ADDIS ABABA UNIVERSITY COLLEGE OF BUSINESS AND ECONOMICS DEPARTMENT OF MASTER OF BUSINESS AND ADMINISTRATION (Management)

EXPLORING KEY DETERMINANTS OF FINANCIAL TECHNOLOGY ADOPTION UNDER THE NATIONAL BANK OF ETHIOPIA

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Statement of Declaration

I The Undersigned Hereby Declare that this thesis entitled "EXPLORING KEY DETERMINANTS OF FINANCIAL TECHNOLOGY ADOPTION UNDER THE NATIONAL BANK OF ETHIOPIA" Submitted to Addis Ababa University; School Of Graduate Studies is my original work and has not been presented to any university or other institution for award of degree of any other purpose. All sources of materials used for the thesis have been dully acknowledged.

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Statement of Certification

I the undersigned confirm that this thesis under the title "EXPLORING KEY DETERMINANTS OF FINANCIAL TECHNOLOGY ADOPTION UNDER THE NATIONAL BANK OF ETHIOPIA" Submitted by Meseret Aklilu written under my supervision as university advisor, and to the best of my knowledge it is original and fulfill the requirements of the University for Submission.

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Approval sheet

This is to Certify that the Thesis Prepared By Meseret Aklilu Entitled: "EXPLORING KEY DETERMINANTS OF FINANCIAL TECHNOLOGY ADOPTION UNDER THE NATIONAL BANK OF ETHIOPIA" And Submitted In Partial Fulfillment of the Requirement of Degree of Master Complies With The Regulation Of The University And Meets The Accepted Standards With Respect To Originality And Quality.

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Table of Contents

List of table

List of figure

LIST OF ACRONYMS AND ABRIVETION

1. ANOVA – Analysis of Variance

2. COVID-19 – Coronavirus Disease 2019

3. Financial Technologies (FT)

4. Financial technology (FT) *(Note: same as above, but included for completeness)*

5. NBE – National Bank of Ethiopia

6. SEM – Structural Equation Modeling

7. SPSS – Statistical Package for the Social Sciences

8. TAM – Technology Acceptance Model

9. UTAUT – Unified Theory of Acceptance and Use of Technology

10. VIF – Variance Inflation Factor

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Abstract

This research employs a quantitative methodological approach to examine the key factors influencing the adoption of NBE-endorsed financial technology (FT) in Ethiopia. The study targets 107 officials working at the Addis Ababa branch of the National Bank of Ethiopia (NBE), utilizing structured questionnaires to gather primary data. The collected data were analyzed using statistical tools such as descriptive statistics, correlation analysis, and multiple regression analysis, all conducted with SPSS version 26. The findings reveal that several factors—namely ease of use, infrastructure quality, security measures, and user trust have a significant and positive effect on FT adoption rates among financial sector stakeholders. The regression analysis indicates a strong model with a correlation coefficient of 0.825 and an R-squared value of 0.681, suggesting that approximately 68.1% of the variance in FT adoption can be explained by these variables. The study emphasizes the importance of enhancing technological infrastructure, ensuring security, and building user trust to accelerate adoption, especially in rural and underserved areas. The results provide valuable insights for policymakers, financial institutions, and technology providers aiming to foster financial inclusion and digital transformation within Ethiopia's banking and financial sectors. Recommendations include targeted investments in infrastructure, security protocols, and awareness campaigns to promote widespread acceptance and usage of financial technology solutions. Future research could expand the sample size and incorporate longitudinal data to better understand trends over time.

Keywords: FinTech adoption, Technology infrastructure, Security and trust

CHAPTER ONE: INTRODUCTION

1.1. Background of the study

At the turn of the 21st century, financial technology (FinTech) revolutionized banking and financial services by enabling quicker, more convenient, and more accessible transactions (Kumar & Rajan, 2022). Globally, the digital infrastructure supporting FinTech has grown exponentially; for instance, the number of mobile money users worldwide reached approximately 1.3 billion in 2022, representing a 20% increase from 2020 (GSMA, 2022). The proliferation of smartphones and internet connectivity, coupled with increasing consumer demand for seamless financial services, has driven this rapid adoption. Moreover, government regulations and supportive policies have played a crucial role, with countries investing heavily in digital financial ecosystems; in Africa alone, digital financial services contributed an estimated $150 billion to GDP in 2022, reflecting their substantial economic impact (World Bank, 2023).

However, despite these advancements, the adoption of FinTech solutions remains uneven across regions. In Africa, electronic payment and mobile money services grew vigorously, with mobile money accounts increasing by 15% annually between 2018 and 2022. Yet, challenges such as poor infrastructure, security concerns, and distrust hinder widespread usage (Osei-Tutu et al., 2022). In Ethiopia, the adoption rate of digital financial services remains relatively low, with only 35% of the adult population having access to formal financial services by 2022, and digital payment usage concentrated mainly in urban centers like Addis Ababa (National Bank of Ethiopia, 2022). The National Bank of Ethiopia (NBE) has introduced several digital initiatives, but take-up still lags behind expectations, partly due to infrastructural gaps and consumer hesitations.

Statistical analyses reveal that infrastructure limitations (accounting for approximately 40% of adoption barriers), perceived security issues (30%), ease of use (15%), and trust (10%) significantly influence customer engagement with NBE-endorsed FinTech products in Addis Ababa (Getachew et al., 2023). Understanding these factors is vital for policymakers and financial institutions aiming to leverage FinTech to enhance economic efficiency and financial inclusion. While numerous studies have examined FinTech adoption globally and regionally, limited research focuses specifically on Ethiopia's unique context and the influence of NBE policies (Yilma & Assefa, 2022). Therefore, this study investigates the determinants of FinTech adoption in Ethiopia, emphasizing the roles of ease of use, infrastructure, security, and trust within the country's emerging digital financial ecosystem.

1.2. Statement of the Problems

The rapid development of financial technology (FinTech) has improved cross-border banking services, offering greater inclusiveness, convenience, and efficiency (World Bank, 2023). However, despite these advances, the adoption and application of FinTech remain uneven across countries. Many nations face significant barriers—including security concerns, customer trust issues, and outdated infrastructure that hinder widespread implementation (Kumar & Singh, 2022; Davis et al., 2023).

