not appropriate for the unique nature of interest-free banking, as Jarra (2024) noted. The study contributes to the overall discussion on digital financial services and financial inclusion in Ethiopia through examining the customer-level factors that influence the adoption of digital banking in this setting.

Lastly, it had introduced a wider perspective for traditional banking research by expanding it to the Islamic and interest-free banking sector, which is a relatively new and emerging sector in the banking industry (Awoniyi, 2022; Alnemer, 2022; Sharma & Kumar, 2025; Suhartanto et al., 2019).

1.6.2 Practical Significance

In addition to its theoretical findings, the study has practical implications for bank management, policy makers and financial-inclusion programs in general, and for further research.

The study highlights several factors associated with the customer that play a crucial role in shaping digital banking acceptance among customers and recommends specific managerial focus points and strategies for managers of Hijra Bank and other interest-free banking institutions. Digital literacy findings can inform the design of customer education programs, digital training, and the design of user-friendlier digital banking platforms as digitally literate customers are more likely to use and better adopt digital financial services (Nepal & Nepal, 2023; Sharma & Kumar, 2025). The results of the customer trust analysis can be applied in strengthening security measures and communicating about the reliability of digital banking products, as trust is always known to be one of the most influential factors in digital banking adoption (Esendemirli et al., 2024; Alnemer, 2022). The results of the customer awareness can be used to measure the level of awareness building contribution to the adoption when compared with other actions like trust building, and digital literacy programs (Bekele, 2015; Sultan, 2023; Nepal & Nepal, 2023). Findings on cash preference can also provide guidance for managers on customer transaction behaviour and the design of digital strategies to suit the usage of cash, while also not discouraging the adoption of digital transaction methods — something that is especially relevant in economies where cash remains important in daily transactions, such as Ethiopia. All these

together can inform managers to better allocate resources in the creation of digital banking interventions.

The study provides evidence for the policymakers, regulators, and other stakeholders who are defining the future of Ethiopia's financial sector by encouraging digital financial services and enhancing financial inclusion in the interest-free banking sector. Considering the fact that the Ethiopian banking law was not drafted to support interest-free banking and the regulatory framework for fintech is still in its formative stage and is disorganized (Tewabe, 2023; Jarra, 2024), the findings of this study can be used to inform the design of policies specific to digital banking in interest-free banks. When digital literacy and customer awareness are proven to be drivers for digital adoption, the findings can also be used to inform national digital literacy initiatives and awareness campaigns for various customer groups (Sultan, 2023; Setiawan & Rahmiati, 2023).

Financial inclusion is the study's message from a financial inclusion perspective: the banking system caters for a significant portion of the Ethiopian population, which desires financial services that are in sync with their religious and financial inclinations. Digital banking can also reach out to the financial services to customers who are unable to access them due to geographic or service limitations and improve the accessibility of financial services to these customers, hence the key aspects that influence digital banking adoption, such as digital literacy, trust, awareness, and preference for cash can be considered to design more inclusive digital banking solutions (Tiwari, 2021; Bekele, 2017).

Finally, the study's methodological contribution is the identification of how the customer-level analysis can be used in a single-bank research environment, where organizational and technological factors are considered as contextual variables and not as focused variables (Yin, 2014; Straub, 2009). This analytical framework can serve as a reference for subsequent studies on the adoption of technology in interest-free and related financial services, and can be replicated, extended or adapted within various institutions, regions, and customer groups. Additionally, the research showcases how open-source tools, such as Python for statistical analysis, can be leveraged within the Google Colab platform, highlighting their practical applications in quantitative research within the banking and finance sector. These contributions suggest further research directions that involve comparing the performance of different interest-

free banks, longitudinal research investigating adoption behavior, qualitative research identifying adoption barriers, as well as cross-cultural/ cross-institutional research comparing digital banking adoption (Legass et al., 2025; Sofyani & Darma, 2023).

1.6 Scope of the Study

It is interesting to note that the results of this research would have a methodological and future research significance.

The study is also of methodological value as it shows the application of the customer level analysis in a single bank research. The study tries to shed light into the factors that influence customers in digital banking without putting them into the context of organizational and technology factors, which can be beneficial to investigate when studying digital banking in a specialised banking context as noted by Yin (2014) and Straub (2009).

Moreover, the study gives directions to the upcoming researchers who want to study the adoption of technology in the context of any interest-free banking and related financial sectors. It is possible to replicate, extend and/or modify the analytical framework used in this study for another investigation with other geographical areas, other customer groups, or other banking institutions. The study also provides a practical demonstration of the application of Python, an open source analytical tool, in a quantitative study in banking and financial research, demonstrating the utility of such tools in banking and financial studies.

Last, the research provides avenues for future studies, such as cross-institutional analysis to interest-free banks, longitudinal studies for analysing the acceptance behavior of users and qualitative studies to analyze the causes of not accepting digital banking, as well as cross-cultural analysis for understanding digital banking adoption across different cultural and institutional boundaries (Legass et al., 2025; Sofyani & Darma, 2023).

1.7 Limitation of the Study

There are some limitations to this study that need to be noted when interpreting the results of this study.

The study focuses on the customers of Hijra Bank, Bethel Ansar Branch, Addis Ababa first. Therefore, the results are not necessarily generalizable to other branches of Hijra Bank and to

other interest-free banking institutions or other rural and semi-urban customers of Ethiopia where access to digital infrastructure and banking and technological exposure could be very different. So results should be taken with the caution that they are specific to the customers of Hijra Bank, Bethel Ansar Branch, Addis Ababa.

Secondly, the study uses a single bank and single branch case study design. This method gives the possibility of a detailed analysis of customer-level determinants of digital banking adoption in a particular institutional environment but restricts comparison of digital banking adoption across different banks, branches and institutional environments. Other financial institutions that have no interest in the banks may have varying technological capabilities, managerial practices, customer service systems and strategic priorities that might affect digital banking adoption in various ways.

Thirdly, the study only considers the determinants of digital banking adoption from the customers' perspective (digital literacy, customer trust, customer awareness, and cash preference). The contextual conditions (technological, organizational, regulatory, and socio-cultural) are considered as conditions that affect the explanation, and are not themselves variables. While this is in line with the analytical framework and the Technology Acceptance Model (Davis, 1989) used in this study to analyse the customer's actions, it does not directly examine the impacts of the following factors on digital banking adoption behaviour: ICT infrastructure, internet quality, regulatory frameworks, organizational readiness, and institutional support.

The fourth is the study design (cross-sectional research design) that the data was gathered only once. Therefore, the results presented here are based on the customers' perception and adoption behaviour during the time of data collection. Customer attitudes towards digital banking could change over time as a result of new technology, regulatory developments, greater digital exposure, or changing customer experiences. Thus, the study cannot, with absolute certainty, make claims of long-term behavioral changes or of causal inference, typical problems associated with cross-sectional study designs (Creswell, 2014; Saunders et al., 2019).

Fifth, the study is dependent on self-reported data from the questionnaire given to customers. This means that answers could be influenced by response bias, social desirability bias, and/or

self-assessment errors, including respondents' real digital literacy and the actual extent of their use of digital banking services. Measurement error may occur due to people inaccurately over- or under-estimating their knowledge, attitudes or actual behavior (Field, 2018).

Lastly, reliability analysis, descriptive statistics, correlation analysis, and Ordinary Least Squares (OLS) multiple linear regression are used to analyze the relationships between the study variables. Although they can be used for analyzing association and the effect of several predictors on digital banking adoption (Gujarati & Porter, 2009; Field, 2018), the results are still driven by the variables in the analytical model. This means that other factors that may be relevant may also affect the adoption of digital banking and were not accounted for in the research. Future research could explore more detailed definitions of the variables, other analytical methods, and wider research environments to give a fuller picture of digital banking adoption in an interest-free banking environment.

Even though some of these restrictions exist, the study has contributed substantially to the findings on the effects of digital literacy, customer trust, customer awareness, and cash preference on the adoption of the digital banking by the customers of Hijra Bank, Bethel Ansar Branch, Addis Ababa. The study is a valuable addition to the existing literature on digital banking adoption in the interest-free banking sector of Ethiopia, and has implications for managers, policy makers and future researchers.

1.8 Operational Definition of terms

- **Digital Banking:** Digital banking is the provision and use of banking products and services via electronic and digital channels, which allow customers to obtain financial services and conduct banking transactions without having to go to a branch of the bank. According to Daniel (1999), digital banking involves mobile banking, internet banking, Automated Teller Machine (ATM) services and USSD banking services offered by Hijra Bank.
- **Digital Banking Adoption:** Digital banking adoption is the degree to which customers embrace, use and incorporate digital banking products and services into their daily banking. For this study, it is determined by customer self-reports on their adoption and use of digital banking services, including mobile banking, internet banking, ATM and USSD banking services (Davis, 1989).

- **Interest-Free Banking:** Interest-free banking is a banking system that is based on Sharia concepts that forbid the payment or receipt of interest (riba). It does not engage in interest-based transactions, but rather in profit-sharing, trade-based financing or other Sharia-compliant financial transactions. Interest-free banking in Ethiopia is being run in the context of the banking system, with rules and regulations set by the National Bank of Ethiopia (Jarra, 2024).
- **Digital Literacy:** Digital Literacy refers to customers knowledge, skills and confidence in using digital devices and digital banking platforms effectively (Sharma & Kumar, 2025).
- **Customer Trust:** Customer trust is the consumer's confidence that digital banking is safe, dependable and can ensure protection of financial and personal data. According to this study, customers' trust is based on Hijra Bank's digital banking services being safe, reliable, and transparent (Alnemer, 2022).
- **Customer Awareness:** The level of knowledge and understanding that customers have about the availability and benefits, features and usage of digital banking services. Based on the Hijra Bank's services, the customer awareness in this study is the knowledge of customer regarding the Digital banking services offered by the bank (Sathye, 1999).
- **Cash preference:** Cash preference is the tendency of an individual towards physical cash transactions instead of digital/electronic transactions. The relationship of cash preference in this study to customer attitude and behavioural tendency to use cash in financial transactions, as discussed by Rogers (2003), has been expressed.
- **Technology Acceptance Model (TAM):** Technology Acceptance Model (TAM) was presented by Davis (1989) to explain the acceptance and adoption of technology by users. This technology adoption model (Davis, 1989) consists of perceived usefulness and perceived ease of use, as they affect the behavior intention and actual use of technology among users.
- **Automated Teller Machine (ATM):** Automated Teller Machine (ATM): An Automated Teller Machine (ATM) is a machine used for banking which allows customers to make financial transactions with no need to interact with bank personnel face-to-face (Daniel, 1999).

- **USSD Banking:** USSD banking or Unstructured Supplementary Service Data is a mobile banking service that lets the users of mobile phones use banking services without having to use internet. This is especially valuable for places where the use of a smartphone or access to the internet is restricted (Tewabe, 2023).
- **Ordinary Least Squares (OLS) regression:** Ordinary Least Squares (OLS) regression is a statistical method that is used to study the relationship between one dependent variable and one or more independent variables by attempting to estimate values for the coefficients that minimize the sum of squared residuals (Gujarati & Porter, 2009).

1.9 Organization of the Thesis

This thesis consists of five chapters.

The first chapter contains the introduction of this study. It contains background of the study, statement of the problem, research questions, research objectives, research hypotheses, significance of the study, scope of the study, limitations of the study, definition of key terms and organization of the thesis.

Chapter Two summarizes the theoretical, conceptual and empirical works that are relevant to the study of digital banking adoption. The chapter talks about the concepts of digital banking, interest-free banking and customer adoption behaviour. It also analyzes the Technology Acceptance Model (TAM) and other theories and literature reviewed, research gaps, and the conceptual framework of the study.

In the study, the researcher used the research methodology, the results of which are described in Chapter Three. The chapter includes topics on research approach, research design, study area, target population, sampling techniques, sampling size determination, data sources, data collection instruments and procedures, the measurement of variables, the assessment of validity and reliability, data analysis or modeling, statistical analysis procedures and ethical aspects.

The data analysis, interpretation and discussion with the customers of Hijra Bank, Bethel Ansar Branch, Addis Ababa is presented in chapter four. It additionally contains information about the respondent's demographic characteristics, descriptive statistics, reliability analysis, diagnostic tests for regression assumptions, correlation analysis, multiple regression analysis, and discussion about findings relative to the study objectives, hypotheses and literature.

The summary of major findings, conclusions, and recommendations of the study are summarized in Chapter Five. The chapter also covers theoretical, managerial and policy implications of the results and offers suggestions and recommendations for further research.

Chapter Two

Review of Literature

2.1 Introduction

This chapter summarizes the literature in theoretical, conceptual and empirical context discussing digital banking adoption with a special consideration on factors affecting customers' adoption behavior in interest free banking institutions. The aim of the chapter is to lay the theoretical groundwork of the study, bring together a range of existing scholarly knowledge, and elicit potential knowledge gaps as well as a foundation for exploring the factors that determines the adoption of digital banking by the customers of Hijra Bank, Bethel Ansar Branch, Addis Ababa.

The chapter starts with literature that reviews the conceptual works related to digital banking, digital banking services, digital banking adoption, interest-free banking and customer adoption behaviour (Daniel, 1999; Bekele, 2015). These ideas serve as contextual framing principles for a grasp of the nature of digital financial services and what affects their use.

The chapter then discusses the key theories for technology adoption. The study places particularly emphasis on the Technology Acceptance Model (TAM) that is the main theoretical framework of the study (Davis, 1989). Moreover, recent theories that complement the technology acceptance literature and offer a better understanding of customers' adoption decision and behavioral intention in relation to digital technologies are briefly reviewed, including the Diffusion of Innovation (DOI) Theory (Rogers, 2003) and the Theory of Planned Behavior (TPB) (Ajzen, 1991).

Additionally, the chapter examines empirical research on digital banking adoption, with a particular emphasis on digital literacy, customers' trust, awareness about digital banking, and cash preference. Studies conducted in developing countries, Islamic and interest-free banking environment and the Ethiopian banking sector are focused upon as contextual background to the factors influencing customers' adoption of digital banking services (Alnemer, 2022; Sharma & Kumar, 2025; Nepal & Nepal, 2023; Suhartanto et al., 2019; Legass & Durmuş, 2024; Sultan, 2023).

Last but not least, the chapter analyzes the reviewed literature and introduces the research gap solved by the study, as well as conceptual framework of the study showing the hypothesized connections between digital literacy, customer trust, customer awareness, cash preference, and digital banking adoption. The theoretical and empirical context of this study is then derived from the literature reviewed in this chapter, and the research model and hypotheses analyzed in the next chapters.

2.2 Theoretical Literature Review

The present study is situated in the main framework of the Technology Acceptance Model (TAM), which is the prime model that has been applied in the explanation of customers' adoption of digital banking services. The study also utilizes the Diffusion of Innovation (DOI) Theory and the Theory of Planned Behavior (TPB) to get a more comprehensive grasp of adoption behavior. These theories can offer complementary viewpoints to understand how information about digital banking services is obtained, how perceptions of digital banking services are formed, and how decisions to adopt and use these services are made.

2.2.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was developed by Davis (1989) to attempt to explain and predict acceptance and adoption patterns of information technologies. The model was developed from the Theory of Reasoned Action to specifically predict the development of intentions to use technological systems followed by actual system use by model users. One of the most widely used theoretical frameworks for research into technology adoption is TAM, which has been widely adopted in research on internet banking, mobile banking, and other fintech services.

TAM revealed that the primary motivations that influence technology adoption are “perceived usefulness” and “perceived ease of use.” Perceived usefulness is the belief that technology will have a positive effect on the individual's performance, and perceived ease of use is the belief that using the technology will not involve any effort on the part of the user (Davis, 1989). These beliefs lead to users' attitudes and behavioral intentions, and these determine the technology usage of actual users.

Consumers will be more willing to use digital banking services if they believe that digital banking services: (i) offer convenience; (ii) are efficient; (iii) are accessible; and (iv) save time. Likewise, when customers think digital banking platforms are easy to learn, understand, and use, they are more likely to utilize these platforms. The relevance of TAM has been confirmed in numerous studies that relate to digital banking adoption in various countries and banking environments such as Alnemer (2022), Awoniyi (2022), Legass & Durmuş (2024).

The model highlights two variables (perceived usefulness and perceived ease of use), but some further influences on technology adoption have been added as a result of subsequent studies. It has been shown that user characteristics and contextual influences are also important in explaining the technology adoption process, especially in less developed economies, where readiness to adopt technology can differ among the various groups of customers (Venkatesh et al., 2003).

This study will explore four factors from the literature of technology adoption that could impact digital banking adoption: digital literacy, customer trust, customer awareness and cash preference. Digital literacy is an expression of customers' understanding and effective use of digital technologies. Customer trust is based on the assurance given by digital banking services with regard to their security, reliability, and integrity. Customer awareness is customers' awareness and understanding of the available digital banking and its benefits. Cash preference is when customers prefer to go with cash transactions instead of digital transactions. These may affect the willingness, readiness and ability of customers to use digital services in banking.

This study is therefore very relevant with the TAM, as it gives a solid basis on how the perceptions and individual characteristics of customers affect technology adoption behavior. The study is guided by a major theoretical framework referred to as TAM, which is why it focuses on customers' adoption of digital banking services.

2.2.2 Diffusion of Innovation (DOI) Theory

Rogers (2003) created the Diffusion of Innovation (DOI) theory as a means of understanding the growth and spread of innovations within a social system, over time. The theory emphasizes the processes by which people become aware of an innovation, consider its attributes, reach a

decision about whether or not to adopt, make the implementation decision, and finally, confirm their adoption decision.

Rogers (2003) identified five stages of the diffusion process: knowledge, persuasion, decision, implementation and confirmation. But before an individual can assess the potential benefits of an innovation, and make decisions about adoption, they must be aware of the innovation. The theory also posits that the perceived attributes of innovations (relative advantage, compatibility, complexity, treatability, and observability) have an effect on the adoption process.

DOI Theory is especially applicable to digital banking due to the nature of digital banking as a technological innovation which challenges the customers' traditional banking behaviors. Digital banking services are examples of technological innovations that need the customers to change the existing banking habits and adopt new modes of transaction, which is where the DOI Theory becomes relevant to digital banking. There is a close relationship between customer awareness and DOI as awareness and knowledge are the first steps of the innovation adoption process. Lack of awareness and information about beneficial aspects of an innovation decreases likelihood of consideration for adoption (Rogers, 2003).

The disparity in awareness, information access, communication channels and technological exposure can be a factor that could account for the differences in digital banking adoption among customers if this was the case in the Ethiopian banking context. Hence, DOI Theory presents valuable additional theoretical lenses for understanding customer awareness's impact on digital banking adoption behavior.

2.2.3 Theory of Planned Behavior (TPB)

Theory of Planned Behavior (TPB) was initially formulated by Ajzen (1991) that connects individuals' attitudes, subjective norms, and perceived behavioral control to their behavioral intentions and actual behaviors. The theory states that attitude towards the behavior, perceived social support for engaging in the behavior, and self-efficacy in terms of ability and resources are important factors in influencing the likelihood of behavior performance.

One reason that TPB is important to digital banking adoption is that customer decisions are not only determined by technology but also by their behavior and habits. When deciding whether a

new technology is going to be adopted, people tend to consider their habits, attitudes and prior experience with the technology before making a decision.

The theory is especially relevant for the study of the effect of cash preference on digital banking uptake. Those that are keen on cash transactions could become unfriendly to digital banking since cash is known, tangible and can be handled easily. The theory provides great insight into the use of cash preference in explaining the adoption of digital banking. Digital banking can be viewed differently by customers who prefer cash payments versus those who prefer electronic payments. Customers' behavioural attachment towards cash can impact their perception, evaluation and use of digital banking services. Hence, cash preference is an important behavioural determinant which can influence the adoption decision, with its direction and magnitude potentially differing across contexts and customer groups.

The behavioural tendency to use cash is also likely to affect customers' intentions to embrace digital banking technologies, particularly in lower-income nations like Ethiopia where cash usage is prevalent in many industries. As such, TPB complements TAM by offering a deeper understanding of the role of behavioral preferences and the transaction habits people have formed in their traditional bank transactions on digital banking adoption.

2.2.4 Summary of the Theoretical Foundations

This study is mainly supported by the Technology Acceptance Model (TAM) which involves the level of acceptance of a technology depending on the perceptions of customers and certain characteristics. The Diffusion of Innovation (DOI) Theory offers complementary perspective to the role of awareness and knowledge in the adoption process and the Theory of Planned Behavior (TPB) offers additional insights based on behaviors and preferences in the adoption process. These theories together form a well-documented theoretical framework to study the impact of digital literacy, customer trust, customer awareness, and cash preference on the adoption of digital banking by the customers of Hijra Bank.

The rest of the article reviews and theories the key ideas used in the study that are associated with the concepts of digital banking, interest-free banking and digital banking adoption.

2.3. Conceptual Literature Review

2.3.1 Concept of Digital Banking

Outline the concept of Digital Banking.

Digital banking is the modernisation of traditional banking functions and services that previously could only be accessed at a banking outlet. It includes the provision of banking services through electronic channels and digital platforms to customers to deposit and withdraw their banking without visiting a bank branch (Daniel, 1999; Alalwan and others, 2016). Digital banking is a dramatic change in how banking is delivered, moving financial transactions and customer interactions from the traditional branch environment to technology-based platforms that allow for financial transactions and interactions to be conducted from a distance, and in real time, with self-service. This is attributed to the use of Information and Communication Technology (ICT), customer convenience and speed, and the growing competition in the financial services sector. Digital banking is available for the customer around the clock, unlike traditional banking which only allows them to open a bank account at a banking institution and work there during office hours (Son and others 2020).

The concept of digital banking extends beyond merely providing online access to banking services. It is the use of digital technology in almost every facet of banking that is truly changing the way banks work and creating value for customers. Digital banking will refer to any system that customers can interact with digitally as well as the back-end systems powering transactions, account management, communications, security, and more. The main purpose of digital banking is to give customer banking experience without any hassle, efficiency, convenience and security while at the same time reducing the operational cost of the financial institution (Alnemer, 2022; Sharma and others, 2025).

Digital banking is also gaining increased importance in developing countries as means to expanding banking services to hitherto unbanked and financially excluded people. Digital banking levels the playing field and cuts down on transaction costs so financial institutions can access customers from areas where physical banking access is poor. The effectiveness of Digital Banking technologies adoption and utilization by customers, however, plays a vital part in the success of Digital Banking (Bekele, 2015; Jarra, 2024).

2.3.2 Digital Banking Service

Digital banking reflects a number of service channels, through which a consumer can engage with a bank for banking services without having to go to the bank's physical branches. These services offer the customers flexibility, convenience, speed, and accessibility while they are doing financial transactions.

Digital banking services are provided through a range of electronic channels allowing customers to access the banking product and engage in financial transactions without having to come into contact with a bank staff member. While they vary in technological demands, reach and offered services, each channel plays a role in enhancing the convenience, effectiveness and accessibility of banking services.

Mobile Banking

Mobile banking is banking using mobile applications on a mobile device or tablet that a financial institution offers. Mobile banking enables customers to carry out various processes, including checking their account balances, transferring funds, paying bills, buying airtime, and allowing them to manage their accounts remotely using their mobile devices (Legass and others, 2024; Nepal and others, 2023). With the proliferation of smartphones and mobile technologies, mobile banking is one of the fastest growing channels in digital banking around the world.

Mobile banking is very convenient, as the customer can avail the banking service anytime and anywhere with the assistance of the mobile network. The study revealed that perceived usefulness, perceived ease of use, trust, and digital literacy are significant factors influencing customers' willingness to use mobile banking services, reflecting the results from the previous studies conducted by Alnemer (2022) and Esendemirli et al. (2024). Mobile banking has also played a role in financial inclusion in the developing economies by helping to reach people who are not served within the traditional banking system.

Internet Banking

Internet banking is banking that is done with an Internet-connected computer or other electronic device using the electronic banking offices of a bank. As per Daniel (1999) Internet banking allows customers to use various banking services such as account management, fund transfers, bill payments, loan applications, and review of financial statements.According to Alalwan and

others (2016), Internet banking allows a user to perform a multitude of banking services, such as account management, fund transfers, bill payment, loan application, and financial statement reviews.

Internet banking can offer more extensive services and information on financial management as compared to mobile banking. But the requirement for internet banking is the availability of reliable Internet access and users need to be computer-literate. The studies showed that some of the major factors that influence customers' adoption of internet banking services include perceived usefulness and perceived ease of use (Alwan and others, 2016). Despite the gradual fall in its use, internet banking is still a vital digital banking channel for users who appreciate the benefits of a larger screen and more capabilities.

Automated Teller Machines (ATMs)

An automated teller machine (ATM) is an electronic banking machine that lets customers conduct financial transactions without the presence of bankers. ATMs allow customers to access basic banking services and features, including cashing in checks, checking their account balances, transferring funds, and even depositing cash electronically.

ATMs were among the leading digital banking technologies and are still a very integral part of banking systems today. They offer banking services to customers around the clock without closing. ATMs are still the most available digital banking channels in developing nations like Ethiopia, especially because some users without Internet access or without smartphones may use them. (Gardachew, 2010; Bekele, 2015). Convenience and service availability of ATMs have a significant impact on how bank customers perceive the convenience and quality of banking service.

USSD Banking

Unstructured Supplementary Service Data banking (USSD banking) is a mobile digital banking service which can be accessed by the customer via SMS or short service data steps on any mobile phone without the need for any internet connection. With these USSD codes and the guidance on the menus, citizens can access a variety of services, including checking their balance, transferring funds, paying bills and mobile money services.

The role of USDC banking is becoming crucial in developing economies where the rate of smart phone ownership and Internet penetration is relatively small. Unlike mobile banking applications, USSD banking can be accessed through basic feature phones, accessing it through this application enables greater reach to the population (Tewabe, 2023; Sultan, 2023). USSD banking has been increasingly pushed as a way to improve financial inclusion and bank access in both urban and rural areas, in Ethiopia.

2.3.3 Concept of Digital Banking Adoption

Digital banking adoption is a measure of acceptance and sustained usage of digital banking technologies and services by customers to transact financial services. The adoption process isn't just about customers taking up digital banking services and using them once, but adopting them over a longer period of time and regularly thereafter for use in their financial routines. (Davis, 1989; Rogers, 2003).

Digital banking adoption is a key research interest as the success of digital banking initiatives ultimately rests on the acceptance and usage of the digital banking solutions. Initial adoption occurs when the user first uses a product or service, while continued adoption can be defined as a sustained and regular use of a digital banking service.

Davis (1989) has developed one of the most widely used theory – Technology Acceptance Model (TAM), which is also one of the widely used theory to explain digital banking adoption. In TAM, perceived usefulness is the most important factor that influences customers' intentions to use new technologies and perceived ease of use is the second factor. Later, further models were developed which included more variables including trust, awareness, digital literacy, social influence, and perceived security (Alnemer, 2022; Sharma and others, 2025; Esendemirli and others, 2024).

The institutional context provided for the implementation of digital banking services can influence the customer's decision to accept the banking services in an interest-free banking action. The adoption of digital banking also relies on factors related to the customer that will affect customer's willingness and capability to use digital platform (Davis, 1989; Venkatesh et al., 2003). Thus, the digital literacy, customer trust, customer awareness and cash preference are

critical success factors in achieving digital banking adoption among interest-free bank customers (Alalwan et al., 2017; Malaquias & Hwang, 2019).

2.3.4 Interest-Free Banking

Islamic banking or interest-free banking is a banking system that practices Islamic banking and Islamic financial principles. The basic principle of interest free banking is that interest, or "riba," as it is known in Islam, is forbidden as it is considered to be unfair and a form of exploitation. Islamic banks do not earn profits on the basis of interest-based lending, but on profit sharing, trade financing, leasing, and other financial mechanisms that are allowed under Sharia (Tiwari, 2021; Hidayat and others, 2023).

The fundamental principles of interest-free banking are that of prohibition of interest, avoiding excess uncertainty (gharar), sharing of risks between the parties, and asset-based dealings and ethical banking practices. Islamic banks now are not allowed to finance activities that are deemed to be harmful or unethical within Islamic law, including gambling, alcohol and other sectors that are prohibited.

For example, Ethiopia has the legal basis for interest-free banking services since 2008, enabling conventional banks to provide conventional banking windows. However, the full-fledged banks which cater to Sharia compliant financial services were established in the form of interest-free banks following this, such as Hijra Bank. Although this progress, there remain challenges in this interest-free banking sector in Ethiopia that impact the growth of interest-free banking services, which include the regulatory frameworks, public awareness, and technological infrastructure and operational systems (Jarra, 2024; Sultan, 2023).

2.3.5 Digital Banking In Interest-Free Banks

Digital banking in an interest-free bank is the delivery of digital banking services using mobile banking, Internet banking, ATMs, USSD banking, etc., in a way that is consistent with Sharia principles. Interest-free banks are increasingly looking to the digital banking technologies to deliver better services, boost operational efficiencies, cut transaction costs and stay competitive in the financial services industry.

But Islamic banking does have unique operational and regulatory challenges as all digital financial products and transactions are required to meet Sharia standards. This impacts digital

banking systems design, transaction structures, communication with customers, and service delivery systems (Tiwari, 2021; Hidayat and others, 2023). For instance, financing products provided via digital channels should not be based on interest and should be in accordance with the Islamic contractual rules.

In interest-free banks, digital banking offers customers easy access to banking services via mobile banking, internet banking, ATM services and USSD. Customer uptake of these services is shaped by customer perception and interaction with digital technologies as is the case in traditional banking settings. Research indicated that various factors like perceived usefulness, perceived ease of use, trust and consumer awareness can all impact digital banking service adoption in different banking environments (Davis, 1989; Venkatesh et al., 2003; Alalwan et al., 2017).

In recent years, important findings from the previous literature in digital banking studies in both conventional and interest-free banking environments show that digital banking adoption is influenced by customer-related factors like digital literacy, customer trust, customer awareness, and behavioral preferences (Malaquias & Hwang, 2019; Sharma et al., 2025). Having good digital skills helps customers use digital platforms and services more readily and effectively, and trust in the security, reliability and credibility of digital banking systems increases customers' willingness to use digital transactions (Alnemer, 2022; Nepal et al., 2023). In the same way, knowledge of digital banking products and services can improve customers' understanding of the use of digital channels and influence decision-making on their use (Bekele, 2015; Sultan et al., 2023); but its effect can differ by institutional and demographic factors. In addition, customers who prefer cash payments will be less likely to use digital banking services, while customers who are comfortable with cashless payments will be more likely to use digital banking services (Esendemirli et al., 2024).

Therefore, knowing these determinants at the customer level becomes key to increase digital banking adoption in interest-free banks.

2.3.6 Customer Adoption Behavior

Customer adoption behavior is the adoption decision process whereby individuals choose to accept and use, or not, and continue or not continue use of a specific product, service or

technology. Customer adoption behaviour in the digital banking is the customers' decisions about the use of digital banking platforms; mobile and internet banking, ATMs, and USSD banking services for their financial transactions (Rogers, 2003; Straub, 2009).

Adoption behaviour of customers is caused by psychological, social, technical and contextual factors. Advocating the adoption process usually entails a number of phases: Awareness, Interest, Evaluation, Trial, Adoption, and Ongoing Use. Before customers consider digital banking, they make comparisons based on the risks, convenience, benefits, and compatibility of digital services.

We identified some previous studies that found certain aspects related to the customers that significantly affect their digital banking adoption behavior. Digital literacy has the ability to improve customer competency to handle digital technologies effectively and confidently (Nepal and others, 2023; Sharma and others, 2025). Trust helps to diminish perceived risks when making electronic financial transactions and provides customers with more confidence on digital banking systems (Esendemirli and others 2024; Alnemer 2022). Another critical element is customers' awareness because customers can't and won't use services of which they know little or nothing of, or understand the nature of the services (Bekele, 2015; Sathye, 1999). However, customer opinions about using cash are also ingrained (Rogers, 2003; Ajzen, 1991), and with more frequent use of cash, there will be less inclination to switch to alternative digital financial services.

While the factors described previously can impact customer adoption behavior in developed economies, these issues can also play a role in developing economies like Ethiopia, where customer populations may not be entirely technologically literate, security concerns are less developed, and the use of cash is prevalent. It is therefore key for banks to have a grasp of these factors, which should be taken into account at the customer level, to be able to change the way digital banking works and enhance access to financial services.

2.3.7 Digital Literacy and Digital Banking Adoption

Digital literacy is enabling an individual to access, understand, evaluate and effectively use digital technologies and electronic platforms for different purposes. From the banking perspective, digital literacy refers to customers' knowledge, skills, and confidence in handling

digital devices and technologies like mobile banking apps, internet banking services, ATMs, and USSD services (Sharma & Kumar, 2025). Digital literacy is becoming a necessary pre-requisite for the effective engagement with digital financial systems in the transition of banking services towards digital platforms.

The digital literacy significantly contributes to driving customers' acceptance of digital banking services. Customers who are able to use digital banking platforms, understand procedures for transactions, deal with small problems and make good use of banking resources have generally a better ability to handle the digital banking interfaces. On the other hand, there might be some customer who lacks digital literacy and they will struggle to understand digital platforms, which will cause uncertainties, frustrations, and hesitation in accepting digital banking services (Nepal & Nepal, 2023).

According to the "Technology Acceptance Model, customers are more inclined to accept technologies that they believe are easy to use and useful. Digital literacy has a direct impact on these perceptions across a range of ways, including improving customers' competency with digital banking systems to interact with them confidently and efficiently (Davis, 1989). Tilting the adoption of digital banking service is likely to be more achievable where the customer fetishes sufficient digital knowledge to understand its ease, efficiency, and utility.

Studies conducted in previous times have always been found a positive correlation between digital literacy and digital banking adoption. Those who are digitally literate are more likely to accept and use digital financial services as they are better able to grasp and operate digital technologies (Sharma & Kumar, 2025 Nepal & Nepal, 2023). Digital literacy is considered one of the most critical success factors for digital banking adoption in developing economies where the there is a huge divide between the knowledge of technology experts and regular citizens.

Digital literacy is crucial in the digital banking context because customers need to have the required technology skills to effectively use digital banking channels in the context of Ethiopia's interest-free banking sector. In this sense, it is tempting to infer the positive relationship as between digital literacy with digital banking adoption among customers of Hijra bank.

2.3.8 Customer Trust and Digital Banking Adoption

Customers' trust and willingness to use digital banking continues to grow stronger.

Customer trust is the level of trust that the customer has in the security, reliability, integrity, and dependability of digital banking services. Digital banking is characterized by a shift in how trust is measured in banking IT systems, shifting from customers' trust in a physical bank to their trust in digital banking platforms. Alnemer (2022) suggests that trust is based on customers' understanding that digital banking platforms will be reliable and do what they are designed to do, that they will protect the privacy they have given to the bank, and that they will carry out transactions accurately and securely. In digitale finanista isa is important because dealing with digital financial services often doesn't involve any face-to-face interaction between customers and bank employees.

Financial loss, privacy issues, cybercrime, system failures and accounts being hacked are among the factors contributing to a level of perceived risk when adopting digital banking. Therefore, when customers perceive that a banking institution that offers digital banking services is trustworthy and effective in protecting financial assets and personal information, they will be more inclined to use digital banking services (Esendemirli et al., 2024).

Trust has long been recognized as a key factor shaping the uptake of technology in financial services firms and banks. For customers, an electronic banking system that appears reliable and secure is more likely to be used in the long term and to be utilised in electronic transactions. On the other hand, when customers do not have high trust, the rate of adoption can become slower, because they are likely to distrust the financial gain, misuse of their information, or going with a fraudulent firm (Alnemer, 2022).

According to technology adoption theories, customer trust helps to mitigate uncertainty and perceived risk, and boosts product adoption. Many empirical studies have revealed a positive correlation between trust and customer intention and use of digital banking services in different banking environments (Awoniyi, 2022; Esendemirli et al, 2024).