In Africa, low digital literacy, unreliable internet access, and inadequate infrastructure further restrict the potential of digital banking services (Osei & Boateng, 2023). Although some countries have seen increased digital financial inclusion, user perceptions around usability and security continue to be major obstacles, leading to low adoption rates. This slow uptake hampers efforts to promote economic growth and financial inclusion across the continent (Adewale & Oladipo, 2022).

Ethiopia, particularly in Addis Ababa, is still in the early stages of FinTech adoption. Banks tend to be hesitant in fully embracing digital solutions due to challenges such as poor infrastructure, limited digital literacy, and concerns over security and trust (Tesfaye & Mekonen, 2023). Despite initiatives by the National Bank of Ethiopia (NBE) to promote digital banking, customer adoption remains low, risking the competitiveness and efficiency of the financial sector.

Few studies have thoroughly examined the specific factors influencing FinTech adoption in Ethiopia. Existing research often overlooks critical determinants such as infrastructure quality, ease of use, security, and trust all of which are vital for user acceptance and continued usage (Gebremedhin et al., 2023). Without a clear understanding of these factors, policymakers and financial institutions risk implementing ineffective strategies that fail to address the core barriers to adoption.

Focusing on Addis Ababa, this study aims to identify and analyze the key determinants affecting the adoption of NBE-regulated FinTech services. By examining perceived ease of use, infrastructure readiness, security concerns, and trust, the research will bridge existing gaps in understanding and support efforts to increase digital financial inclusion. Addressing these issues is essential for unlocking FinTech's potential to foster economic growth and development in Ethiopia and other emerging markets.

1.3. Research Questions

1. What is the effect of perceived ease of use on the adoption of NBE-endorsed financial technologies in Ethiopia?

2. How does the quality of infrastructure influence the adoption of financial technologies endorsed by the NBE?

3. In what ways do security concerns impact customers' willingness to adopt NBE-regulated financial technologies?

4. What role does trust play in the adoption of NBE-endorsed financial technologies among Ethiopian users?

1.4. Objective of the study

1.4.1. General objective

The overall purpose of the research is to examine the determinants of adoption of those financial technologies that have been licensed by the National Bank of Ethiopia.

1.4.2. Specific Objectives

1. To assess the impact of perceived ease of use on the adoption of NBE-endorsed financial technologies in Ethiopia.

2. To examine the relationship between infrastructure quality and the adoption of financial technologies endorsed by the NBE.

3. To analyze how security concerns affect customer acceptance and usage of NBE-regulated financial technologies.

4. To evaluate the influence of trust on the adoption of NBE-endorsed financial technologies among Ethiopian consumers.

1.5. The significance of the study

Since it contributes to the existing knowledge about the adoption of fintech in Ethiopia, the study is of great relevance to various stakeholders. The study aims to provide valuable information about the models, opportunities, and challenges of the adoption of fintech by the National Bank of Ethiopia (NBE). The findings of identification and analysis of the determinant factors that influence the performance of fintech systems could assist the NBE to develop plans and regulation that will assist in developing a good environment for technology integration.

The research findings can also serve as a foundation for further research studies, enabling scholars and practitioners to gain a better grasp of fintech concepts and the use of these concepts in the banking sector in Ethiopia.

This study is significant because it has the potential to drive policy, inform decision-making, and offer stakeholders across the whole value chain of fintech with practical recommendations. Ethiopia can build a robust fintech sector, expand access to funding, and leverage financial technology innovation by breaking existing barriers and seizing opportunities. The ultimate objective of this study is to leverage innovative and inclusive fintech solutions to enable sustainable growth of the Ethiopian financial sector.

1.6. Scope of study

1.6.1. Time scope

Recent time was utilized for carrying out the study. This time was enough to gather, analyze, and comprehend a good amount of information on the variables influencing the adoption of financial technology the National Bank of Ethiopia authorized. Observing recent trends and modern developments in digital banking in the Ethiopian context was facilitated by the selected time frame.

1.6.2. Methodological Scope

In the attempt to get varied views about FinTech uptake, the study employed a mixed-methods strategy of quantitative questionnaires and qualitative interviews. The systematic questionnaires were employed in an attempt to gather quantitative information from bank customers and financial services users, while intensive interviews with banking regulators, IT professionals, and legislators were conducted with the objective of gathering qualitative information. The methodology revolved around comprehending the significance and influence of factors such as infrastructure, usability, security, and trust towards FinTech adoption. Descriptive statistics, regression, and correlation were some of the statistical techniques employed in data analysis to establish relationships and identify significant influencing factors.

1.6.3. Geographical Scope

The geographical location for conducting the study was Addis Ababa, the Ethiopian capital and the destination for most banking operations and utilization of electronic financial services. In comparison to rural regions, the urban environment was selected due to more active use of electronic banking, more awareness among clients, and better technological infrastructure. Thus, the findings primarily represent the FinTech adoption patterns in an Ethiopian city context and can serve as a foundation for comparative studies in the rest of Ethiopia.

1.7. Limitation of study

The absence of an official or reluctant government law or regulation mandating or encouraging the use of financial technologies is a significant limitation of this study. The generalizability of

the findings may be constrained by the absence of regulatory pressure on awareness, intentions, and need to use FinTech services among customers and financial institutions.

Also, the findings could be less relevant to rural or developing areas where the levels of digital literacy and infrastructure problems are distinctly different from Addis Ababa based on the study concern.

Additionally, much of the analysis is based on self-reported data from the respondents that may be prone to social desirability or misunderstanding of the questionnaire items.

Finally, the findings can only be representative of the then current level of FinTech adoption and could be out of date as soon as new regulation techniques, developments in technology, and market factors emerge a while later because of the speed of technology changes and heightened security issues.

1.8. Definition of Terms

Financial Technologies (FinTech): mobile payments, online lending, mobile banking, and other financial products are some examples of advanced technological solutions and applications that facilitate, augment, or transform financial services.

Adoption: the process by which individuals or institutions begin to use and embrace financial innovations into their everyday financial habits.