Customers' trust is essential in the banking system in Ethiopia since they would judge the technological reliability of the digital banking systems and would expect it to run in line with the values and principles of the bank. Therefore, it is hypothesized that customer trust has a positive link with Digital banking Adoption with customers of Hijra bank.

2.3.9 Customer Awareness and Digital Banking Adoption

Customer awareness can be defined as the amount of knowledge and understanding customers have about whether they can access digital banking products, what they are, what they do and how they should work. By making the user aware, the customer is able to learn about banking products and services, understand how they work and familiarise himself with the benefits that can be reaped from utilising them (Sathye, 1999).

Awareness is considered one of the key conditions for the adoption of a technology, since without having the knowledge of the service, without having an adequate understanding of the technology, customers can't adopt such services. For customers to consider using digital banking services, they first need to be made aware of the services available, understand how it works, and identify the benefits that can be gained with its usage (Rogers, 2003).

One theory that posits that knowledge and awareness are key contributors to the gathers early years is the Diffusion of Innovation Theory. Rogers (2003) states that based on the theory people are first exposed to an innovation, then develop attitudes, and then make adoption decisions. Hence, customer awareness is an important stepping stone for digital banking adoption as it impacts customer understanding and perceptions and consequently customer willingness to adopt digital banking.

Thus, it is hypothesized that Customer trust would have a positive relationship with digital banking adoption in the customers of Hijra Bank. By enhancing awareness, customers can gain a better grasp of the convenience, accessibility, speed, and efficiency of digital banking channels, which boosts their motivation to engage with them (Bekele, 2015; Sultan, 2023).

Vulnerability to digital finance (DF) remained a significant obstacle to the adoption of digital financial services in Ethiopia. Users might not be aware of the features and advantages of digital platforms in the banking sector, which hinders the availability of services.Many users may not be aware of the services and benefits of the digital banking platforms, limiting user will to avail them. Thus, the hypothesis of this study is that customer awareness has a positive relationship with digital banking adoption of the customer's of Hijra Bank.

2.3.10 Cash Preference and Digital Banking Adoption

Cash preference means preference of cash transactions which is preferred over other electronic or digital payment options. Those that strongly prefer cash usually make cash transactions regularly for daily needs and might be hesitant to embrace digital options (Rogers, 2003).

Familiarity, perceived control, culture, and reliability and security of electronic payment systems are all factors that may affect cash preference. One customer might feel more confident and reliable in handling cash than other electronic payment options, for instance after years of cash payments.Genuine customers who have actually been utilizing cash for years may feel more trustworthy and tangible with cash than any type of various other digital payment methods. Therefore, they can also be unwilling to adopt the digital banking services even if their adoption will bring certain benefits (Ajzen, 1991).

Using the Theory of Planned Behavior (TPB) is appropriate for analyzing the effect of cash preference on digital banking adoption. The theory posits that once a behavior pattern has been developed and a fixed attitude has been formed, then these behaviors and attitudes will significantly affect an individual's intentions and behaviors (Ajzen, 1991). Those who have continued to prefer cash-based transactions may have more negative attitudes when it comes to digital banking, which can affect their adoption rate.

Studies have shown that Cash preference is hindering the shift towards digital banking. Digital banking services are embraced less by customers who are more accustomed to making payments by cash, since they feel they do not gain much from replacing cash with electronics (Esendemirli et al., 2024). However, consumers who like doing business without paper are more prone to embracing digital-banking tools.

In developing countries like Ethiopia – where cash is still the main currency used in transactions – customer appetite for cash still shapes digital financial services uptake. Thus, consumers who prefer cash financial services may be less likely than individuals who are willing to use digital payment services to embrace digital banking services. So, it is hypothesized that cash preference has less influence towards digital banking adoption of Hijra Bank customers.

2.4 Empirical Literature Review

2.4.1 Digital Literacy and Digital Banking Adoption

Digital literacy is a key enabler of digital banking adoption, widely recognized as such. Digital literacy is the capacity to recognise and harness digital devices, online services and electronic systems to access and utilise services. From a banking perspective, digital literacy helps customers competently and confidently access mobile banking apps, online banking platforms, ATMs and USSD systems (Sharma, 2025). When it comes to digital banking service, if a customer is tech-literate in any sense, they are more likely to understand the technology's guidelines, see it as user-friendly, and also have embraced it. Digital skills, on the other hand, generates uncertainty, makes it seem more complex, and disincentives for customers to use digital banking channels.

Empirical evidence in developed and developing economies in general shows that digital literacy positively affects digital banking adoption by improving customers' digital confidence and digital skills in setting up a digital banking relationship, and its ability to navigate through the digital platform. Earlier, Nepal (2023) observed that digital literacy has a significant role in increasing the customer's willingness to access the digital banking platforms as it reduces the feeling of technological anxiety and increases customer confidence. In same way, Sharma (2025) studied that Digital bankers are more than likely to utilize online banking services if their customers perceive the online platform as convenient and manageable. Moreover, Awoniyi (2022) correlated, mobile and internet banking customers who are more knowledgeable about digital technology, have higher behavioral intention in the adoption of mobile and internet banking.

More research in the developing economies further underlines the importance of digital literacies. According to Bekele (2015), one of the important challenges for the growth of digital banking in Ethiopia is, however, limited digital literacy which is especially a problem for customers who are not exposed to modern technologies. Otherwise, Son (2020) emphasized that financial inclusion can’t be realized without digital skills as a customer could not make the most of using digital financial services without basic technological skills. Legass (2024) determined that higher digital skill of customers had a positive impact on their propensity to avail Islamic mobile banking services, as they felt confident in digital systems and so inclined towards acceptance.

The results indicate that digital literacy enhances digital banking adoption, as the customer becomes more confident about using digital platforms and decreases barriers to digital banking. Hence, digital literacy is treated as a significant factor for customers' digital banking adoption in this study.

2.4.2 Customer Trust and Digital Banking Adoption

Trust is also a key driver of customer's adoption of digital banking. The level of trust customers place in digital banking systems, regarding their security, reliability, and data protection capabilities. But because digital banking transactions do not involve direct physical contact between customers and banking staff, trust is key in responding to and minimizing uncertainty and perceived risks (Alnemer, 2022). Those who amply believe in the digital banking systems will be more inclined to undergo electronic transactions, and vice versa, perception of risk in using digital banking can trigger customers to remain from the system.

The role of trust in digital banking adoption has been shown to have a positive impact in many empirical studies. In Saudi Arabia, Alnemer (2022) discovered that customer trust heavily affects the uptake of digital banking, with Saudi customers indicating that greater trust in the security and reliability of the digital banking system would lead to high intention to adopt the system. Esendemirli (2024) also found that trust helps to alleviate customer concerns about fraud, privacy violations, and transaction mistakes, which in turn increases the likelihood of customers adopting digital banking. Similarly, Awoniyi (2022) reported that a trust in banking systems and regulatory protection positively influences customers’ usage of mobile banking and internet banking services.

In Islamic banking, trust is even more crucial as technological reliability is evaluated, as well as Islamic banking principles. Suhartanto (2019) concluded that trust is an important factor influencing customers' willingness to use Islamic mobile banking services in Indonesia. Similarly, Setiawan (2023) found that customers' trust in the reliability, security, and institutional credibility of banking services is a strong driver of digital banking adoption.

Trust is always one of the most important determinants of electronic banking adoption in various banking environments, as it mitigates the perceived risk and increases customers' confidence in doing electronic transactions. According to Legass (2024), the trust positively and significantly

influences the acceptance of Islamic mobile banking services in Ethiopia. Similarly, Bekele (2015) found that one of the most significant challenges that hinder digital banking adoption in Ethiopian banks is lack of trust in electronic transaction systems. The results reveal that customer confidence is a key element in influencing customers' digital banking service adoption. In view of this, the variables that explain this phenomenon here are primarily customer trust.

2.4.3 Customer Awareness and Digital Banking Adoption

This also aims to explore how aware customers are about the products and services offered by the digital bank and their usage patterns.

Customer awareness is about how much knowledge or information customers have about digital banking services, such as their existence, benefits, features, and usage instructions. The adoption of services depends on awareness because the customers cannot use the services that they do not know (Sathye, 1999). When customers are aware of the benefits of digital banking, there is less uncertainty and more likely to try, and use, digital banking.

It has been reported in many empirical studies that customer awareness had a positive impact on digital banking adoption as it makes the customers more aware about the services and benefits they can avail in digital banking. Results, however, are not one-size-fits-all and awareness does not necessarily lead to adoption behavior. One of the key findings of Sathye (1999) was that customers not knowing about the electronic banking services was one of the major reasons for the low rate of adoption. The same finding was observed by Joshi (n.d.) as well, where awareness campaigns have a strong positive impact on customers' intention to use digital banking platforms. According to Son (2020), customers who are aware of the advantages of digital banking (e.g., convenience, accessibility, and time savings) will be more inclined to accept digital financial services.

In developing countries, the importance of awareness has been highlighted in the research. According to Bekele (2015), the low level of public awareness on digital banking services is a major factor that hinders the adoption of digital banking in Ethiopia. Likewise, Sultan (2023) reported that lack of customer awareness is one of the main challenges faced by the growth of digital banking in Ethiopian interest-free banking institutions. Many customers don't know about

the digital banking options and don't have information about how they can utilize them, and their lack of knowledge means that they stick with traditional banking.

The significance of awareness is also supported by the studies conducted in the context of Islamic banking. According to Legass (2024), awareness about Islamic mobile banking services positively affects on adoption behavior of the customers. Hidayat (2023) also highlighted the importance of effective communication and customer education in boosting customer adoption of e-banking services in Islamic financial institutions.

Overall, the reviewed literature indicates that customer awareness can help ease the path of digital banking adoption by enhancing awareness and understanding of digital banking services among customers. However, this relationship could be stronger or weaker in different institutional and geographic settings. Therefore, the present study includes customer awareness as an explanatory variable.

2.4.4 Cash Preference and Digital Banking Adoption

Customer preference for cash means that customers tend to choose cash over electronic payment methods. Customers remain very cash-dependent despite their perceived convenience, the lack of trust in electronic systems and electronic transactions, and habit in many developing economies (Rogers, 2003). Cash transactions have a strong preference that deters customers from using digital banking.

Based on several empirical studies, some findings indicate that cash preference has a negative impact on digital banking adoption. Familiarity with the behavior has a significant impact on the decision to adopt technology, and people are more likely to engage in familiar behavior unless they are motivated to do otherwise, says Ajzen (1991). Rogers (2003) also attributes some resistance to innovation to behavioral inertia and to the attachments to old ways. Personal customers who are used to dealing with paper money might feel that digital banking isn't needed or easy to use.

Although digital financial services have been expanding in Ethiopia, Bekele (2017) noted that cash continues to be the predominant payment method. The reality is that many customers still prefer cash, as they feel that they can control it, trust it and make it more tangible. Sathye (1999)

also discovered that those who are attached to the traditional banking systems are less likely to use electronic banking systems.

Further evidence from developing countries suggests that cultural and behavioural influences are key factors in preference for cash. Many developing economies have not seen high adoption of digital banking due to the use of traditional cash transactions, according to Son (2020). However, in the context of Islamic banking, Assefa (2022) noted that the banks' services should be consistent with the sociocultural values and behavior of the customers to achieve acceptance.

The results indicate that the preference for cash has a negative effect on the adoption of digital banking since, when customers have a strong preference for cash, they are less interested in moving toward digital banking systems. Thus in this study, cash preference is added as an inverted predictor to digital banking adoption.

2.4.5 Empirical Studies in Interest-Free Banking Contexts

There are several empirical papers which have explored the adoption of digital banking in the context of interest-free banking or Islamic banking. The findings of these studies reveal that conventional technology adoption factors, as well as Islamic specific factors like the degree of religiosity and Sharia compliance, affect customer adoption behavior in Islamic banking.

For the study of the adoption of mobile banking in Islamic banks in Indonesia, Suhartanto (2019) adopted technology acceptance model and religiosity-intention theory. The study revealed that perceived usefulness, perceived ease of use and religiosity have significant influence on the intention of customers to accept Islamic mobile banking services. The results also align with Setiawan (2023), who found that the adoption of Islamic banks' digital banking is significantly influenced by the level of customer religious affiliation and their trust in the compliance of Islamic banking.

Sofyani (2023) explored the factors influencing continued usage intention of Islamic mobile banking services, which showed that both application efficiency and data security positively influence customers' continued usage intention on digital banking platforms. Hidayat (2023) also noted that Islamic banks need to make sure that their digital banking products are Sharia-compliant, not only because the customers appreciate convenience but also the religious acceptability.

Legass (2024) has noted that perceived usefulness, perceived ease of use, perceived advantage and trust are the significant factors effecting adoption of Islamic mobile banking services in Ethiopia. Similarly, Legass (2025) found that customer satisfaction in digital Islamic banking services is positively affected by compliance, reliability, service quality and human skills. Limited public awareness, gaps in regulations and lack of infrastructure were found to be among the foremost challenges for the growth of digital banking among interest-free banking institutions in Ethiopia (Sultan, 2023).

On the whole, research in Islamic banking and interest-free banking has identified the conventional determinants of technology adoption and added context-specific factors, including customer trust, awareness, service quality, and institutional credibility, as determinants of the adoption of digital banking. This means that customer perception continues to be important in digitally banking even among specialized banking systems. However, no research has specifically focused on investigating the impact of digital literacy, customer trust, customer awareness and cash preference on adoption of digital banking in a fully-fledged interest-free banking environment in Ethiopia. To fill this lacuna, this study concentrates on these four determinants on the customer level of Hijra Bank customers.

2.4.6 Empirical Studies in Ethiopia

Despite the growing investments in financial technologies in Ethiopia, the adoption of digital banking is still relatively low, as revealed by empirical studies. Findings from previous Ethiopian studies suggest that factors related to customers, technological infrastructure, institutional preparedness, and regulatory environments play key roles in digital banking adoption.

Bekele (2015) has investigated the determinants of the adoption of electronic banking in Ethiopia, and has identified high risks of lack of awareness, limited digital literacy, inadequate ICT infrastructure and lack of trust in electronic transaction systems as key barriers to adoption. Limited technological infrastructure and low public awareness to use digital financial services is also cited as a constraint in the expansion of electronic banking in Ethiopia by Gardachew (2010).

Nesibu (2019) examined the mobile banking adoption in the Commercial Bank of Ethiopia and reported that perceived usefulness, perceived ease of use, self-efficacy and relative advantage

have positive impacts on customer adoption. Ibeto and Okore (2012) have also agreed that the banking system should be customized in a manner that resonates with customers' sociocultural and religious perceptions for greater acceptance.Assefa (2022) also suggested that banking systems should be made to suit the sociocultural and religious values of customers for better acceptance.

From the perspective of interest-free banking, Sultan (2023) highlighted the restricting factors that hinder the development of digital banking services at Hijra Bank, including customer awareness restrictions, regulatory shortcomings, and technological hurdles. According to Legass (2024), trust, perceived usefulness, and perceived ease of use are the three factors that have significant effects on the adoption of Islamic mobile banking in Ethiopia. Moreover, Jarra (2024) claimed that the current legal environment in Ethiopia is still geared towards conventional banking focused on interest, which poses regulatory hurdles in scaling up digital banking services without interest.

While there have been previous studies in Ethiopia on digital banking adoption, the predominant research studies have focused on either the traditional banking systems or general technological factors. There is limited study specifically looking at the determinants of customers' acceptance of digital banking at the level of the bank.Customer level determinants of digital banking adoption in full-fledged, interest-free banks in Ethiopia has not been studied directly. Secondly, there is a lack of studies in Ethiopia that statistically analyzed the influence of digital literacy, customer trust, and customer awareness together in a single empirical model, especially in full-fledged interest-free banks. The role of these customer-level factors in digital banking adoption, therefore is still not well understood. Hence, this study aims to fill this empirical void by exploring the impact of these four customer factors on digital banking adoption of Hijra Bank's customer base in Addis Ababa, Ethiopia.

2.5 Research Gap

Previous research on digital banking adoption has been able to shed a lot of light on the factors affecting customers' acceptance and use of digital financial services. Many studies have used existing technology adoption models such as the Technology Acceptance Model (TAM) (Davis, 1989), the Diffusion of Innovation (DOI) Theory (Rogers, 2003), and in theory of Planned Behavior (TPB) (Ajzen, 1991) to analyze the factors to be examined such as perceived

usefulness, perceived ease of use, trust, security, facilitating conditions, and social influence. But in general, the findings validate that customer perception is a crucial factor influencing the adoption behaviors of online banking services (Alnemer, 2022; Sharma, 2025; Nepal, 2023). Despite all of this, however, there is a number of important gaps in the existing literature.

Although there is an increasing corpus of literature, some significant gaps exist. One, most of the previous publications have addressed conventional banking settings, with comparatively less attention paid to interest-free or Interest-free banking settings. Despite studies that have been conducted on context of Islamic banking that include the factors of Islamization, or the assessment of Sharia compliance and trust, there is a lack of studies that have been conducted in Pakistan, which is a country with a relatively weak Islamic banking system (Suhartanto, 2019; Setiawan, 2023; Sofyani, 2023). This means that the results of these studies cannot necessarily be directly applied to the new interest-free banking system in Ethiopia, which has different institutional, technological and regulatory frameworks.

Second, previous research on digital banking adoption has tended to focus on the technological and organizational dimension features of digital banking, such as ICT infrastructure, system quality, management support and legal environment, rather than pay much attention to behavioral factors at the level of individual customers. But differences in adoption in a one-bank environment in which customers are operating in similar technological and organizational contexts are more likely to stem from differences in customer-related factors (e.g. digital literacy, trust, awareness, and preference for cash; Straub, 2009; Yin, 2014). Therefore, customer-level determinants are more important to study not only because of their increased role in explaining variation in adoption behavior across customers who have the same organizational and technological environment but also because they have a larger influence on this behavior.

Third, there is relatively little existing empirical work on uptake of digital banking in Ethiopia. To date, few Ethiopian studies have concentrated on conventional banking institutions, or only on some of the determinants like perceived usefulness, perceived ease of use, trust, and relative advantage (Bekele, 2015; Nesibu, 2019; Legass, 2024). Very few empirical works specifically focus on customer determinants of digital banking adoption in interest free banking institutions in Ethiopia. Moreover, prior Ethiopian studies seldom investigate the digital literacy, customer

trust, customer awareness, and the cash response within the same empirical context, restricting the knowledge of how these four variables contribute to digital banking adoption behavior.

Fourth, cash preference as a factor influencing the adoption of Digital banking has not been the focus of any previous study in Ethiopia despite the continued prevalence of cash transactions in the Ethiopian economy. For developing economies where cash-based transaction still plays a culturally and economically significant role, the preference for cash could affect the uptake of digital financial services to an extent (Sathye 1999; Bekele 2017). But, this variable has not been explored enough in the Ethiopian interest-free banking literature.

Besides, there have been a number of studies conducted on the adoption of digital banking in Ethiopia but few have specifically addressed full fledged interest-free banks like Hijra bank. Previous studies mainly focused on either conventional banks or Islamic banking windows within the conventional banking systems. Hijra Bank is Ethiopia's first truly interest-free bank, which not only offers a distinctive institutional setup but also highlights the behavior of its customers in the fast-changing digital banking landscape.

Thus, this study aims at filling these gaps from a contextual, analytical, geographical, variable-specific and institutional perspective by studying the effect of digital literacy, customer trust, customer awareness, and cash preference on the adoption of digital banking among the customers of the Hijra Bank, Bethel Ansar Branch, Addis Ababa. The study adds to the existing body of empirical evidence on the respective role of these determinants in the context of an emerging digital banking sector in Ethiopia, by taking a holistic approach that considers a full-fledged interest-free banking institution and adopting a customer-level analytical perspective.

2.6 Conceptual Framework

The conceptual framework of this study builds on the Technology Acceptance Model (TAM) and the general body of work on the adoption of digital banking. The framework illustrates the linkage between customer related factors and digital banking adoption of the Hijra bank customers in the city of Addis Ababa, Ethiopia. It is assumed that the factors that influence customers' adoption of digital banking are the differences in customers' level of digital literacy, trust in digital banking services, awareness of digital banking services, and the preference for cash transactions.

The variables of this study are independent variables, which are digital literacy, customer trust, customer awareness and cash preference. The variables are chosen based on the fact that previous theories and studies have supported that they are important determinants of digital banking adoption from the customers' perspective (Davis, 1989; Sathye, 1999; Alnemer, 2022; Nepal, 2023; Sharma, 2025). Digital literacy improves the effectiveness of customers in using digital banking platforms, customer awareness increases customer knowledge regarding availability and benefits of digital banking services and customer trust encourages customers to conduct online transactions without fear of loss or threats. However, positive attitudes towards cash transactions will be associated with customer willingness to engage in digital banking services, whereas the opposite is expected to be true for customers who are particularly attached to cash transactions.

The dependent variable of the study is digital banking adoption defined as the acceptance and usage of digital banking services like USSD banking, mobile banking, internet banking and ATMs by customers of Hijra Bank. The framework proposes that differences in how customers behave will stem largely from differences in these factors related to the customers.

The conceptual framework for the study is presented in this section as a foundation for the formulation of the hypotheses in Section 2.7. The framework is based mostly on the Technology Acceptance Model (TAM) (Davis, 1989), and grounded in theories such as the Diffusion of Innovation (DOI) and the Theory of Planned Behavior (TPB). This framework is developed to focus on the factors at the customer level affecting digital banking adoption, namely; digital literacy, customer trust, customer awareness, cash preference. Technological / organizational factors are included as a contextual factor that creates the environment in which the customers are subject to decision making with regard to adopting new technology, and are not considered to be explanatory variables.

Thus, the concept of this study is explained as follows:

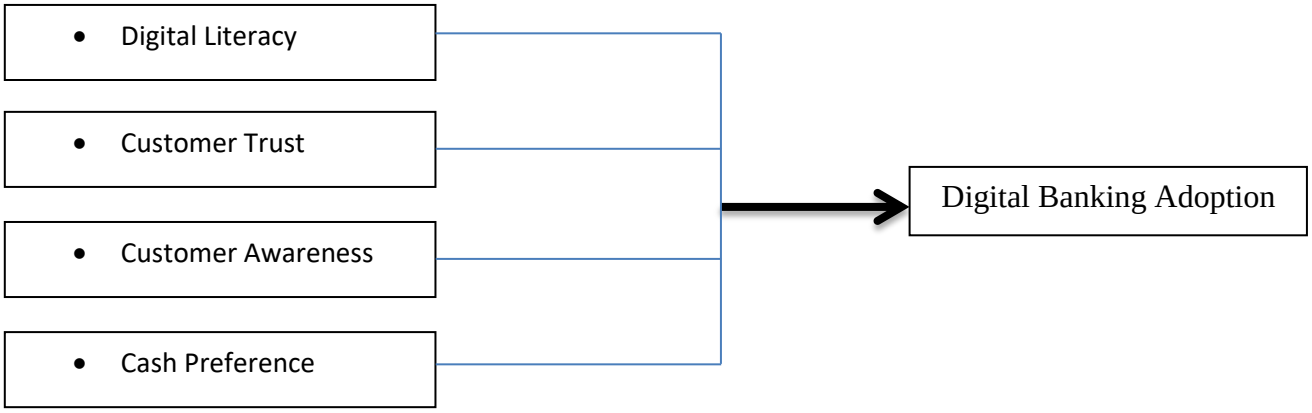


Fig 2.1 Conceptual Framework of the Study.

Source: Developed by the Researcher based on Davis (1989), Rogers (2003), Ajzen (1991), Alnemer (2022), Nepal (2023), and Sharma (2025).

The framework shows that digital literacy, customer trust and customer awareness have positive influence on digital banking adoption, and cash preference has a negative influence. The framework serves as the foundation for the hypotheses that are developed for the study and as a guide to the empirical analysis in later chapters.

2.7 Research Hypotheses

The research hypotheses developed from the Technology Acceptance Model (TAM), the Diffusion of Innovation (DOI) Theory and empirical evidence on digital banking adoption are presented in this section. The hypotheses state the expected relationship between the independent variables, namely digital literacy, customer trust, customer awareness, and cash preference and the dependent variable, namely digital banking adoption among customer of Hijra Bank, Bethel Ansar Branch, Addis Ababa, Ethiopia.

2.7.1 Digital Literacy and Digital Banking Adoption

Digital literacy is the capacity of customers to operate effectively using digital technologies, mobile devices, Internet platforms and electronic banking systems. Based on the Technology Acceptance Model (TAM) by Davis (1989), customers would be more likely to adopt a technology if they found it easy to use and useful to their activities. Venkatesh and Davis (2000) built on this model to argue that the ease-of-use of a system is directly influenced by a user's skill factors, rather than by the design of the tools themselves. The more digitally literate the

customers are, the better they can access the digital banking platforms, understand the steps of the transactions, troubleshoot problems and leverage digital banking services. Therefore, they are more likely to consider the digital banking technologies as easy and manageable, and thus higher perceived ease of use and perceived usefulness, and finally higher adoption intention (TAM).

Previous empirical studies have consistently identified positive relationships among digital literacy, digital banking adoption. Thus, Sharma (2025) found that there is a clear impact of digital literacy on online banking services among the customers. Likewise, it has been reported that digitally competent customers are more prone to accepting digital banking technologies in Nepal (Nepal, 2023). Low digital skills is one of the challenges facing the digital banking scale up in Ethiopia (Bekele, 2015).

Based on the above theory and empirical evidence, the following hypothesis is put forward:

H1: The extent of digital literacy is positively and significantly influencing digital banking adoption rate among the customers of Hijra bank.

2.7.2 Customer Trust and Digital Banking Adoption

Customer trust involves how confident customers are that digital banking systems are secure, dependable, and will safeguard their financial and personal details. In digital banking, customers perform financial transactions without any interaction with bank personnel and the significance of trust is increased in this regard. Mayer, Davis and Schoorman (1995) provide a definition of trust as a willingness to be vulnerable to another party in the expectation that they have the ability, benevolence, and integrity to support that vulnerability. Gefen, Karahanna and Straub (2003) extended this idea to the context of online transactions. Pavlou (2003) directly incorporated this into TAM, showing that trust decreases the perceived risk for customers and increases the perceived usefulness when there is no face-to-face verification, which is in line with the overall behavioral argument that perceived security and trust minimizes uncertainty and enhances consumers' acceptance of technology-based services (Davis, 1989; Ajzen, 1991).

Empirical studies show that trust is one of the most powerful factors that has motivated users to adopt digital banking. Alnemer (2022) reported that customer trust has a significant impact on the adoption of digital banking in Saudi Arabia. Similarly, Esendemirli (2024) revealed that the more reliable the digital banking system is, the more likely bank customers are to embrace

electronic transaction services. But in Islamic banking, trust is even more important because customers not only want a reliable technology, but a technology that supports Sharia banking system (Suhartanto, 2019).

This study, for this reason, postulates the following hypothesis:

H2: Trust of customers of Hijra Bank with their bank's digital banking positively and significantly influence digital banking adoption of customers of Hijra Bank.

2.7.3 Customer Awareness and Digital Banking Adoption

Customer awareness is the awareness of the customer about the services and its attributes, benefits, and its usage in digital banking. There is a high level of dependency on the level of awareness of the adoption of technology, consumers are not likely to adopt services if they are not aware of them or if they are only partially aware. Rogers' (2003) Diffusion of Innovation (DOI) Theory sees adoption as a five-stage process: Knowledge, Persuasion, Decision, Implementation, and Confirmation; the first step in the process is Knowledge, meaning that customers cannot progress to forming an attitude or making a decision about an innovation without first learning about it and understanding what it does: Awareness, then, is the prerequisite condition for the subsequent, more evaluative processes of adoption to take place.

In practice, several studies have shown that it is positively related to customers' adoption of digital banking services. Sathye (1999) found that awareness problem was one of the significant barriers to the use of electronic banking. According to other researchers including Bekele (2015), public awareness is one of the major constraining factors for the growth of digital banking services in Ethiopia. Consumers with awareness on the benefits and functioning of digital banking are more inclined to adopt and actively make use of digital banking services (Sultan, 2023).

Based on this it is proposed that the following hypothesis is correct:

H3: There is positive and significant relationship between customer awareness and digital banking adoption among customers of Hijra Bank.

2.7.4 Cash Preference and Digital Banking Adoption

Cash preference is the tendency of consumers in favor of cash transactions rather than electronic transaction. In developing economies like Ethiopia, cash is the main means of exchange because the people are used to cash, they found it convenient to trade with cash, they don't have appropriate infrastructure to conduct transactions in other mediums, and they have cultural norms of transactions in cash. The Theory of Planned Behavior (TPB) (Ajzen, 1991) suggests that attitude toward the behavior, subjective norm, and perceived behavioral control are determinants of behavior intention. Under the TPB, a higher favourable attitude toward one behaviour is correlated with a lower intention toward another competing behaviour that has the same goal, in this case, the attitude towards the behaviour of favouring cash-based transactions is correlated with the attitude towards the behaviour of favouring digital banking as an alternative behaviour.

This substitution effect has been supported by previous study. Esendemirli et al. (2024) discovered that cash users who use cash on a regular basis would benefit less from the shift towards digital channels. However, in Ethiopia, cash is still used for the majority of economic transactions and this is an obstacle to the shift to digital financial systems (Bekele, 2017). Customers who are keen on cash transactions may not consider digital banking essential, secure, or as convenient as doing business with cash.

The hypothesis of the present study is that:

H4: Cash preference negatively and significantly influences the adoption of digital banking by Hijra Bank customers.

The four hypotheses are the assumption of the study that the customer related factors play significantly in the adoption of digital banking. The factors of digital literacy, customer trust, and customer awareness are hypothesized to positively influence digital adoption and cash preference is hypothesized to have a negative influence on digital adoption. The hypotheses are tested in chapter Four through an empirical analysis of the data collected from the customers of Bethel Ansar branch of Hijra Bank in Addis Ababa.

Chapter Three

Research Methodology

3.1 Research Approach

This study is quantitative in nature and aims to investigate the influence of customer related factors on digital banking adoption within interest free banking environment. The quantitative approach is suitable for this study because it aims to measure the perceptions and behaviors of customers as well as testing the relationship between the independent variables and the dependent variable of digital banking adoption by applying statistical techniques (Creswell, 2014; Saunders et al., 2019). This study is underpinned by the Technology Acceptance Model (TAM), the Diffusion of Innovation (DOI) Theory and the Theory of Planned Behavior (TPB), which together serves as the theoretical underpinning for the explanation of customers' adoption of Digital banking Services.

There are various reasons to feel that the quantitative approach is appropriate. First, the study is intended to explore the impact of digital-related factors of customers on the adoption of digital banking, which are namely digital literacy, customer trust, customer awareness, and cash preference. To achieve this objective, numerical data needs to be collected and statistical techniques may be used to quantify the strength and nature of the relationships between variables. Second, the study aims to validate the inferences from the available theories and prior empirical research on the adoption of digital banking. For hypothesis testing, quantitative methods are especially suitable since the objective measures and statistical analysis of the theoretical relationship are possible (Creswell, 2014).

Thirdly, the study is based on the data obtained from the structured questionnaires filled out by the customers of the Hijra Bank, Bethel Ansar Branch, Addis Ababa. The standardized measurement scales enable the researcher to measure respondents' perceptions and behaviors and to analyze the data systematically. Fourthly, the quantitative approach allows the use of descriptive statistics, correlation analysis, and Ordinary Least Squares (OLS) multiple linear regression to analyze the impact of digital literacy, customer trust, customer awareness, and cash preference on digital banking adoption.

Moreover, the quantitative approach was found to be consistent with the earlier studies on digital banking adoption, which extensively adopted quantitative methods to explore digital banking adoption behavior of consumers, to test theoretical relationships between variables (Alnemer, 2022; Awoniyi, 2022; Sharma & Kumar, 2025; Nepal & Nepal, 2023; Legass & Durmuş, 2024). Therefore, the quantitative research method is an appropriate method for the research in this study to reach the purpose and test the proposed hypothesis.

3.2 Research Design

The research design used in this study is a cross sectional design, which is a survey research that applied in single bank. The cross-sectional design fits within the framework of the study as it focuses on customers' perceptions and their behaviour related to adopting digital banking at one specific moment in time. The advantage of this design is that it allows researchers to gather data from a relatively large number of respondents and makes it possible to statistically examine relationships between the various study variables (Saunders et al., 2019; Field, 2018).

The study is carried out in the context of the first full-fledged interest free bank in Ethiopia named Hijra Bank. Analysing just one banking institution allows for a constant organisational and technological setting among all respondents, and thus a focus on the customer-level factors that could serve as explanations for differences in digital banking adoption. Due to similar institutional conditions of the customers, the differences in the adoption behavior are more likely to be linked to variations in some dimensions of digital literacy, customer trust, customer awareness and cash preference (Straub, 2009; Yin, 2014).

Research Design is Descriptive & Explanatory. The descriptive aspect aims at describing the level of digital banking adoption, digital literacy, customer trust in digital banking, customer awareness about digital banking and cash preference of the customers of Hijra Bank. The explanatory aspect aimed to analyze the relationships between these customer-related variables and the adoption of digital banking and test the hypotheses proposed based on the theoretical and empirical literature (Kothari, 2004; Hair et al., 2019).

The cross-sectional survey design is suitable because it allows for the efficient collection of quantitative data necessary for achieving the objectives of the study and enables the use of descriptive statistics, correlation analysis and Ordinary Least Squares (OLS) multiple linear

regression for exploring the impact of the customer-related factors on the adoption of digital banking.

3.3 Target Population

Overall, the target population being used for this study is the resident individual customers of Hijra Bank who are aware of the bank's digital banking services like mobile banking, internet banking, automated teller machines (ATMs) and USSD services. Based on information provided by the headquarters digital banking division of Hijra Bank (2025), there are over 1.1 million total customers in Ethiopia of which resident individual clients make up more than 90% of the total customer base. The bank has 33 branches in Addis Ababa and a total of 160 branches nationwide.

This study is centered only on the customers of the Bethel Ansar Branch which is in the central district of Addis Abba city. This branch was purposefully chosen, as it is one of the best-performing branches in Addis Ababa based on internal data from Hijra bank (2025), which shows it has a high number of digital banking users, namely 4,197 mobile banking users, 578 ATM card holders, and 6,728 USSD users. Digital banking usage is concentrated in the branch, suggesting this is an appropriate venue to explore the factors that affect digital banking adoption. Individuals who live in the bank's district are the biggest customer base and the main consumers of the bank's digital banking.

This approach focused on customers as the unit of analysis is in line with the notion of the Technology Acceptance Model (TAM), which views customers' perceptions as the basis for explaining technology adoption (Davis, 1989; Legass & Durmuş, 2024), and also the general customer-centric perspective in the research. Customers are the right population, as adoption of digital banking is in the end a customer's decision based on their perceptions, attitudes, digital literacy, trust, awareness, and cash preference (Sathye, 1999; Bekele, 2015). The target population is active users of digital banking services and/or customers who know of digital banking services but may not be using them. With this method, the study can reveal the entire process of adopting behavior and collect the data of factors that distinguish adopters from non-adopters (Sultan, 2023; Legass & Durmuş, 2024). The study only analyses the customers and does not collect any data about the employees, since the technical and organizational factors are regarded as contextual factors, not as differential predictors.

3.4 Sampling Procedure

For the analysis in this study, the study subjects were the individual customers of the Bethel Ansar Branch of Hijra Bank with convenience sampling method in Addis Ababa who were aware about the digital banking offered by Hijra Bank. Convenience sampling was deemed suitable as the researcher had a limited amount of time, resources and access to the customer records, this would allow the researcher to access the people who were available and willing to fill in the questionnaires (Saunders et al. 2019, Creswell, 2014).

The Bethel Ansar Branch has significant mobile banking, ATM banking and USSD banking patronage. This was a suitable platform to ensure responses from customers who are digitally inexperienced to those who are digitally savvy. Data was obtained from customers that came into the branch during the data collection time.