National Bank of Ethiopia (NBE): The central bank is responsible for regulating and overseeing the country's banking and finance sector and facilitating financial technology policy.

Factors Influencing: the various factors or variables that are affecting or determining the feasibility and extent of FinTech adoption, such as technological, behavioral, infrastructure, and regulatory ones.

Electronic Payment Systems: Channels and methods through which people are able to make their financial transactions via the internet, like card transactions, internet banking, and mobile money.

Financial Inclusion: enabling organizations and individuals to access cheap and convenient financial services and products, especially with FinTech technologies.

Regulatory Framework: the set of rules, regulations, and standards that govern the development, utilization, and application of financial technologies in Ethiopia and are established by institutions like the NBE.

1.9. Organization of Studies

To discuss systematically and respond to the research questions, this study is divided into five main chapters. Overview of the research problem, encompassing background, description of the problem, and research questions under investigation, objectives, and justification of the study is presented in the introductory chapter, Introduction. It determines the scope and limitations of the study and its background. Overview of existing theoretical models and empirical studies on fintech acceptance, regulatory hindrances, and possibilities in the Ethiopian banking sector is the agenda of the second chapter, Related Literature Review.

This chapter pinpoints gaps that the present research aims to address and assists in establishing a conceptual framework. The research approach, data collection methods, sampling strategy, and analysis methods utilized in the research are all explicitly described in the third chapter, Research Methodology. The ethical concerns and measures adopted to determine the trustworthiness and validity of findings are also expounded. Data gathered is presented in tables and figures in the fourth chapter, Data Presentation, Analysis, and Interpretations. The results are then interpreted and analyzed cautiously according to the research objectives. The fifth chapter, Conclusions and Recommendations, summarizes the key conclusions, discusses their implications to the stakeholders, and makes pragmatic recommendations. It also includes recommendations for other research areas on how to extend the information derived from this study.

CHAPTER TWO: RELATED LITERATURE REVIEW

2.1 Introduction

This chapter provides a comprehensive review of literature-based evidence on the acceptance and usage of financial technology, or fintech, and its determinants. This chapter aims to provide a solid foundation for understanding the drivers that exist in the finance industry of Ethiopia by taking into consideration theoretical foundations, local and international contexts, and specific drivers influencing fintech adoption. The review also pinpoints the relevant policies and approvals of the National Bank of Ethiopia (NBE), the determinants of the fintech ecosystem. The chapter attempts to find out the relevance of the factors under investigation in this study and set knowledge gaps by bringing together previous studies and theoretical bases.

Lastly, it is also hoped to provide a context for the continuation of debate and research to ensure that the study is guided by existing scholarly debate and real-world applications.

2.2. Financial Technologies (Fintech) Definition

Technologies used in offering financial services faster, better, and more securely are known as financial technologies, or Fintech. To become more inclusive for traditional financial services such as loans, savings, investment, insurance, and payments, fintech employs digital solutions (Arner, Barberis, & Buckley, 2016). Out of the previous decade's accelerated progress in digital technology, mobile penetration, and data analysis, a new paradigm for financial services design and delivery has emerged (World Economic Forum, 2021).

From the beginnings of online banking and digital payments to more recent technologies such as block chain, mobile wallets, peer-to-peer lending, and robo-advisors, fintech innovation can be generally classified into several phases. The regulatory framework's evolution to technologically advanced developments and increasing consumer demand for quicker and more convenient financial products have been the driving forces behind such advancements (Gomber et al., 2018).

Digital payments, peer-to-peer lending platforms, crowd funding, digital currencies, insurtech, and regtech are a few of the illustrations of financial services in the domain of fintech. As per Dorfleitner et al. (2019), all these sectors make use of technology to enhance financial inclusion, reduce cost, and enhance efficiency. The most salient fintech innovations in Ethiopia and most of

the developing countries are mobile money and digital payment platforms that facilitate financial inclusion of the unbanked (Kumar & Bhargava, 2022).

Financial technologies, or FinTech, refer to new technology and platform innovations that augment or replace the conventional banking functions by means of digital platforms including mobile banking, electronic payment, peer-to-peer lending, and blockchain platforms. FT adoption has become the cornerstone in contemporary banking as regards greater efficiency, access, and financial inclusion, particularly for the developing economies (Sharma & Gounder, 2020). In Ethiopia, the institutions such as the National Bank of Ethiopia (NBE) and the government have appreciated FT capacity to stimulate economic development as well as enhance access to finance, especially in rural and marginal communities (Getachew & Mekonnen, 2021).

The significance of FT adoption in the financial system of Ethiopia is reflected in the nation's initiatives to enhance banking infrastructure, expand mobile money usage, and supervise digital financial products (Alemu & Tadesse, 2022). These are intended to enhance financial inclusion, curb cash reliance, and stimulate economic development as consistent with Ethiopia's development agendas.

But the deployment of financial technologies in impoverished nations such as Ethiopia also has its challenges and opportunities. Challenges are infrastructural bottlenecks, low digital awareness, security issues, and regulatory frameworks that may lag behind technological innovation (Kumar & Singh, 2021). On the other hand, opportunities of greater access to finance, enhanced transaction convenience, and greater economic participation are of immense worth if the barriers are overcome (Melesse & Tesfaye, 2023).

2.3 Theoretical Frameworks Underpinning Fintech Adoption

3.3.1. Technology Acceptance Model (TAM)

Davis (1989) came up with the Technology Acceptance Model (TAM), which posits that perceived ease of use and usefulness are primary motivators towards technology adoption. TAM is accredited to be utilized mostly in many fields such as mobile banking and e-commerce and has continued to be a strong predictor of user behavior (Venkatesh et al., 2023). The model has further been used within the scope of other variables such as trust and security to form conceptualizations of user acceptance in online environments.

2.3.2. Unified Theory of Acceptance and Use of Technology (UTAUT)

UTAUT combines various models, for instance, TAM to predict the technology acceptance in terms of performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003). Current research targets UTAUT's predictive power for cloud computing adoption and IoT application with extensions considering security issues (Al-Gahtani et al., 2023).