Further, the objective of this study is to study and test the relationship among customer related factors and adoption of digital banking and the convenience sampling is justified for this objective since the aim of this study is not to estimate the population parameters of all customers of Hijra Bank. As with numerous studies with theoretical foundations based on the Technology Acceptance Model (TAM), theory testing and studying associations between variables are the focus, not statistical representativeness of a larger population (Tabachnick & Fidell, 2019; Hair et al., 2019).

To ensure a more representative sample of respondents, the study involved consumers who varied across certain socio-demographic and/or relationship factors, such as age, gender, education and length of time with the bank. People who actively utilized digital banking services and the people who are using it less actively were surveyed. In other research that have studied digital banking adoption in the context of developing countries such as Ethiopia (Nesibu, 2019; Legass & Durmuş, 2024; Sultan 2023), similar approaches have been taken.

3.5 Sample Size Determination

The number of subjects used in this research was determined according to the minimum number of subjects needed for multiple linear regression analysis and based on the practical considerations of the data collection process.

Green (1991) and Tabachnick and Fidell (2019) provide the following formula for the minimum sample size needed to run multiple linear regression:

$$N \geq 50 + 8m$$

where m is equal to the number of independent variables in the model. This study used four independent variables (IVs) (digital literacy, customer trust, customer awareness, and preference for cash), so the minimum sample size was:

$$N \geq 50 + 8(4) = 82$$

Thus, a minimum of 82 respondents was required to perform reliable regression analysis.

A larger sample size enabled an increase in the statistical power of the study, improving the findings' reliability. These questionnaires were distributed in the Bethel Ansar Branch of Hijra Bank, Addis Ababa to the resident individual customers and a total of 120 questionnaires were distributed. The return rate was 100 per cent with all 120 questionnaires completed and returned. Finally, 120 respondents were included in the final sample.

The sample size obtained was larger than the minimum requirement for regression, and similar to those used in digital banking adoption studies carried out in developing countries (Nepal & Nepal, 2023; Sharma & Kumar, 2025; Legass & Durmuş, 2024). Thus, the sample size used in this study was deemed to be sufficient for the data analysis used.

3.6 Data Sources

The study was mainly based on the primary data obtained from the customers of Hijra Bank's Bethel Ansar Branch in Addis Ababa. The primary data were collected by using the structured questionnaire to measure the level of digital literacy, customer trust, customer awareness, cash preference, and digital banking adoption. The items in the questionnaire were borrowed from the other measurement scales used in previous digital banking adoption studies (Alnemer, 2022, Esendemirli et al., 2024, Legass & Durmuş, 2024, Nepal & Nepal, 2023, Sharma & Kumar, 2025).

Secondary data also were consulted to give background and supporting information. The sources of this were academic journal articles, books, regulatory documents, policy reports, and prior

studies on the issue of digital banking adoption and interest-free banking in Ethiopia (Bekele, 2015; Jarra, 2024; Sultan, 2023; Tewabe, 2023). The information was also gathered from Hijra Bank headquarters regarding customers statistics, distribution of branches and use of digital banking which further helped in describing the study context and justifying the study area.

The use of primary data sources complemented by secondary data sources ensured comprehensiveness and broadened the understanding of digital banking adoption in the interest-free banking sector in Ethiopia.

3.7 Data Collection Techniques

Data were mainly gathered from customers of the Bethel Ansar Branch of Hijra bank in Addis Ababa, Ethiopia, by applying a structured self-administered questionnaire. The questionnaire aimed to collect information on the perceptions of the respondents on digital literacy, customer trust, and customer awareness level, cash preference, and adoption of digital banking.

The questionnaire consisted of six sections. Demographic data was gathered in the first section, and the other sections were multiple-item scales of the study variables. All measurement items were measured on a 5 point scale that ranged from 1 = Strongly Disagree to 5 = Strongly Agree. A Likert scale is the most popular scale used in technology adoption research because it allows for standardized measurement of attitude, perception, and behavior tendencies (Creswell, 2014; Saunders et al., 2019).

The questionnaire was checked with the research advisor prior to the main survey for content validity, clarity and relevance to the study's objectives. Changes were made as a result of the feedback received that were necessary to make. Finally, the finalised questionnaire was sent to the customers who came to the branch and agreed to participate in the study.

The number of questionnaires that were distributed was 120 and all questionnaires were successfully completed and returned. Therefore, 120 valid responses were used for the final analysis and the response rate achieved was 100 per cent.

The researcher was available to clarify and translate questionnaire items as needed during the administration of the questionnaires. This was to assure clarity of the meaning of each question for the respondents before they gave a response. An effort was made to explain the items in a

consistent manner without influencing the responses, to reduce misunderstandings and to produce quality data collection.

3.8 Method of Data Analysis

Structured questionnaires were used to collect the data which were then coded, entered and analyzed using Python in the Google Colab environment. Google Colab was chosen because it is a cloud-based, freely available tool that offers a large number of statistical tools such as reliability analysis, correlation analysis, diagnostic analysis and multivariate linear regression. Flexibility and data management, statistical analysis, and visualization capabilities were the reasons to choose Python. Various key libraries used for data processing and analysis include Pandas, NumPy, SciPy, Statsmodels, and Matplotlib. The statistical methods used in this study are similar to the methods used in SPSS or other software packages.

Descriptive statistics were derived to give the summaries of the respondents' demographic characteristics and the distribution of the study variables. Categorical data were described by frequencies and percentages; means and standard deviations summarized the responses for digital literacy, customer trust, customer awareness, cash preference, and digital banking adoption.

The internal consistency of the questionnaire items was tested by means of Cronbach's Alpha coefficient, which is a measure of the reliability of the measurement scales. The detailed reliability assessment and results are presented in Section 4.5.

The Pearson correlation analysis was performed to analyze the direction and strength of the association between the independent variables and digital banking adoption, in order to examine the relationships among the study variables. Finally, multiple linear regression model using Ordinary Least Squares (OLS) was used to test the effect of digital literacy, customer trust, customer awareness and cash preference to adopt digital banking.

Diagnostic tests were performed to determine if the assumptions of multiple linear regression are met before the regression model can be estimated. The linearity was assessed using Pearson correlation analysis and scatter plots and the Pearson correlation coefficient showed linear relationships between the study variables. The Durbin-Watson statistic was used to test for independence of errors, and gave a value of 1.590, which indicated no serious autocorrelation

problem. The normality of residuals were checked via the histogram and a Q-Q plot indicating approximately normal distribution of residuals. The homoscedasticity was evaluated by visual inspection of residual scatter plots, which appeared random with no consistent patterns. The Variance Inflation Factor (VIF) was used to assess multicollinearity and all VIFs were found to be less than 5, which is the max accepted value. The results confirmed that these data could be used in multiple linear regression analysis (Field, 2018; Hair et al., 2019).

The statistical significance of the estimated coefficients was decided at 5 per cent significance level ($\alpha = 0.05$). The coefficient of determination (R^2) and adjusted R^2 were used to determine the overall explanatory power of the model, and the F-test was used to determine the overall significance of the regression model.

3.8.1 Model Specification (Econometric Model)

It used a multiple linear regression model estimated using the Ordinary Least Squares (OLS) method to explore the role of customer-related factors on digital banking adoption. Customer Adoption of Digital Banking (CADB) was the dependent variable and Digital Literacy (DL), Customer Trust (CT), Customer Awareness (CA), and Cash Preference (CP) were the independent variables.

The regression model is given by:

$$CADB = \beta_0 + \beta_1(DL) + \beta_2(CT) + \beta_3(CA) + \beta_4(CP) + \epsilon$$

Where:

CADB = Customer Adoption of digital banking (dependent variable)

β_0 = Intercept

DL = Digital literacy

CT = Customer trust

CA = Customer awareness

CP = Customer preference

$\beta_1, \beta_2, \beta_3 \; and \; \beta_4$ are Regression Coefficients of each predictor variable

ϵ = the error term

The coefficient β_1 explains how the digital literacy impacts the customer's adoption of digital banking, β_2 shows how the customer's trust impacts the customer's adoption of digital banking, β_3 shows how customer's awareness impacts the customer's adoption of digital banking and β_4 shows how the customer's preference of cash impacts the adoption of digital banking by the customer. Positive correlation is expected in digital literacy, customer trust and customer awareness and negative correlation is expected in cash preference based on the study hypotheses.

3.9 Validity and Reliability

Validity is concerned with how well a research instrument measures what it is designed to measure (Creswell, 2014; Saunders et al., 2019). For the appropriateness of the questionnaire used in this study, content validity and face validity were used.

The content validity was achieved by modifying the items of the questionnaire based on the digital banking adoption questionnaires that had been previously validated. The measurement items for digital literacy, customer trust, customer awareness, cash preference and digital banking adoption were developed through literature search and empirical studies related to digital banking adoption (Alnemer, 2022; Esendemirli et al., 2024; Legass & Durmuş, 2024; Nepal & Nepal, 2023; Sharma & Kumar, 2025). In addition, the items on the questionnaire were checked by the research advisor to assure that they were representative of the constructs involved.

Face validity was achieved by examination of the questionnaire to make sure that items are clear and understandable and appropriate for the measuring the intended concepts among the customers of hijra bank.

The consistency and stability of a measurement instrument is called reliability (Hair et al., 2019; Saunders et al., 2019). Cronbach's alpha coefficient was used to determine the internal

consistency measure of reliability. Nunnally and Bernstein (1994) suggested that Cronbach Alphas 0.70 or better are acceptable.

The results showed that all constructs had Cronbach's Alpha greater than 0.70, which was considered the acceptable-to-excellent internal consistency reliability. All measurement scales were thus kept for further analysis.

3.10 Ethical Consideration

The research in this study was carried out following the principles of ethics accepted in academic research. Prior to the data collection process, permission was requested from the concerned authorities of Hijra Bank to carry out the study in Bethel Ansar Branch.

There was a complete voluntary participation in the study. The participants were made aware of the research objectives and their participation was made voluntary. They also learned they could opt out of the study or withdraw from it at any point with no repercussions (American Psychological Association, 2017).

A questionnaire was not used to gather personally identifiable information, thereby ensuring respondents' privacy. Confidentiality and anonymity was maintained throughout the research process. The data that has been collected was for the purpose of completing this Masters thesis only, and was not passed to anybody who was not authorized to have access to it.

The survey results presented are aggregated so that it is not possible to identify individual respondents from the survey results. All data collected was kept secure and only looked at by the researcher for research purposes. In addition, the statistically analysis was performed in Google Colab using legally available software tools, thus adhering to academic integrity and software licensing laws. The outcomes were analyzed and presented objectively, without manipulation, altering or misrepresenting the results (Saunders et al., 2019; Resnik 2020).

Chapter Four

Data Analysis and Presentation

4.1 Introduction

The analysis of the data obtained from the 120 customers of Bethel Ansar Branch of Hijra Bank in Addis Ababa is presented in this chapter. The analysis consists of descriptive statistics of the sample, reliability testing of the measurement scales, correlation analysis and the results of multiple linear regressions for hypothesis testing H1 to H4. A discussion of the findings is included in the end of the chapter with regard to the research questions and literature.

4.2 Response Rate and Sample Characteristics

The response rate and the characteristics of the samples are presented. The response rate and sample characteristics are provided.

The questionnaires were distributed to the customers at the Ansar branch at Bethel in Hijra bank and 120 questionnaires were distributed. The 120 questionnaires sent out were returned, with 100% response rate. 120 responses were valid and were analysed.

Table 4.1 Response Rate

Description	Frequency	Percentage (%)
Questionnaires Distributed	120	100
Questionnaires Returned	120	100
Questionnaires Not Returned	0	0
Valid Responses Used for Analysis	120	100

4.3 Demographic Characteristics of Respondents

4.3.1 Gender Distribution

Table 4.2 shows that the majority of respondents were females with 70 respondents (58.3%) with the males 50 (41.7%). This shows that the participation rate of female customers of Hijra Bank Bethel Ansar Branch is a bit higher.

Table 4.2 Gender Distribution

Gender	Frequency	Percentage (%)
Female	70	58.3
Male	50	41.7
Total	120	100.0

4.3.2 Age Distribution

As can be seen from Table 4.3 the largest age group in the population was age group 25 – 34 years with 62 respondents (51.7%). The 31 people (25.8%) in the below 25 years age category were followed by the 18 (15.0%) in the 35-44 years age group and the 9 (7.5%) in the 45 and above age group. This means that most digital banking users at Hijra Bank are young adults – between 25 and 34 years of age.

Table 4.3 Age Distribution

Age Category	Frequency	Percentage (%)
Below 25 years	31	25.8
25–34 years	62	51.7
35–44 years	18	15.0
45 years and above	9	7.5
Total	120	100.0

4.3.3 Educational Level

As seen in Table 4.4, most of the respondents were in the Bachelor's degree category with 38.3% (46 respondents). Those with an educational level in the "Other" category were the next largest group with 32 (26.7%) followed by Master's degree or above with 26 (21.7%) and Diploma with 16 (13.3%). It can be inferred that the majority of the users of digital banking products of Hijra Bank Bethel Ansar branch are educated at Bachelor's degree level.

Table 4.4 Educational Level

Educational Level	Frequency	Percentage (%)
Diploma	16	13.3
Bachelor's Degree	46	38.3
Master's Degree and Above	26	21.7
Other	32	26.7
Total	120	100.0

4.3.4 Digital Banking Service Used

Table 4.5 indicates that the predominant digital banking service being used by the respondents was mobile banking only with 58 respondents (48.3%) using mobile banking only. A significant number of respondents (34 respondents, 28.3%) used a combination of mobile banking, ATM, and USSD services. Each of the 4 respondents used internet banking only and USSD service only (3.3% each). 2 respondents (1.7%) used only ATM. 6 respondents (5.0%) used other combinations and 12 respondents (10.0%) did not specify which services they used. This means that Hijra Bank Bethel Ansar's dominant channel for digital banking is mobile banking among the customers of the bank's Bethel Ansar branch.

Table 4.5 Digital Banking Service Used

Service Type	Frequency	Percentage (%)
Mobile Banking Only	58	48.3
Mobile Banking, ATM and USSD Services	34	28.3
Internet Banking Only	4	3.3
USSD Service Only	4	3.3
ATM Only	2	1.7
Other Combinations	6	5.0
Not Specified	12	10.0
Total	120	100.0

4.4 Descriptive Statistics of Study Variables

Descriptive statistics of the study variables was presented using tables (4.4).

Means and standard deviations for each study variable (measured on a five-point Likert-type scale ranging from Strongly Disagree (1) to Strongly Agree (5), are shown in Table 4.6.

Table 4.6 Descriptive Statistics of Study variables

Variable	N	Mean	Std. Deviation
Digital Literacy	120	4.14	0.63
Customer Trust	120	4.16	0.65
Customer Awareness	120	4.20	0.53
Cash Preference	120	2.99	1.22
Digital Banking Adoption	120	3.74	0.78

The findings reveal that the mean score on digital literacy reported by Hijra Bank Bethel Ansar customers is 4.14, indicating high level of digital literacy, the mean score on customer trust is 4.16, indicating high level of customer trust, the mean score of customer awareness is 4.20, indicating high level of customer awareness, and the mean score on digital banking adoption is 3.74 indicating that the customers are having high level of digital banking adoption in Hijra Bank Bethel Ansar. The preference for cash was moderate (2.99); that is, customers were neither strongly in favor nor strongly against cash purchases. The standard deviations reveal that cash preference was the most varied of all preferences (SD = 1.22), which implies that customers' perceptions of cash usage are quite different.

4.5 Reliability Analysis

To examine the internal consistency for each measurement scale, Cronbach's alpha coefficients were calculated. The criterion of 0.70 or higher is considered to be acceptable reliability (Nunnally & Bernstein, 1994; Hair et al., 2019).

Table 4.7 Reliability Analysis Result

Variable	Number of Items	Cronbach's Alpha	Interpretation
Digital Literacy	5	0.832	Good
Customer Trust	5	0.842	Good
Customer Awareness	5	0.707	Acceptable
Cash Preference	5	0.924	Excellent
Customer Adoption Of Digital Banking	5	0.806	Good

The internal consistencies of all five constructs were above the acceptable level of Cronbach's alpha (0.70). The items used to measure preference for cash had a high level of reliability (α = 0.924), while digital literacy, customer trust and digital banking adoption had good reliability (α = 0.832), (α = 0.842) and (α = 0.806), respectively. There was an acceptable reliability of customer awareness (α = 0.707). Based on these results, it is concluded that the measurement scales are reliable for the purpose of hypothesis testing.

4.6 Correlation Analysis

The Pearson correlation coefficients among the study variables are given in table 4.8. Pearson correlation analysis was used to analyze the relationships between the study variables in terms of strength and direction. Correlation coefficients vary from -1 to +1, with a positive value showing positive relationship, negative value showing an inverse relationship, and closer to 0 showing a weak relationship.

Table 4.8: Pearson Correlation Matrix

Variables	DL	CT	CA	CP	DBA
Digital Literacy (DL)	1.000				
Customer Trust (CT)	0.691	1.000			
Customer Awareness (CA)	-0.042	0.023	1.000		
Cash Preference (CP)	0.149	0.269	-0.039	1.000	
Customer Adoption Of Digital Banking	0.536	0.586	-0.038	0.327	1.000

The results show that Digital Literacy has a moderate positive correlation to Customer Adoption Of Digital Banking (r = 0.536), which implies that digital literacy level of customers has a strong positive correlation with their level of digital banking adoption.

Furthermore, Customer Trust shows a moderate positive correlation with Customer Adoption Of Digital Banking (r = 0.586), suggesting that an increase in customer trust in the bank's digital banking platforms correlates with an increase in digital banking adoption.

The level of Customer Awareness has a weak negative correlation with Customer Adoption Of Digital Banking (r = -0.038). This implies that there is a possibility of not seeing the adoption behaviour in the customers, just by being aware.

There is a relatively weak positive correlation between Cash Preference and Customer Adoption Of Digital Banking (r = 0.327). It indicates that certain customers may be leveraging digital banking services, but still prefer cash-based interactions.

The correlations among the independent variables do not exceed the acceptable level of 0.80, and this further supports that multicollinearity is not a concern for the study.

Based on the correlation results, on average, Digital Literacy and Customer Trust are positively correlated with Customer Adoption of Digital Banking, whereas Customer Awareness has a low impact on the adoption behavior.

4.7 Diagnostic Test for Multiple Linear Regression

A number of diagnostic tests were performed to verify the assumptions of multiple linear regression before an estimation of the regression model. Assumptions like linearity, independence of error, normality of error terms, homoscedasticity, and no multicollinearity (Gujarati & Porter, 2009; Hair, Black, Myers, & Bashandy, 2019) are made.

4.7.1 Linearity Test

Linear assumption entails that the relationship between the dependent variable and each of the independent variables be linear. Pearson correlation was used to explore the association between the variables of the study. Correlation co-efficient between each independent variable with adoption of digital banking by customers was calculated. Digital literacy had moderate positive correlation (r = 0.536), customer trust had moderate positive correlation (r = 0.586), cash preference had moderate positive correlation (r = 0.509) and customer awareness had very weak negative correlation (r = -0.052). Scatter graphs were drawn to check that the relationships were roughly linear (straight) and that there was no noticeable curvature.

Further, the correlations between the independent variables were between -0.042 and 0.691, none of which were very high that would be likely to compromise the regression model. So it was assumed that the relationship was linear.

4.7.2 Independence of Errors (Autocorrelation) Test

The independence of residuals assumption implies that residuals are independent. Durbin-Watson statistic was used to test this assumption. The values near to 2 suggest that the data is independent, values near to 0 suggest positive autocorrelation and values near to 4 suggest negative autocorrelation (Gujarati & Porter, 2009).

Table 4.9 Durbine-Watson Test Result

Statistic	Value
Durbin-Watson	1.590

The value of Durbin-Watson statistic is 1.590 which lies within the range of 1.5 and 2.5 (Gujarati & Porter, 2009), suggesting that the residuals are independent and that autocorrelation is not a problem in the regression model. Thus, the assumption of independence of errors is upheld.

4.7.3 Normality of Residuals

The normality assumption is that the errors (residuals) must be approximately normal. A histogram of standardized residuals and a normal probability (Q-Q) plot (Field, 2018) were used to test this assumption.

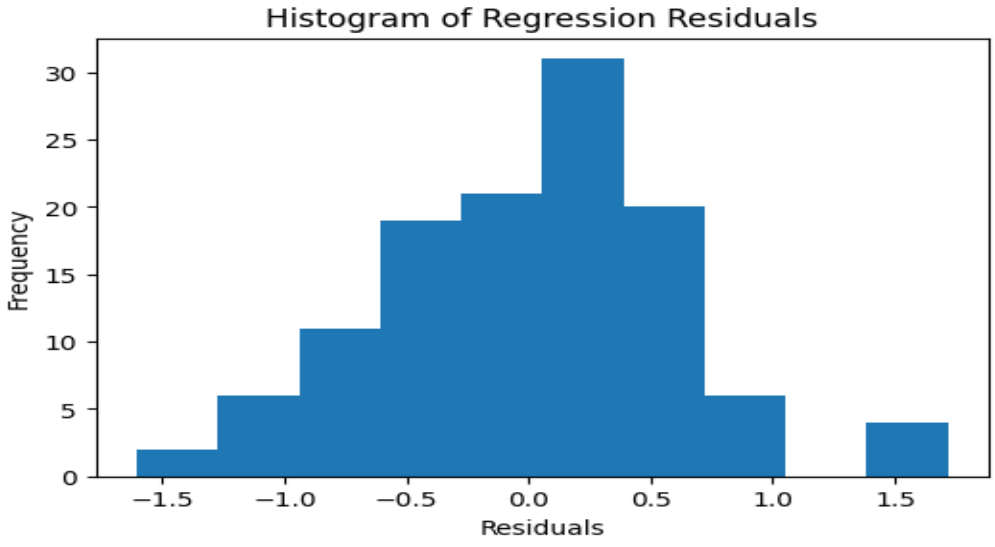


Fig. 4.1 Histogram of Standardized Residuals

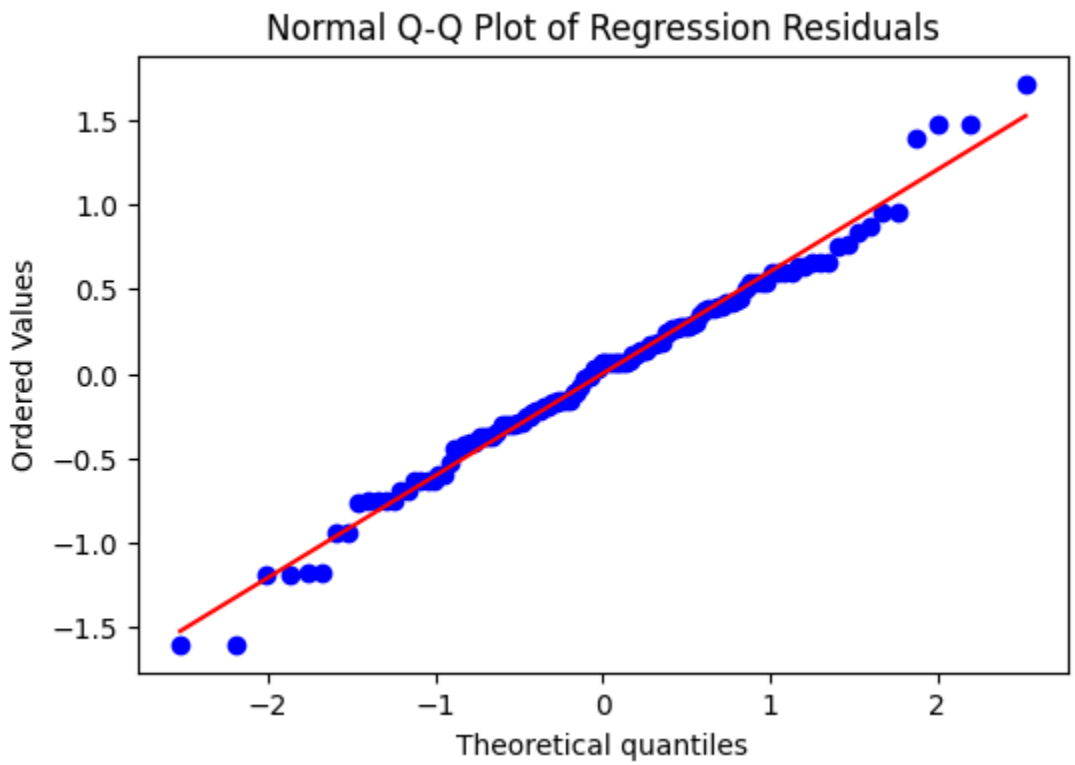


Fig. 4.2 Normal Q-Q Plot of Standardized Residuals

No major deviations from the diagonal reference line were seen in the points in the Q-Q plot. For this size of sample (n = 120) minor deviations at the tails are acceptable. So the assumption of normality of residuals is met.

4.7.4 Homoscedasticity Test

The assumption that the variance of residuals is constant over all values of the predicted values is called homoscedasticity. Non-constant variance (heteroscedasticity) may result in inefficient estimates and incorrect standard errors. A scatterplot of standardized residuals vs standardized predicted values (Field, 2018) was used to assess this assumption.

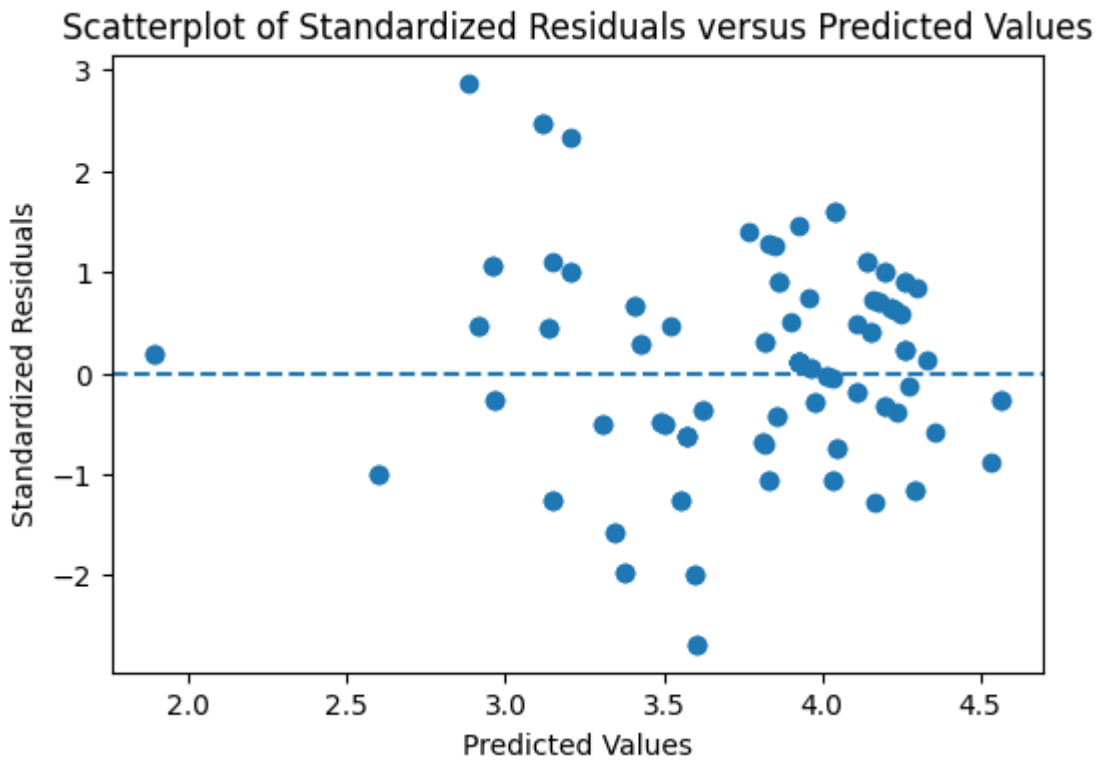


Fig. 4.3 Scatterplot of Standardized Residuals versus Predicted Values

The scatterplot showed no funnel-shaped or systematic pattern; just a random pattern of points around the horizontal axis. The points were distributed fairly equally on either side of zero for each of the predicted values. This means that the scatter of the residuals was not significantly changed by the trend as the values change. This suggests that the scatter of the residuals was not significantly altered by the trend of the values. Thus, the assumption of homoscedasticity is fulfilled.

4.7.5 Multicollinearity Test

Multicollinearity assumption: The independent variables should be little correlated. The Variance Inflation Factor (VIF) was used for the multicollinearity of the model. If the value is more than 5 or 10 it means there is problematic multicollinearity; otherwise, it is acceptable (Hair et al., 2019).

Table 4.10 Variance Inflation Factor

Variable	VIF
Digital Literacy	1.93
Customer Trust	2.03
Customer Awareness	1.01
Cash Preference	1.08

The VIF values obtained were in the range of 1.01 – 2.03, which is significantly lower than the widely accepted threshold value of 5.0 (Hair et al., 2019). The highest VIF was for customer trust (2.03) followed by digital literacy (1.93). The values of these indicate that the multicollinearity issue is not an issue in the regression model, and all four independent variables can safely be included in the regression.

4.7.6 Summary of Diagnostic Tests

Table 4.11 Summary of Regression Assumption Tests

Assumption	Test Used	Result	Status
Linearity	Pearson correlation and scatter plots	Linear relationships confirmed	Satisfied
Independence of errors	Durbin-Watson	1.590	Satisfied
Normality of residuals	Histogram and Q-Q plot	Approximately normal distribution	Satisfied
Homoscedasticity	Residual scatter plot	Random distribution, no pattern	Satisfied
Multicollinearity	VIF	All VIF < 5	Satisfied

The results of the diagnostic tests shown in Table 4.11 indicated that all the assumptions for the Multiple Linear Regression were satisfied. Thus, it was considered appropriate to estimate the regression model and to test the proposed hypotheses, with confidence in the validity of the estimated model.

4.8 Regression Analysis and Hypothesis Testing

Multiple linear regression analysis with Ordinary Least Squares (OLS) was used to analyze the effect of digital literacy, customer trust, customer awareness and preference for cash on digital banking. All the assumptions of multiple regression were checked and found to be met before the analysis. The regression results are shown in Table 4.12.

Table 4.12 Multiple Regression Results

Variable	Coefficient (β)	Std. Error	t-value	p-value
Constant	0.457	0.612	0.747	0.456
Digital Literacy (DL)	0.325	0.124	2.616	0.010
Customer Trust (CT)	0.428	0.123	3.488	0.001
Customer Awareness (CA)	-0.043	0.108	-0.395	0.693
Cash Preference (CP)	0.124	0.048	2.570	0.011

Model Summary:

Statistic	Value
R^2	0.412
Adjusted R^2	0.391
F-statistic	20.11
Prob (F-statistic)	0.000
Durbin-Watson	1.590
Sample Size (N)	120

Source: Researcher's Computation Using Google Colab(2026)

The regression model is statistically significant ($F = 20.11$, $p < 0.001$), indicating that the independent variables jointly explain variations in digital banking adoption among customers of Hijra Bank.

The regression model is statistically significant ($F = 20.11$ and $p < 0.001$) meaning that the independent variables considered have explanatory power for the dependent variables (Digital banking adoption among customers of Hijra Bank).

The overall coefficient of determination ($R2 = 0.412$) suggests that digital literacy, customer trust, customer awareness and cash preference explain about 41.2% of the variance in digital banking adoption. The other 58.8% of the variance is due to factors not captured by the model.

The adjusted R^2 value of 0.391 means that even after adjusting the number of predictors, the model accounts for around 39.1% of the variation in digital banking adoption.

Hypothesis Testing

H1: Digital Literacy is a positive experience for the customer, enhancing the digital literacy experience for customer's increases digital banking adoption.

The digital literacy regression coefficient is statistically significant and positive ($\beta = 0.325$, $p = 0.010$).

The result suggests that the greater the digital literacy of customers, the more they are likely to adopt digital banking.

Thus, it is concluded that H1 is supported.

H2: Positive Customer Trust is a Drivers of Digital Banking Adoption.

Digital banking adoption is positively and statistically significantly related to customer trust ($\beta = 0.428$, $p = 0.001$).

The result indicates that customers who believe that digital banking systems are secure, reliable, and effective, are more likely to use digital banking services.

Hence, H2 is assisted.

H3: The research concludes that raising customer awareness has a positive impact on digital banking adoption.

The research findings show that customer awareness positively affects digital banking adoption.

Coefficient for customer awareness is negative, and statistically insignificant ($\beta = -0.043$, $p = 0.693$).

The p value is greater than 0.05, suggesting that the respondents' awareness of digital banking is not significant enough to impact the respondents' adoption of digital banking.

As a consequence, H3 is not supported.

H4: Cash Preference has a negative impact on Digital Banking Adoption

There is a positive and significant coefficient for cash preference ($\beta = 0.124$; $p = 0.011$).

The relationship is in the opposite direction of the hypothesized relationship, though the variable has an impact on digital banking adoption.

The hypothesis stated that there will be a negative relationship between the two variables, but the actual relationship is positive.

So, H4 is disproved.

4.9 Summary of Hypothesis Testing

Table 4.13 Summary of Hypothesis Testing

Hypothesis	Statement	Result
H1	Digital literacy positively influences digital banking adoption	Supported
H2	Customer trust positively influences digital banking adoption	Supported
H3	Customer awareness positively influences	Not Supported

	digital banking adoption	
H4	Cash preference negatively influences digital banking adoption	Rejected

The findings suggest that digital literacy and customer trust are significant and positively related to digital banking adoption of Hijra Bank customers. It was determined that there was no statistically significant impact of customer awareness on adoption. While cash preference has a strong impact, the direction of the impact was positive and not as hypothesized to be negative. Thus, the hydrogen atoms in H1 and H2 were supported, but not those in H3 and H4.

4.10 Discussion and Findings

The main purpose of the study was to explore the effect of digital literacy, customer trust, customer awareness and cash preference on digital banking among the customer of Hijra Bank. Among the findings were that digital literacy and customer trust had significant impact on digital banking adoption, while customer awareness did not. The direction of the relationship between cash preference and digital banking adoption was not as hypothesized and was statistically significant.

4.10.1 Digital Banking and Digital Literacy

The results showed that digital literacy had positive and statistically significant effects on digital banking adoption ($p = 0.010$, $\beta = 0.325$). This implies that people who are more adept in using mobile applications or the internet and other digital tools are more likely to embrace digital banking. The result aligns with the Technology Acceptance Model which explains that ease of use depends on how competent the customers are with the technology; more competent customers are more likely to perceive the digital banking platforms as easier to use, which increases the perceived ease of use and in turn, the perceived usefulness.

The result is in line with previous empirical studies. Almost 15 years later in the context of this study, it was found that digital-skills limitations were an important structural barrier to the adoption of electronic banking in Ethiopia, a finding echoed almost exactly by Bekele (2015). Digital literacy is also a key construct that is independent of and complementary to the perceived ease of use and perceived usefulness constructs, and was considered significant by Sharma and Kumar (2025) in their research on Indian online banking customers. In a similar study, Legass

and Durmuş (2024) directly examined Ethiopian Islamic mobile banking customers to reveal digital competence as one of the drivers for the adoption of Islamic mobile banking. Combined with the current results, this implies that the digital-literacy effect on adoption could be relatively stable for both traditional and interest-based banking in Ethiopia, despite the significant differences in the structures and compliance of the products.

4.10.2 Customer Trust and Digital Banking

The study revealed that the effect of customer trust on digital banking adoption is positive and significant ($\beta = 0.428$; $p = 0.001$) which is the highest among the four predictors. This suggests that customers that view digital banking platforms as being secure, reliable, and protecting their financial and personal information are much more likely to use these services, consistent with trust-augmented extensions of TAM in which trust lowers perceived risk and increases perceived usefulness, especially in situations in which transactions do not require face-to-face verification.