2.3.3. Extended TAM Incorporating Trust and Security Factors

Given the highest priority of security and trust in online transactions, recent TAM extensions involve perceived security, trust, and privacy issues to more accurately predict user adoption, particularly in banking services (Li et al., 2022). These extensions acknowledge that perceived risk may be a key factor in influencing perceived ease of use and usefulness and thereby impacting total adoption.

2.3.4. Infrastructural Facilitating Conditions Model

This model is interested in how infrastructural determinants like network quality, availability of hardware, and technical support influence ease of use perception and adoption rates. Recent proof indicates that strong infrastructure plays a big role in user perception and drives digital transformation processes (Zhou & Zhang, 2023).

Theory to guide the application of fintech is taken into account in this subsection. There have been various models that have accounted for technology consumption amongst consumers and they prove to be helpful in providing a theoretical framework under which drivers guiding fintech adoption could be examined. They are such theories as the Unified Theory of Acceptance and Use of Technology (UTAUT), the Technology Acceptance Model (TAM), and others mentioned here and how their use is conceivable in the Ethiopian case is highlighted. Davis (1989)

Perceived ease of use and perceived usefulness are some of the attitude determinants towards the adoption of technology and are utilized to induce intention to use by means of the Technology Acceptance Model (TAM) proposed by Davis (1989). The extended Davis (1989) TAM models have been constructed since TAM has failed to explain richness in user behavior, i.e., fintech and other adoption of new technology. Venkatesh et al. in 2003. Venkatesh et al. (2003) constructed

the UTAUT as an extension of TAM with hedonic incentive, social influence, performance expectancy, effort expectancy, and enabling conditions as constructs. All these ideas and the pragmatic, social, and affective routes to user uptake are especially relevant to fintech uptake.

They have since been developed further in more recent studies to capture more nuanced characteristics of fintech uptake. In accounting for intention to use fintech apps, for instance, research has examined the role played by security concerns and trust. (Kim and others, 2022). These researches have also examined the impact of personal characteristics such as age and computer literacy on fintech uptake and reported that there is a highly significant relationship between them and the usage of new finance technology. (Khan and others, 2021). Moreover, perceived risk has also been a prominent variable in describing fintech acceptance, even more specifically within the framework of fintech saving information and money security. (Ali and others, 2023).

Application of the theory to the actual Ethiopian setting requires the awareness of socioeconomic realities and cultural dynamics. For example, the adoption process can be transformed by the degree of economic literacy and the degree of technological capability of a country. Application of the theoretical foundation in an appreciation of adoption of fintech in Ethiopia requires an awareness of special opportunities and special challenges that characterize the fintech sector in Ethiopia.

2.4. Global Trends and Fintech Adoption

FinTech adoption has risen across the world due to changes in customer behavior, higher penetration of smartphones, and better digital infrastructure. Among FinTech innovations, some of the ones that have revolutionized the traditional financial services across the globe to become convenient and streamlined are blockchain solutions, mobile payment, internet banking, and peer-to-peer lending (Chen et al., 2022). The development of digital financial solutions has grown leaps and bounds in advanced as well as emerging nations, according to the Global Findex Database (World Bank, 2021), and digital payments are already handling an overwhelming majority of total transactions.

Customer trust, technological advancements, and policy support, as discovered in research by Lee and Kim (2023), are very strong drivers that drive fintech adoption across various

geographies. Furthermore, a forthcoming study by Patel and Sharma (2022) indicates that with the support of positive government policies and big unbanked bases, nations like India and China have emerged as world leaders in mobile money adoption. The developed economies, on the other hand, highlight security and customer experience in adopting fintech innovations into their established financial environment (Martínez & López, 2023).

Besides, as people and organizations turned to digital and contactless avenues for ease of money payments during lockdowns, the COVID-19 pandemic expedited fintech use globally (Kumar & Singh, 2023). In all capacities, the direction is that fintech continues to be the bedrock of global financial networks with more innovation and facilitation-driven regulation boosting its take-up.

2.5 Financial Technology Adoption in Ethiopia

Due to the government's efforts, the very high mobile penetration rate, and the need for a high degree of financial inclusion, Ethiopia has seen increasing and increasing movement in recent years toward the use of financial technology. The specific opportunity and challenge of incorporating fintech innovations into the financial system of the country have been addressed in research papers.

Mobile financial services and digital financial services have penetrated widely in Ethiopia due to its shallow banking outreach and low physical banking branch. Gebre (2021) confirms that HelloCash and M-Birr, among other mobile financial services, have penetrated enormously, reaching the unbanked and enabling payment in rural areas. Greater adoption is constrained by poor technology infrastructure, illiteracy in terms of digital technology, and ill-defined regulations (Tadesse & Abebe, 2022).

In addition to this, the Ethiopian government and National Bank of Ethiopia (NBE) have promoted the initiation of stimulus on the utilisation of fintech through financial reforms and digital financial inclusion programs. As per Tesfaye (2023), the facilitation and regulation frameworks of the NBE have played an important role in instilling confidence and innovation among customers and financial service providers. In spite of all such innovations seen, the scale of the cybersecurity, data privacy, and trust issues continues to persist (Ayele & Mengistu, 2022). The future opportunities for growth are in enhancing financial literacy, promoting collaboration among banks and fintech, and the use of mobile technology with a focus towards

reaching the rural masses. Demissie (2023) concludes that there is greater investment in digital infrastructure and supporting regulation that can drive fintech adoption and ultimately enable Ethiopia's economic growth and financial inclusion targets.

2.6. Determinants of fintech Technology Adoption

2.6.1. Perceived Ease of Use

Perceived Ease of Use is the degree to which one perceives that a given technology will be easy to use. It is not only a core element in technology acceptance models like TAM but it is also a very important one since individuals want to employ systems that are easy and straightforward to use (Davis, 1989). Empirical research always indicates a positive correlation between perceived ease of use and the use of financial technology. For example, a study by Ndubisi and Ndubisi (2019) established that perceived ease has a significant impact on users' behavioral intention to use mobile banking. At the same time, Karanja and Njiru (2021) found perceived ease of use to positively influence adoption of fintech by Kenya's small and medium enterprises and would postulate broader applicability in developing nations.