This was in line with the findings of Esendemirli et al. (2024) who discovered that the most influential factors on youth acceptance of digital banking in Nigeria are perceived trust, and Awoniyi (2022) who reported that constructs related to security had the greatest influence on both mobile and internet banking adoption in Nigeria. Interestingly, however, this is contrary to Alnemer (2022) who concluded that, despite positive perceptions of ease of use and perceived usefulness, the perception of trust had a negative and significant marginal impact on digital banking adoption amongst Saudi consumers. This divide is not something that should be ignored, and a possible reason for this is that in more digitally mature markets like Saudi Arabia, those customers with higher levels of institutional trust may feel secure enough using the conventional banking channel and may not consider a digital channel as an alternative mechanism to obtain the same services, but in the Ethiopian interest-free banking market, where the total customer experience with formal banking channels is lower and digital banking is relatively new, trust may be more of an enabling condition than a competing one.

The centrality of trust in this study also has a dimension that is unique to the study of interest-free banks that is not observed in conventional-bank studies – that customers of Hijra Bank are not just assessing the security of the platform, but also its trustworthiness as a Sharia-compliant bank from a religious and operational standpoint. This is in line with the research conducted by Suhartanto et al. (2019) which reported that “religiosity influenced the adoption decision related

to trust in Islamic mobile banking" and with Legass et al. (2025) who reported that "Sharia compliance was one of the strongest determinants of customer satisfaction with the Islamic digital banking services in Ethiopia". In this study, trust may not only be associated with platform reliability in the general TAM context but also with trust in the platform to function with interest-free principles, which is not needed in conventional-bank studies.

4.10.3 Customer Awareness and Digital Banking

In contrast, contrary to expectation, customer awareness was not a statistically significant predictor of digital banking adoption ($\beta = -0.043$, $p = 0.693$), even though it had the highest mean score (4.20) among all variables measured in the study. This is a result that is counter-intuitive, but it can be theoretically explained. Rogers' Diffusion of Innovation Theory describes the Knowledge stage as a prerequisite for adoption but not the only precondition i.e. customers need to go through the Persuasion and Decision stages, which are more directly influenced by trust and competence than the Knowledge stage before they move to the use of the product. However, as seen in this sample, this awareness variable was already ubiquitous across respondents – few people lacked knowledge of it and it therefore did not show much variation across the sample – and so was not really suitable to the usual requirement of the log-line: to be a "ceiling-effect" variable, that is, present in almost everyone and so unable to statistically differentiate adopters from non-adopters, but nonetheless an implicit precondition for any adoption occurring at all.

This result is different from that of Sathye (1999) and Bekele (2015) who both found lack of awareness to be one of the major challenges in the adoption of electronic banking. The difference can be understood by the difference in the population studied; the former studies were conducted in early stage of awareness where there was a significant variation across the population, while the present study was conducted on existing bank customers of the Hijra bank where the customers may have passed the awareness threshold before that customers were surveyed. In a similar vein, Nepal and Nepal (2023) identified that performance expectancy and social influence (which are both closely related to the cognitive/social dimensions of awareness) failed to significantly explain digital banking adoption among commercial bank customers in Nepal, whereas habit and effort expectancy did. The relationship between awareness-type variables and other more behavioural and competence-based variables, such as trust and digital literacy,

suggests that, once customers are already integrated into a bank's digital environment, the explanatory power of the awareness variables is less pronounced compared to the other variables, much less when the latter variables are included in the model: this was indeed the case in this study.

4.10.4 Cash Preference and Digital Banking

The study assumed that cash preference would negatively relate to digital banking adoption and the regression results showed a positive and statistically significant relationship ($\beta = 0.124$, $p = 0.011$) which contradicted the assumed negative relationship. It means that customers who like and prefer cash transactions were not less likely to switch to digital banking, but were slightly more likely in this sample.

One explanation is that "adoption" was measured as a general outcome, rather than an outcome for each transaction. In this study, the qualitative answers provide the explanation: Customers said they used digital channels to check balances and to get funds, but still used cash for spending and withdrawals. This is in line with the concept of ‘hidden defection' in digital banking, as has been introduced by Son et al. (2020), which refers to those who, by traditional digital banking usage, are seen as active digital adopters, but only for a small number of transactions and switch to other channels for the rest. From this perspective, high cash-preference scores might not necessarily mean that customers prefer cash over digital banking, but high scores on both might mean that both are used by customers for different types of transactions rather than one or the other.

This discovery is in contrast to research in other, more cash-poor digital-savvy markets. Esendemirli et al. (2024), in their study of a sample from Vietnam, had a moderated negative relationship between habit and intention to use newer digital channels, as originally hypothesized, with established cash based routines playing a part in this relationship. The contrast suggests that the relationship between cash preference and digital adoption may be context-dependent on how embedded cash is in the broader payment infrastructure: in economies such as Ethiopia, where Bekele (2017) notes that cash remains the dominant means of transacting even as digital access expands, cash preference may reflect entrenched necessity (limited merchant-side digital payment acceptance, infrastructure gaps) rather than a deliberate behavioral resistance to digital tools — meaning customers adopt digital banking for the

transaction types it serves well, while continuing to rely on cash where infrastructure or habit makes it the more practical option.

4.10.5 Qualitative Insight From Respondent

In addition to the quantitative results, respondents gave follow-up qualitative comments about their digital banking habits. Some of the respondents mentioned that they mostly visit Hijra Bank Bethel Ansar branch as a savings banker where they deposit money and sometimes also inquired about their balance or got money transferred digitally. But when it comes to cashing a check or paying bills, they'd rather go to the branch than do so via digital banking when it's time to buy something.

This feedback contributed to two findings of this study. First, it explains that cash preference had a positive impact on digital banking adoption and not a negative one. While convenient services like checking balance and receiving funds are done digitally, they would still opt for cash if it came to actual spending and withdrawals. Digital banking and cash are not substitutes, but are used together. Secondly, it helps in understanding why there was no significant influence of customer awareness on adoption. The mean score for awareness (4.20) indicated that customers were knowledgeable about digital banking services, but this was not enough to encourage the adoption of the channel for buying services as they view the bank as a saving institution more than a buying platform.

The finding implies that the customers' mental model of Hijra Bank Bethel Ansar branch could impact their digital banking habits. When customers think of the bank, they think it's a savings institution, rather than a payment service provider, this could reduce their adoption of digital banking for everyday use. In addition to savings and balance checks, bank managers can leverage digital banking to help customers gain a new perspective on it as a payment, purchase and everyday financial management tool.

4.10.6 Overall Discussion

The regression model accounted for 41.2% of the variation in digital banking adoption (R^2 = 0.412, F = 20.11, $p < 0.001$), which was a relatively high result compared to the other TAM-based studies found in the literature. To provide some perspective, Awoniyi (2022) found that the present model explained significantly more variance in the adoption behavior in the context of Nigeria's banking industry, with adjusted R^2 values of 0.255 for mobile banking and 0.270 for

internet banking, which were found in a smaller sample population (single-branch banks) compared to the present study. Although the number of customers and the types of institutions of this study are not as large as some of the comparison studies, it does indicate that, with regards to the specific model of interest free banking investigated here, having a higher level of digital literacy and trust are significant explanatory variables.

When read together, the pattern of the four hypotheses is also one coherent story. The two key positive predictors, digital literacy and trust, are both capability and confidence variables — they show what a customer can do and how he feels about his ability. In this sample, in contrast, there was no causal role for customer awareness and there was a parallel role for customer cash preference.In this sample, customer awareness was present but not differentiating and customer cash preference was parallel but not competing. This distinction puts the central finding of this study into a new perspective: the adoption of digital banking is not necessarily dependent on customers' awareness of or cultural preference for cash, but rather on how digitally capable they are and how they feel about trustworthy digital banking in the context of Ethiopian interest-free banking.

Chapter Five

Summary, Conclusions, and Recommendations

5.1 Introduction

This chapter briefly summarizes the study, summarizes the conclusions from the presentation of the results in Chapter Four, discusses the theoretical and practical implications of the study, recognizes the limitations of the study, and recommends some implications for bank managers, policymakers, and future researchers. Finally, the chapter discusses the implications for the study's findings to the understanding of the digital banking adoption process of interest free banks in Ethiopia, more specifically, Hijra bank's Bethel Ansar branch in Addis Ababa.

5.2 Summary of the Study

The aim of this study was to investigate the factors affecting the adoption of digital banking in interest-free banks, with the support of four customer-related factors, namely, digital literacy, customer trust, customer awareness and cash preference. The Technology Acceptance Model (TAM) was used as the main theory for guiding the study. Technological and organizational factors were assumed to be contextual conditions that create an enabling environment for customers' adoption, and were not included as variable predictors, because these factors are relatively homogeneous across all customers in a single-bank case study.

This study was carried out in the Bethel Ansar Branch of Hijra Bank in Addis Ababa, Ethiopia. The branch was chosen purposively as it is one of the topperforming branches in Addis Ababa and has large numbers of its users using digital banking tools, specifically 4,197 mobile banking users, 578 ATM cardholders, and 6,728 USSD users. A structured questionnaire was used for data collection with 120 customers. Digital Literacy, Customer Trust, Customer Awareness, Cash preference and Digital Banking adoption were measured on 5 point Likert scales in the questionnaire. Descriptive statistics, reliability analysis (Cronbach's alpha), Pearson correlation and multiple linear regression (OLS) were used to analyze the data.

The following questions were raised in the study:

- How much digital literacy is affecting the use of digital banking by the customers of Bethel Ansar Branch, Hijra Bank?

- How important is customer trust on the use of digital banking among the customers of Bethel Ansar Branch, Hijra Bank?
- How customer awareness affects in Hijra Bank's Bethel Ansar Branch digital banking?
- How much does cash preference affect customers' selection of digital banking at the Bethel Ansar branch of Hijra Bank?

The study tested four hypotheses:

- H1: Digital literacy is positively correlated with the adoption of digital banking by customers.
- H2: Consumer trust plays a very positive role in customer's digital banking adoption.
- H3: The findings indicate that customer awareness has a significant positive effect on customer adoption of digital banking.
- H4: There is a significant negative relationship between cash preference and adoption of digital banking.

5.3 Summary of Key Findings

The four customer-related factors were statistically significant ($F = 20.11$, $p < 0.001$) and accounted for 41.2% with an R-squared value of 0.412 variance in the digital banking adoption of customers of Bethel Ansar Branch of Hijra Bank.

Table 5.1 Summary of Key Findings

Research Question	Finding	Hypothesis Result
To what extent does digital literacy influence adoption?	Digital literacy had a significant positive influence ($\beta = 0.325$, $p = 0.010$)	H1: Supported
To what extent does customer trust influence adoption?	Customer trust had a significant positive influence ($\beta = 0.428$, $p = 0.001$)	H2: Supported
To what extent does customer awareness influence adoption?	Customer awareness did not have a significant influence ($\beta = -0.043$, $p = 0.693$)	H3: Not supported
To what extent does cash preference influence adoption?	Cash preference had a significant positive influence ($\beta = 0.124$, $p = 0.011$)	H4: Not supported (opposite direction)

The qualitative feedback received from the respondents in the Bethel Ansar Branch showed that the customers use Hijra bank basically as a saving bank. They are digital bankers in that they check their account balance and receive funds online, but when they need to withdraw or spend funds, they prefer to go to the branch. This understanding helps to account for the positive influence of cash preference on adoption and the lack of correspondence between awareness and adoption behavior.

5.4 Conclusions

Following are the conclusions of the study about the customers of Hijra Bank's Bethel Ansar Branch:

Conclusion 1: Digital Literacy is a major factor in the adoption of Digital Banking by the customers. Digital literacy customers are more confident and competent in their use of digital banking platforms. This discovery confirms the Technology Acceptance Model that states that perceived ease of use plays a role in the decision to adopt technology. The average score on the digital literacy scale (4.14/ 5) suggests that the customers of Bethel Ansar Branch have the required level of digital literacy to access digital banking products and services.

Conclusion 2: Customer trust plays a crucial role in customer adoption of digital banking. When consumers believe that they are safe from the potential risks of digital banking and that their personal data is secure with the bank, they are more willing to engage with digital banking. The strongest positive predictor was trust ($\beta = 0.428$) and it is clear that it must continue to be a priority for the branch to invest in building trust.

Conclusions 3: There is no significant influence between customers awareness and digital banking adoption in Bethel Ansar Branch. The mean score of customer awareness is very high (4.20 out of 5) and the standard deviation is very low (0.53) indicating that customer awareness of digital banking services is already high. The number of respondents did not provide adequate statistical power to identify an effect, with little variation in awareness among the respondents. Awareness may no longer be a barrier at this branch, as customers are already well-informed.

The fourth conclusion is that cash preference is not a negative factor when it comes to digital banking adoption – it has a strong positive impact. This result is in contrast to the hypothesized negative correlation. Bethel Ansar's customers don't seem to be using cash and digital banking services as mutually exclusive options. Convenience functions on digital banking (money checking, getting money) and cash for actual spending and withdrawals.

Conclusion 5: Customers consider Hijra bank Bethel Ansar Branch as a savings bank, not a payment bank. Qualitative feedback also showed that customers are saving money at the bank and are using digital banking to perform basic transactions, but prefer to visit the branch for spending and withdrawals. This attitude could restrict the adoption of digital banking in the case of purchases.

5.5 Theoretical Implications

This study contributes to the existing knowledge on digital banking adoption in several ways.

Extension of the Technology Acceptance Model (TAM): The study empirically supports the extension of TAM which introduces digital literacy and trust as customer related factors in the context of Hijra Bank's Bethel Ansar Branch. This study shows that digital literacy and trust are important predictors of adoption in the context of interest-free banking in Ethiopia. Although traditionally perceived usefulness and perceived ease of use are important factors in TAM, this study also shows that digital literacy and trust are important factors.

Extension to interest-free banking context: The study adds to the scanty literature on digital banking adoption in interest-free banks in Ethiopia. The study is different from previous research studies, which examined conventional banking environments, in that it was conducted in a complete interest-free bank in a particular branch in Addis Ababa.

Surprising result on cash preference: The positive link between cash preference and adoption of digital banking runs counter to a common assumption that cash preference is always a driver of digital banking adoption. This discovery indicates that, in cash-dominated economies, customers can use digital banking as an ancillary channel to cash instead of replacing it. This has implications for future studies of payment behaviour in developing economies.

The non-significant result for customer awareness indicates that when awareness is at a certain point it could no longer be a differentiating factor for the adoption. This was the case for the Bethel Ansar Branch where awareness was high across all respondents, and where differences in adoption behaviour were not explained by awareness.

5.6 Practical Implications

On the basis of the study results the following suggestions are made for the managers of Hijra Bank especially for the Bethel Ansar Branch.

Recommendation 1: Continue to enhance digital literacy among customers. Given that digital literacy has been shown to positively impact adoption, there are continued opportunities for branch managers to invest in customer education programs. This might involve providing digital literacy training sessions in the branches, easy-to-use video tutorials, customer help for those that struggle with digital, or user friendly mobile banking apps. Older clients and those with less education should be targeted especially.

Recommendation 2: Enhance customer trust by conveying clear information and security guarantees. The level of customer trust was the most significant factor related to adoption. Trust should be fostered further through the communication of security protocols, the sharing of information about how the data of their customers will be handled, the responsiveness to problems with their digital banking and the display of security certifications. Providing regular communications with customers about the new security features can help maintain customer confidence.

Recommendation 3: Review strategy of customer awareness. Awareness did not have a significant impact on adoption, but that doesn't indicate that there's no need to do awareness work. There is a high level of awareness at Bethel Ansar Branch, indicating that the work done is effective. Managers need to keep up to date awareness levels, but do not necessarily need to step up awareness campaign investment. Digital literacy and trust building could be better resourced.

Recommendation 4: Do not underestimate the ability of cash-preference to not be a blocker on digital adoption. If customers who want cash are resistant to digital banking, then the branch manager is wrong. If branch managers see customers who want cash as being non-compliant with digital banking, they are mistaken. Rather, they should build digital banking products that add to and not supplant cash. These customers may be interested in ease of moving money from digital wallets to cash accounts, cash-back rewards for digital transactions and digital banking integration with cash-based merchant networks.

Recommendation 5: Change how customers see the bank as a payment service provider. Through the qualitative insights, it has been found that people consider Hijra Bank as a savings bank. Bethel Ansar Branch managers might think about using digital banking as a good payment option for daily transactions. Customer education campaigns can show how digital banking can be used to make purchases, pay bills, make payments to merchants and transfer funds. Digital payment partnerships could engage consumers by allowing them to pay for their goods and services via digital banking apps – a method they might not do if they could only save via the same.

5.7 Policy Implications for Regulators

The results of this study also have policy and regulatory implications for Ethiopia's policy and regulatory actors, such as the National Bank of Ethiopia.

Implication 1: Foster national efforts for digital literacy. Policymakers should take into account the need to support the cross-country digital literacy programmer, especially those focusing on older age groups and those with less education.

Implication 2: Enforce the protection framework to provide consumer trust. Therefore, the regulators need to bolster consumer protection in digital banking, as trust is an important factor in adoption. This will involve transparent rules in relation to data privacy, dispute resolution

processes, liability rules regarding unauthorized transactions, and transparency rules for digital banking services.

Implication 3: Account for continued cash usage when designing digital payment policy. Since cash preference was found to have a positive association with digital banking adoption rather than a negative one, policymakers should not assume that promoting digital banking requires phasing out cash. Regulatory efforts aimed at expanding digital financial services should account for the fact that customers may continue to use cash for certain transactions regardless of their digital banking activity, and should be designed in a way that does not penalize or restrict customers' continued access to cash-based options.

5.8 Limitations of the Study

There are a number of limitations of the study that should be considered when interpreting the findings.

Firstly, the study was limited to the Bethel Ansar Branch of Hijra Bank, in Addis Ababa, and to a particular interest-free bank, Hijra Bank. Thus, the results cannot be extrapolated to other branches of Hijra Bank, other interest-free banks in other parts of Ethiopia, and customers in other locations.

Secondly, self-reported data was obtained by using structured questionnaires. They might have been swayed by social desirability bias, memory lapses and personal views on digital banking services.

Third, that the study was conducted in a cross-sectional design, which means that the perceptions of the customers and their adoption behaviour were measured in one go. The analysis will find relationships between variables, but may not determine causality.

Fourth, the study was limited to four factors relating to customers and didn't investigate other factors that could be related to the adoption of this technology like perceived cost, social influence, facilitating conditions, and demographic interactions.

Fifth, the convenience sampling method was employed which can be practical for theory-testing studies, but can reduce the representativeness of samples.

Sixth, the qualitative data were collected from open-ended answers to the questionnaire, not in-depth interviews. Further research could follow on interviews to further explore these insights.

5.9 Recommendations for Future Research

Due to the nature of this study and the unexpected results, the following recommendations are made for future research.

Recommendation 1: Expand to multiple branches and banks. Future studies should cover several branches of Hijra Bank in various locations and other interest-free banks in Ethiopia to determine if the factors that influence the adoption of interest-free banking depend on the particular context of the bank.

Recommendation 2: Carry out qualitative studies. Qualitative interviews with customers at the Bethel Ansar Branch might yield more depth to the understanding of motivations for customers to consider the bank as a savings institution, and on how customers decide to use digital banking channels versus cash.

Recommendation 3: Explore further the positive cash preference finding. Research on customer preferences for cash and digital banking through qualitative research (focus groups, interviews) might give insight into why customers who prefer cash also use digital banking and how digital banking can be better designed to cater to these customers.

Recommendation 4: Add more factors related to customers. Future studies should expand the model by adding factors like perceived cost, social influence, facilitating conditions, perceived risk, and demographic factors, as moderators or additional predictors.

Recommendation 5: Ensure that objective measures of adoption are used. Future studies can leverage additional objective measures of the use of digital banking provided by bank records to complement self-reported adoption data.

Recommendation 6: Carry out follow-up studies. Taking a look at trends within the customer base could also shed light on causal relationships and how customer-related factors change over time as the customers become more accustomed to digital banking.

5.10 Chapter Summary

The study was summarized, conclusions were drawn from the empirical findings from the customers of Hijra Bank Bethel Ansar Branch, theoretical implications, limitations and recommendations were discussed to the bank managers, policies makers and future researchers.

Based on the findings of the study, the researchers found that the digital literacy and customer trust has a significant positive relationship with digital banking adoption in the Bethel Ansar Branch, thus supporting H1 and H2. The customer's awareness did not show significant influence and cash preference showed significant positive influence (opposite to the hypothesized direction). Digital banking adoption was 41.2% explained by the regression model.

The qualitative findings showed that the Hijra Bank is the bank of saving and the customers preferred to visit the bank's branch to withdraw and spent their money, whereas they used digital banking mainly for their balance check and receiving money. This may account for the positive association of cash preference with adoption and the lack of association of knowledge with adoption.

Overall, the study has made a contribution to the scarce studies on digital banking adoption in interest free banking sector in Ethiopia and offered empirical evidence that customer related factors still play vital role in understanding the digital banking behavior at the Bethel Ansar branch of hijra bank.

References

Abu Al-Haija, E., Al-Haraizah, A., Lataifeh, A. S., Meqdade, M., & Yousef, N. (2025). The impact of digital banking transformation (DBT) platforms on the profitability and efficiency of Islamic banking. *Journal of Islamic Marketing*. Advance online publication.

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Sage Publications.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179–211.

Alalwan, A. A., Dwivedi, Y. K., & Rana, N. P. (2016). Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. *International Journal of Information Management, 37*(3), 99–110.

Alnemer, H. A. (2022). Determinants of digital banking adoption in the Kingdom of Saudi Arabia: A technology acceptance model approach. *Digital Business, 2*(2), 100037.

Alwan, H. A., & Al-Zu'bi, A. I. (2016). Determinants of Internet banking adoption among customers of commercial banks in Jordan. *International Journal of Business and Management, 11*(3), 95–104.

American Psychological Association. (2017). *Ethical principles of psychologists and code of conduct*. American Psychological Association.

Assefa, M. (2022). The adoption of branchless banking system as part of inclusive financial service: Extension of technology acceptance model. *[journal/source unverified]*.

Awa, H. O., Ojiabo, O. U., & Orokor, L. E. (2017). Integrated technology-organization-environment (TOE) and technology acceptance model (TAM) for e-commerce adoption. *Journal of Global Information Technology Management, 20*(2), 107–132.

Awoniyi, O. (2022). Digital banking adoption in Nigeria: The place of technology acceptance model. *Asian Journal of Economics, Business and Accounting, 22*(7), 59–72.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173–1182.

Bekele, D. (2015). Factors affecting electronic banking adoption in Ethiopia. *International Journal of Scientific and Research Publications, 5*(1), 1–7.

Bekele, T. (2015). Digital banking adoption in Ethiopia: Opportunities and challenges. *Ethiopian Journal of Business and Economics, 5*(1), 45–63.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101.

Chakraborty, S., & Joseph, J. (2017). E-banking adoption challenges in developing countries. *International Journal of Bank Marketing, 35*(6), 887–904.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative and mixed methods approaches* (4th ed.). Sage Publications.

Daniel, E. (1999). Provision of electronic banking in the UK and the Republic of Ireland. *International Journal of Bank Marketing, 17*(2), 72–82.

Dash, M., Bhusan, P. B., & Samal, S. (2014). Determinants of customers' adoption of mobile banking: An empirical study by integrating diffusion of innovation with attitude. *Journal of Internet Banking and Commerce, 19*(3).

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–340.

Desalegne, T. (2024). *Challenges and prospects of digital banking adoption in Ethiopian interest-free banks* (Unpublished master's thesis). Addis Ababa University.

Esendemirli, E., Olawale, A. A., Celik, S., & Karahan, M. O. (2024). Digital banking adoption: Evidence from the Nigerian youth market. *International Journal of Contemporary Economics and Administrative Sciences, 14*(1), 14–35.

Ethiopian Business Review. (2024). *Hijra Bank launches Ethiopia's first Sharia-compliant digital financial platform: HalalPay*.

Ferede, T., Hassen Jemal, M., & Molla, A. (2025). Digital transformation in the Ethiopian banking sector: A case study of EtBank. *Journal of Digital Transformation, 8*(2), 45–67.

Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). Sage Publications.

Gardachew, W. (2010). *Electronic banking in Ethiopia: Practices, challenges and opportunities* (Unpublished working paper). Addis Ababa University.

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly, 27*(1), 51–90.

Green, S. B. (1991). How many subjects does it take to do a regression analysis? *Multivariate Behavioral Research, 26*(3), 499–510.

Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics* (5th ed.). McGraw-Hill.

Habiboğlu, H. İ., Öztek, M. Y., & Pirtini, S. (2020). A content analysis of technology-organization-environment framework studies. *Journal of Business Research, 108*, 207–219.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). Guilford Press.

Hidayat, A., & Kassim, S. (2023a). The determinants of digital banking adoption among banks offering Islamic banking services. *Journal of Islamic Monetary Economics and Finance, 9*(4), 559–588.

Hidayat, A., & Kassim, S. (2023b). The digital banking services: A selection model from Islamic banks. *International Journal of Islamic Business, 8*(1), 41–58.

Ibeto, C. J., & Okore, A. M. (2012). Factors influencing electronic banking adoption among bank customers. *International Journal of Business and Management Studies, 4*(2), 123–134.

Jarra, K. K. (2024). Ensuring equal access to financial and banking services: A critical review of the incorporation of interest-free banking principles in Ethiopian law. *Manchester Journal of Transnational Islamic Law & Practice, 20*(2), 275–305.

Joshi, R., Goel, R., & Garg, S. (n.d.). *A study on customers' perception on adoption of digital banking in Indian banking sector*. Faculty of Management, GLS University.

Kaur, S. J., Ali, L., Hassan, M. K., & Al-Emran, M. (2021). Adoption of digital banking channels in an emerging economy: Exploring the role of in-branch efforts. *Journal of Financial Services Marketing, 26*, 107–121.

Kothari, C. R. (2004). *Research methodology: Methods and techniques* (2nd ed.). New Age International.

Legass, H. A., & Durmuş, M. E. (2024). Factors determining the adoption of mobile banking in Ethiopian Islamic banks: Extension of Technology Acceptance Model (TAM). *Journal of Financial Services Marketing*.

Legass, H. A., Mekonnen, D. C., & Yusuf, J. M. (2025). Islamic banking customers satisfaction in the digital banking: Evidence from Ethiopia: A SEM approach.

Malaquias, R. F., & Hwang, Y. (2019). Mobile banking use: A comparative study with Brazilian and U.S. participants. *International Journal of Information Management, 44*, 132–140.

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review, 20*(3), 709–734.

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.

Molla, A., & Licker, P. S. (2005). Perceived e-readiness factors in e-commerce adoption: An empirical investigation in a developing country. *International Journal of Electronic Commerce, 10*(1), 83–110.

Nepal, S., & Nepal, B. (2023). Adoption of digital banking: Insights from a UTAUT model. *Journal of Business and Social Sciences Research, 8*(1), 1–18.

Nesibu, H. (2019). *Mobile banking adoption in Ethiopia: A case of Commercial Bank of Ethiopia* (Unpublished master's thesis).

Nihayah, N., & Purnama, N. (2024). Evaluation of digital banking application adoption based on the technology acceptance model (TAM). *International Journal of Science, Technology & Management*.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). McGraw-Hill.

Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce, 7*(3), 101–134.

Riquelme, H. E., & Rios, R. E. (2010). The moderating effect of gender in the adoption of mobile banking. *International Journal of Bank Marketing, 28*(5), 328–341.

Riza, A. F. (2019). *Customer acceptance of digital banking in Islamic bank: Study on millennial generation*. Department of Islamic Banking, Faculty of Islamic Economics and Business UIN Sunan Kalijaga Yogyakarta.

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.

Rogers, E. M., Medina, U. E., Rivera, M. A., & Wiley, C. J. (2005). Complex adaptive systems and the diffusion of innovations. *The Innovation Journal: The Public Sector Innovation Journal, 10*(3), 1–26.

Sathye, M. (1999). Adoption of internet banking by Australian consumers: An empirical investigation. *International Journal of Bank Marketing, 17*(7), 324–334.

Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson.

Setiawan, N., & Rahmiati, A. (2023). *Exploring the determinants of digital banking adoption among Islamic banks in Indonesia*. Institut Agama Islam Al-Fatimah Bojonegoro.

Sharma, V. K., & Kumar, A. (2025). Determinants of online banking adoption in India: An empirical investigation. *International Journal of Business Innovation and Research, 36*(2), 229–245.

Shega Digital Finance. (2024). *A Halal path to Ethiopia's financial inclusion*.

Siska, E. (2022). Exploring the essential factors on digital Islamic banking adoption in Indonesia: A literature review. *Jurnal Ilmiah Ekonomi Islam, 8*(1), 124–130.

Sofyani, H., & Darma, E. S. (2023). Effect of architecture and efficiency of mobile banking application on the intention to continue using Islamic bank: Does data security matter? *Journal of Islamic Marketing*.

Son, Y., Kwon, H. E., Tayi, G. K., & Oh, W. (2020). Impact of customers' digital banking adoption on hidden defection: A combined analytical–empirical approach. *Journal of Operations Management, 66*(4), 418–440.

Straub, E. T. (2009). Understanding technology adoption: Theory and future directions for informal learning. *Review of Educational Research, 79*(2), 625–649.

Suhartanto, D., Dean, D., Ismail, T. A. T., & Sundari, R. (2019). Mobile banking adoption in Islamic banks: Integrating TAM model and religiosity-intention model. *Journal of Islamic Marketing, 11*(6), 1405–1423.

Sultan, M. (2023). *Assessment on practical challenges and opportunities of Islamic banking in Ethiopia: In case Hijra Bank S.C.* (Unpublished master's thesis). St. Mary's University.

Sutikno, S., Nursaman, N., & Muliyati, M. (2022). The role of digital banking in taking the opportunities and challenges of Sharia banks in the digital era. *Journal of Management Science, 5*(1), 27–30.

Tabachnick, B. G., & Fidell, L. S. (2019). *Using multivariate statistics* (7th ed.). Pearson.

Tewabe, M. (2023). Legal space for the creation and operation of Fintech in Ethiopia. *Journal of Financial Regulation*.

Tiwari, P. (2021). Digital banking adoption in Islamic banks: A review and future research directions. *Journal of Islamic Banking and Finance*.

Tornatzky, L. G., & Fleischer, M. (1990). *The processes of technological innovation*. Lexington Books.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science, 46*(2), 186–204.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425–478.

Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Sage Publications.

Yunita, P. (2021). The digital banking profitability challenges: Are they different between conventional and Islamic banks? *Jurnal Akuntansi dan Keuangan Indonesia, 18*(1), 55–74.

Appendix

1. Research Questionnaire

Addis Ababa University College of Business and Economics Department of Management

Title of the Study: Determinants of Customer Adoption of Digital Banking: A Customer-Level Analysis in an Interest-Free Bank: Evidence from Hijra Bank, Ethiopia

Dear Respondent,

This questionnaire is designed to gather data for an academic research study being conducted as part of a Master's degree in Business Administration at Addis Ababa University. The purpose of the study is to examine the factors that influence customer adoption of digital banking in interest-free banks.

Your participation is completely voluntary and anonymous. Please do not write your name anywhere on this questionnaire. All responses will be kept strictly confidential and will be used for academic purposes only. There are no right or wrong answers. Please answer each question honestly based on your own experience and perception.

The questionnaire will take approximately 10 to 15 minutes to complete.

Thank you very much for your time and cooperation.

Zebiba Fedlu
Master's Candidate
Addis Ababa University

Section A: Demographic Information

Please mark (✓) the box that best describes you.

A1 Gender

☐ Male ☐ Female

A2 Age

☐ Below 25 ☐ 25 to 34 ☐ 35 to 44 ☐ 45 and above

A3 Educational Level

☐ Diploma ☐ Bachelor's Degree ☐ Master's Degree or above ☐ other

A4 How long have you been a customer of Hijra Bank:

☐ Less than 1 year ☐ 1-3 years ☐ 4-5 years ☐ More than 5 years

A5 Which digital banking service do you currently use? (you may select more than one)

☐ Mobile Banking ☐ Internet Banking ☐ ATM ☐ USSD Service ☐ none

Section B: Digital literacy

Please indicate your level of agreement with each statement by marking (✓) the appropriate box.

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

No.	Statement	1	2	3	4	5
B1	I feel confident using mobile banking applications.	☐	☐	☐	☐	☐
B2	I am able to complete banking transactions online without assistance.	☐	☐	☐	☐	☐
B3	I find it easy to navigate through Hijra Bank's digital banking platforms.	☐	☐	☐	☐	☐
B4	I understand the security features and warnings on digital banking platforms.	☐	☐	☐	☐	☐
B5	I can easily learn how to use new features on digital banking applications.	☐	☐	☐	☐	☐

Section C: Customer Trust

Please indicate your level of agreement with each statement by marking (✓) the appropriate box.

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

No.	Statement	1	2	3	4	5
C1	I trust that my digital banking transactions are secure.	☐	☐	☐	☐	☐

C2	I believe Hijra Bank protects my personal information when I use digital banking.	☐	☐	☐	☐	☐
C3	I am confident that digital banking systems will process my transactions correctly.	☐	☐	☐	☐	☐
C4	I trust that Hijra Bank will resolve any digital banking issues I may face.	☐	☐	☐	☐	☐
C5	I feel safe using digital banking services even when making large transactions.	☐	☐	☐	☐	☐

Section D Customer Awareness

Please indicate your level of agreement with each statement by marking (✓) the appropriate box.

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

No.	Statement	1	2	3	4	5
D1	I am aware that Hijra Bank offers mobile banking services.	☐	☐	☐	☐	☐
D2	I know about all the digital banking channels available to me as a customer.	☐	☐	☐	☐	☐
D3	I have received adequate information about Hijra Bank's digital banking services.	☐	☐	☐	☐	☐
D4	I understand the benefits of using digital banking compared to branch banking.	☐	☐	☐	☐	☐
D5	I am informed about the steps Hijra Bank takes to ensure digital banking security.	☐	☐	☐	☐	☐

Section E: Cash Preference

Please indicate your level of agreement with each statement by marking (✓) the appropriate box.

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

No.	Statement	1	2	3	4	5
E1	I prefer using cash for my daily transactions.	☐	☐	☐	☐	☐
E2	I feel more in control when I use cash instead of digital payments.	☐	☐	☐	☐	☐
E3	I am comfortable carrying cash rather than relying on digital banking.	☐	☐	☐	☐	☐
E4	I prefer to visit the bank branch rather than use digital banking for most transactions.	☐	☐	☐	☐	☐
E5	Using cash gives me a better sense of my spending compared to digital payments.	☐	☐	☐	☐	☐

Section F: Customer Adoption of Digital Banking

Please indicate your level of agreement with each statement by marking (✓) the appropriate box.

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

No.	Statement	1	2	3	4	5
F1	I frequently use Hijra Bank's mobile banking application.					
F2	I use internet banking for my regular banking transactions.					
F3	I regularly use ATMs for withdrawals and other banking services.					
F4	I intend to continue using digital banking services in the future.					
F5	I would recommend Hijra Bank's digital banking services to others.					

Section H: Open-Ended Question

Please share any additional comments, suggestions, or concerns you have about digital banking services at Hijra Bank.

_____

_____

_____

_____

Thank you for your valuable time and honest responses!

Your participation is greatly appreciated.

2. Data from Hijra Bank head Quarter

Digital Banking Report

Summary Report

Item	Details
Total Customers	More than 1.1 Million
Total Branches	160 Branches, 33 in Addis Ababa
Customer Types	32
Mobile Banking Users	429,027
Bethel Ansar Branch Mobile Banking Users	4,197
Internet Banking Users	More than 100
Total ATM Cards	69,573
Instant Cards	38,331
Bethel Branch ATM Cards	578
USSD Users	571,833
Bethel Branch USSD Users	6,728