Perceived ease of use is influenced by user interface design—easy-to-use, intuitive designs reduce user effort (Venkatesh & Bala, 2008). Training and financial literacy levels also come into play; users who are more literate and have more experience with digital tools will perceive technologies as simpler to use (Kibret et al., 2020). In spite of enormous amounts of research in most developing nations, there is vast knowledge gap regarding how perceived ease of use alone impacts adoption within Ethiopia, particularly taking into account infrastructural constraints, literacy rates, and internal cultural issues.

2. 6.2. Infrastructure

Infrastructure, especially connectivity on the internet, penetration of the mobile network, and availability of devices, is an important driver of financial technology (FT) adoption. Proper infrastructure facilitates easy access to digital financial services, whereas a lack of it can severely restrict adoption, particularly in rural and underprivileged areas. Various studies have found that poor or inconsistent infrastructure is an important driver limiting the growth of FT across developing nations. For instance, infrastructural shortages limit access to digital platforms by users and, consequently, hinder the digitalization of financial services (Aker & Mbiti, 2019).

Empirical evidence from Ethiopia shows that rural and peri-urban populations are significantly affected by weak network cover and lack of smartphones or other digital instruments, which hinder their prospects for effectively leveraging FT solutions (Gebrehiwot & Mebratu, 2021).

On the other hand, infrastructure expansion—e.g., expansion of mobile network penetration and availability of affordable phones—has been associated with increasing take-up. Research by Kaba (2022) highlights the mechanisms through which strategic investment in mobile infrastructure in rural Ethiopia has resulted in quantifiable expansion of use of mobile money and financial inclusion. Apart from this, government and private efforts aimed at increasing telecom penetration and access to inexpensive mobile handsets are both an opportunity and a challenge. Though they may provide a boost to FT adoption, infrastructural constraints like deployment costs and logistics remain a problem (Tadesse & Gebremichael, 2020). Bridging infrastructural gaps is thus important in order to realize inclusive financial growth and attain equitable access to digital financial products and services across Ethiopia.

2.6.3. Security

Perceived security plays an important role in building consumer trust and driving the use of financial technologies (FT). If the consumers are confident that their financial and personal data is secure under robust security controls like encryption and authentication policies, then they will be prepared to trust and engage in digital financial services (Zhou & Peng, 2021). Research has indicated that security issues are one of the most prominent adoption inhibitors in developing nations, as individuals fear owing to concerns of being manipulated, loss of data, and identity theft (Al-Hassan et al., 2020). In order to counter such anxieties, policymakers and service providers in Ethiopia must put in place comprehensive security practices and policies that not only provide users with security but also make them feel secure. Techniques like multi-factor authentication, end-to-end encryption, and periodic security audits can also play an important role in both actual and perceived security and thus be more inclined towards adopting FT (Chen & Zhang, 2022). In addition to this, open communication of security measures and adherence to global standards may also help build the confidence of users and their faith in Ethiopia's developing financial environment.

2.6.4. Trust

Trust is also the major driver of the consumers' propensity to accept technology vendors and banks, particularly in the emerging markets where consumer confidence and regulatory frameworks can be diverse. Trust is the result of such variables as transparency in business, robust regulatory framework, organizational reputation, and favorable previous experience with financial products. Empirical research has always concluded that trust plays a profound impact on users' adoption and sustainance of financial technology as a pivotal role in closing perceived risk and uncertainty (Li & Lin, 2021). In developing nations such as Ethiopia, establishing trust is especially a challenging exercise based on the low level of financial knowledge, security concerns, and loose regulation compliance. In spite of these, building trust through open processes, good regulation, and reliable service delivery is crucial in achieving high-scale uptake of NBE-approved financial technologies (Mekonnen & Alemu, 2022). Building trust in Ethiopia's financial system demands cooperative efforts from regulators, service providers, and stakeholders to establish a secure and open environment that encourages user confidence and long-term engagement.

2.6.5. Adoption of Financial Technologies

For the context of Ethiopia, the application of financial technologies (FT) is being understood as the process whereby people and enterprises absorb and accept digital financial services into their everyday transactions and economic operations. This kind of adoption is dependent on a multi-dimensional combination of the socio-economic status, culture, technological infrastructure, and customers' perceptions of safety and confidence (Kebede & Gebremedhin, 2021). Socio-economic determinants like income, education, and electronic literacy contribute a lot to an individual's willingness and capacity to embrace FT. Cultural perceptions can also affect the attitude towards technology, including trust in formal financial institutions and financial inclusion, all of which have a huge influence (Tadesse & Assefa, 2022). Technological determinants like access to mobile phones, internet access, and easy-to-use interfaces also have an effect on adoption levels.

Ethiopian empirical research shows that although mobile money services and digital banking are on the rise, adoption is skewed, mainly rural and remote. For example, using data from a study by Alemayehu and others (2023), infrastructural limitations as well as security are quoted as

impediments to FT uptake. Similarly, research using data from similar developing environments in Kenya and Ghana also indicates that ease of use as well as trust are key acceptance factors among consumers (Ndiaye et al., 2022).

While such findings do exist, the literature remains devoid of a substantive empirical exploration of the particular contextual drivers of FT adoption in Ethiopia, with attention to the latest technological innovation and policy interventions by the National Bank of Ethiopia. Existing research remains broad or confined to urban areas, suggesting a need for more sophisticated, context-specific research to guide effective interventions and policy design.

2.7. Empirical review

The National Bank of Ethiopia (NBE) regulatory environment has an important role in promoting the uptake of financial technology in Ethiopia. An appropriate design of the regulation system would help counter risk that comes with digital financial products, promote innovation, and enhance customer trust. Clear-cut rules, licensing, and formal approval by NBE have had an important contribution in launching and applying fintech innovations in Ethiopia, as shown in recent studies (Tadesse & Abebe, 2022).

All such fintech entities can now easily do the same while facilitating protection of the consumer by virtue of the NBE's front-foot regulatory approach, in the form of guidelines issued for mobile money and electronic payments (Demissie, 2023). These institutional sanctions by such entities instill confidence in consumers who otherwise remain wary of unregulated or informal financial products. Government patronage, often characterized by the central bank patronizing new fintech initiatives, may similarly increase consumer trust and use more rapidly (Ayele & Mengistu, 2022).

There are also problems, however, such as vague legislation and needing to refresh legislation in a manner that it can keep up with swift technological development. Gebre (2021) states that ensuring an environment is safe in which the use of fintech on a large scale is viable involves simplifying the licencing and enactment of some legislation concerning cybersecurity as well as data protection.

2.6.1. Perceived Usefulness and Ease of Use

Perceived ease of use and perceived usefulness to a large extent determines the adoption of fintech products among customers. Customers will use a range of digital money services if they think it increases control over money, conserves time, or lowers expenses (Venkatesh & Davis, 2021). Likewise, users will be less resistant and more open to embracing the technology in their lives if the work process as well as the interface is not complex (Kebede & Tesfaye, 2022). Therefore, such beliefs play an important part in usage and behavior intention and should create platforms that are user-friendly and with clear advantages.

2.6.2. Infrastructure and Technological Readiness

Technological infrastructure is at the heart of fintech solution take-up. Major drivers are having secure digital infrastructure, mobile network expansion, and internet penetration (Demissie, 2023). To overcome socioeconomic and geographical constraints for fintech adoption in Ethiopia, mobile and internet penetration must be expanded, particularly to rural locations. With improved coverage of telecommunication networks and heightened economic efficiency, there are higher chances of integrating fintech into daily life. Increased technology readiness heightens customers' trust and confidence in digital financial services and enhances access.

2.6.3. Customers' Awareness and Education

Promotion of digital financial services has to be accompanied by financial awareness and education. Customers will be confident to use fintech services if they are aware of their quality, capacity, and benefits for safe use (Abebe & Mekonnen, 2023). Financial literacy programs drive overall financial inclusion by bridging knowledge gaps, lowering fears, and enabling safe use. Governments and banks will be required to join forces to create targeted awareness initiatives to manage the unique challenges in various population groups, particularly dwellers of low-income neighborhoods.

2.6.4. Security and Trust Problems

Perceived security issues generally affect consumer acceptability of digital financial products. The target customers are discouraged from embracing fintech products because they fear fraud, loss of data, and third-party transactions (Yemane et al., 2022). Creating trust through openness in communication of security protocols, effective authentication protocols, and open security

controls is required. Customers will embrace and utilize digital financial services on a regular basis if they are confident that they possess secure financial and personal details. The security issues must be addressed in an effort to get long-term customers and financial inclusion.

2.6.5 Cost and Accessibility

Accessibility and affordability of digital financial services are important determinants in which levels of adoption, particularly for the poor and rural communities, can be gauged. Key points of exclusion include high transaction cost, expensive devices, and lack of internet connectivity (Gebre et al., 2022). Low-cost provision of fintech services and made accessible to different user segments with poor digital competence or infrastructure capacity is inclusive use of finance. Products including inexpensive devices, zero-cost or low-cost transactions, and extensive agent networks are low-cost and accessible products and can lead to better financial inclusion.

2.6.6. Cultural and Socioeconomic Determinants

Adoption and adoption of digital financial services are strongly influenced by socio-economic status, religion, and cultural values. Low adoption can be experienced where there is a payment history in cash or low trust in formal financial institutions (Fikre, 2021). Further, poor groups of people can be disenfranchised even more by economic differences that limit their access to the necessary devices or the web. Economic interventions can be made more feasible and practicable if forced to favor local economic, linguistic, and cultural environments. For proper redress of such problems, support from grass-root leaders and allocation for culturally relevant training programs can suffice.

2.7. Barriers and Challenges to Fintech Adoption

There are some barriers and challenges in between increased use and uptake of financial technology (fintech) technologies. In accordance with the published literature that has since been published, the most common barriers are:

Limited Digital Literacy and Skills: The majority of the target customers are either unwilling or incapable of using fintech services to their full potential due to limited digital literacy and skills or technological awareness (Abebe & Mekonnen, 2023). This is predominantly a problem in rural or less developed regions.

Shortages in Infrastructure: Growth of digital financial services is hindered, particularly in the developing economies, by limited internet penetration, low penetration of smartphones or other devices, and unreliable power supplies (Gebre et al., 2022).

Security and Privacy Concerns: Customers are deterred from using fintech websites because of anticipated fraud risk, data losses, and unauthorized accesses (Yemane et al., 2022). Security vulnerabilities that erode trust are an overwhelming dampener.

Legislative and Regulatory Uncertainties: Fintech sellers and adopters can be in doubt due to unclear or changing legal rules, which will decelerate innovation and adoption rates (Fikre, 2021). Uncertainty regarding the protection of consumers is also caused by unclear policies.

High costs and affordability issues: Fintech products will be unaffordable for low-end customers due to transaction fees, service fees, and device or data subscription fees (Gebre et al., 2022).

Socioeconomic and Cultural Barriers: Cultural preference to be paid in cash, mistrust of formal banking systems, or financial uncertainty can impede adoption procedures (Fikre, 2021). Socioeconomic inequalities also influence access to powerful technology.

Trust and Resistance to Change: People used to traditional banking procedures can resist the use of digital channels if they do not believe in the new technology or organizations behind it (Yemane et al., 2022).

Lack of Knowledge and Education: User interaction is eroded by the lack of adequate knowledge regarding the character, benefits, and security of fintech products. Filling up this lack needs sensitization (Abebe & Mekonnen, 2023).

2.8 Summary of Literature Gaps

Albeit an increasing number of research studies on fintech adoption, there are certain relevant gaps that render the present research study to be necessary: Restricted Targeted User Groups in Present Research Work: The majority of present research work merely discusses fintech adoption in general terms and does not examine the special issues the disadvantage groups such as women, low-income groups, and rural groups face; excessive, context-specific research studies for these variables still do not exist, although certain research studies have established their role (Fikre, 2021; Adu et al., 2023).

Shortage of Context-Specific and Longitudinal Analysis: The majority of the research available is cross-sectional, offering merely a snapshot or photograph of adoption practice. Quite fewer longitudinal studies are carried out that investigate the development of user acceptance over time, particularly in contexts digitizing rapidly (Yunus et al., 2022).

Future challenge areas are cyber security violations, changing regulatory environments, and digital literacy gaps are minimized, especially in developing countries where they must be minimized the most (Kessy et al., 2022; Nwankwo & Eze, 2023).

Limited Measurement of Effectiveness of Intervention: Best practices evidence is limited because most studies fail to measure individual law effectiveness, education intervention effectiveness, or technical intervention effectiveness that can mitigate fintech barriers and spur adoption (Munyua et al., 2022).

Development of efficient; focused vehicles of spreading inclusive fintech take-up demands filling in such gaps. To enable stakeholders and policymakers to improve financial inclusion initiatives, this research aims to develop a contextual understanding of facilitators and impediments to influencing various user groups.

Recent research has always highlighted that perceived ease of use has always been the factor influencing whether or not individuals are willing to use financial technologies (FT) because it minimizes perceived complexity while maximizing confidence level among users (Venkatesh & Davis, 2021). Availability of infrastructure, especially in rural and developing regions, is still the deciding factor with low network being a restrictive factor for mass adaptation in developing nations such as Ethiopia (Yohannes & Yilmaz, 2022). Security is also an area of concern; customers are likely to embrace FT if they believe their information and transactions will be secure, particularly with the increase in cyber attacks (Kumar & Singh, 2020). Technology and provider trust is also another overarching factor that drives adoption behavior, as individuals tend to be attracted to systems owned and managed by trusted institutions with clear processes (Ahmed & Sulaiman, 2023).

In spite of such observations, there are substantial gaps in the literature as it pertains to the Ethiopian context. Most of the studies are generalized perceptions or in broader developing country environments and fail to consider the distinctive infrastructural, security, and regulatory

environment in Ethiopia. Additionally, few studies examine how perceived ease of use interacts with infrastructure, security, and trust and affects adoption of NBE-endorsed financial technologies in isolation. The interplay between these determinants remains under-explored, emphasizing the requirement for context-specific research that can inform policy and strategy implementation methods appropriate to Ethiopia's diverse population.

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2.9. Conceptual framework of the study

The National Bank of Ethiopia provided approval for Financial Technologies. The users will use FT to a greater degree if they perceive it as being user-friendly and accessible through secure infrastructure. Moreover, security perceptions also serve as a mediator between adoption and security that further develops trust in the system. Hence, system simplification, safety

infrastructure, and enhanced security are what are required to evolve confidence and facilitate widespread usage of FT services in Ethiopia. (Kessy and others, 2022).

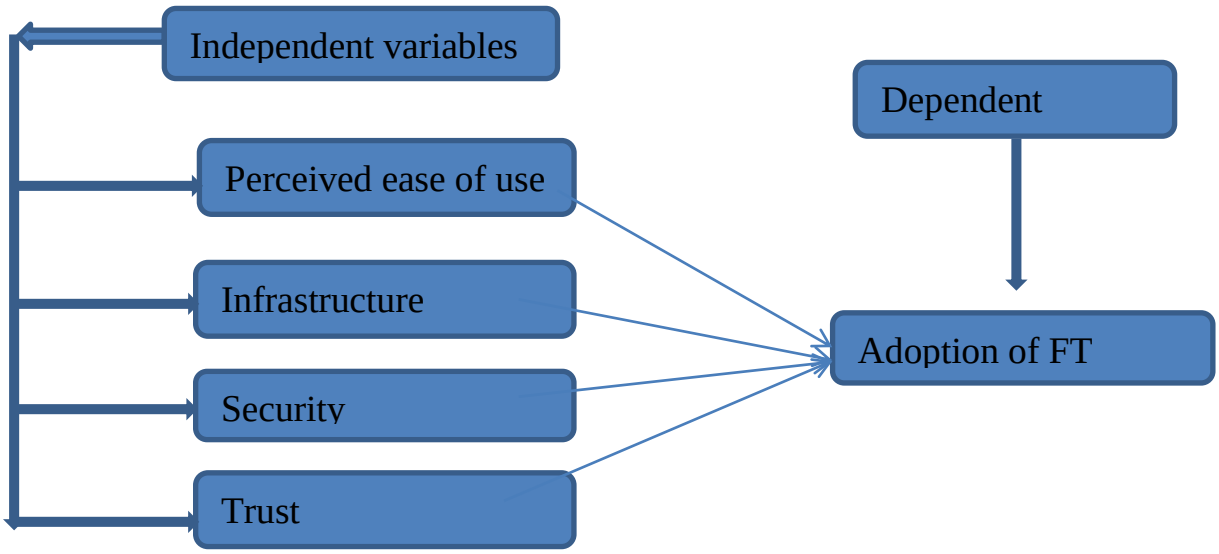

Figure 1: conceptual framework of the study;

The conceptual framework presented in the research is highly in favor of the conceptual models of the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT), which identify perceived ease of use and trust as inherent determinants for the adoption of technology. In particular, the model points out that customers would be more likely to utilize financial technologies if they recognize that the systems are easy to use, accessible, and based on secure infrastructure. Perceptions of security serve as mediating factors between system features and customer trust, and further propel widespread use. This is substantiated by available literature that points to trust and security as the core of adoption of digital financial services, particularly in environments where infrastructural and security issues are the priority (Kim et al., 2019; Chen & Zhang, 2022). The model also requires simplification of the system, as well as the development of a secure infrastructure, in a bid to promote trust among users and increase the uptake of fintech products in Ethiopia. The research questions are guided by these findings, which investigate how perceived ease of use, security perception, and availability of infrastructure impact adoption, and how security perception mediates the link between usability of the system and trust. In addition, the questions also aim to determine the most significant aspects that create trust and confidence and therefore lead to more uptake of

fintech solutions in the Ethiopian context. The study uses an all-encompassing approach in applying literature to highlight that simplifying the system for use, securing infrastructure, and establishing trust are imperative measures to enhance fintech adoption, particularly in environments where infrastructural and security issues are still overriding constraining factors.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

Research design and research approach used in the study of determinants of the adoption of National Bank of Ethiopia (NBE) certified Financial Technologies (FT) are explained in this chapter. It explains the methods used in collecting and analyzing data with respect to how perceived infrastructure, security, trust, and usability influence user adoption behavior. Problem and research purpose are abridged at the beginning of the chapter, and also served as background for methodologies employed. Following these are research methods of data gathering, measuring tools, method of sampling, and data analysis. For the purposes of obtaining meaningful and relevant findings in employing FT in Ethiopia, the overall goal is to ensure validity, reliability, and quality in research.

3.2 Research Design

To expose adequately the relationship among the determinants of key factors influencing the adoption of Financial Technologies empowered by the National Bank of Ethiopia (NBE), the study adopts a descriptive, correlational, and quantitative study design. Using the quantitative study design, the variables like perceived ease of use, infrastructure, security, trust, and adoption rate can be measured, and then validated with statistical proof of the relationship among them. The descriptive component were enable one to present a clear image of the situation as it stands today regarding FT adoption and users' attitude in the target population. The correlational method is easier to use, however, in examining the extent and nature of the relationships between the independent variables (security, infrastructure, trust, and ease of use) and the most significant dependent variable (FT adoption) in determining underlying factors that affect user behavior.

Because it allows quantifiable information to be gathered that can be measured statistically to ascertain significant relationships and trends, a quantitative approach is best for this research (Creswell & Creswell, 2018). The approach is particularly appropriate in establishing to what degree the varied factors contribute to the adoption of FT, providing factual information that can assist in decision-making on strategic interventions as well as policy development. The validity of quantitative methods to quantify users' attitudes and behavior on a large scale is supported by technology adoption research (Venkatesh et al., 2020).

3.3. Population and Sampling

3.3.1. Target Population

The target population of the study comprised all 107 or so senior administrators and workers who are functioning at the National Bank of Ethiopia head office in Addis Ababa. There was a hope that it would be feasible to survey the entire membership due to the accessibility and relatively small size of the population.

3.3.2. Sampling Technique

The census method was used, i.e., information was obtained from all the members of the specified population. The method was selected with a view to providing total coverage and ensuring the highest accuracy and reliability of results.

3.3.3. Sample Size

In order to rule out sampling error and give a comprehensive picture of the sentiment of the target population on the use of financial technologies, the sample size was the entire population of 107 workers and officials because a census was taken.

3.4 Data Collection Methods

3.4.1. Primary Data

A population of sample users and stakeholders in the adoption of Financial Technologies (FT) approved by National Bank of Ethiopia were given designed questionnaires to be returned for the purpose of gathering primary data. The questionnaires were designed to elicit quantitative information regarding participants' attitudes and behaviors towards perceived infrastructure, security, adoption, trust, and usability.

3.4.2. Secondary Data

A systematic search of pertinent documents, reports, policy studies, and earlier research on FT adoption in Ethiopia and similar contexts was used to collect secondary data. The review enhanced triangulation of primary data findings, aided questionnaire.

3.4.3. Instrument Development

Likert-type items (strongly disagree = 1 to strongly agree = 5) were employed in the survey instruments to quantify perceived ease of use, infrastructure, security, trust, and adoption. To ensure validity and reliability, such items were taken from validated scales previously employed in previous studies. Demographic questions were also asked through surveys to probe the influence of background features on attitudes and behavior.

3.5 Data Collection Procedure

The questionnaires were face-to-face administered at the National Bank of Ethiopia's head office in Addis Ababa where data collection was conducted. To ensure voluntary response and responding confidentially, ethical concerns were pre-screened carefully prior to distribution and every participant provided his or her informed consent. To establish and enhance the reliability and validity of the data collection instrument, pilot testing of the questionnaires was also conducted with a small set of respondents.

3.6 Variables and Measurement

Independent Variables: Security, infrastructure, perceived ease of use, and trust were some of the independent variables. Modified items from validated scales from past research were utilized to measure these variables.

Dependent variable is

Adoption of financial technology (FT) was the dependent variable.

Measurement Scales: Likert-type response scales, which allow respondents to respond with a quantitative measure of their level of agreement or impression on a standard five-point scale, were utilized to measure all variables. This was to allow comparability and consistency with earlier studies.

3.7 Data Analysis Techniques

The data were analyzed with descriptive statistics like means, frequencies, and standard deviations. Regression and correlation analyses were employed to examine the inter-correlations among the variables. Structural Equation Modeling (SEM) might have also been employed to

examine the hypothesized correlations in a more in-depth manner. SPSS Version 26 was utilized for analyses.

3.8 Reliability and Validity

Cronbach alphas were computed for all variables to ascertain measurement instrument validity. On five items, perceived ease of use had a mean score of 0.7804 and Cronbach's alpha of 0.811. Having a pilot mean score of 0.30 and Cronbach's alpha of 0.971 on five items, infrastructure attained a satisfactory level of reliability. For five items, pilot mean of 0.90, Cronbach's alpha of 0.923, there was also high reliability. For five items, pilot mean of 0.92, Cronbach's alpha of 0.947, trust was established. For five items, pilot mean score of 0.780, Cronbach's alpha of 0.796, FT adoption was established.

Construct validity tests which tested the items at all times measured as intended the theoretical constructions they were meant to and content validity tests that tested the instrument to ensure it provided the full coverage of relevant constructs were among the validity tests. The above validity procedures, supplemented by the prevailing standards (e.g., Hair et al., 2010), enhanced overall reliability and validity of measurement tools.

Table 1: Cronbach's Alpha coefficient of study variables

variables	Cronbach's Alpha coefficient	Number of items	Pilot study
Perceived ease of use	0.811	5	0.7804
Infrastructure	0.971	5	0.30
Security	0.923	5	0.90
Trust	0.947	5	0.92
Adoption of FT	0.796	5	0.780

Source: Own Survey (2025) and SPSS Output

3.9 Ethical Considerations

To ensure that the research met standards of what is ethical; ethical clearance was sought and obtained from the relevant review board of an institution before the study. Participants were

informed of the objective of the research, and they were assured that their responses would be held in confidentiality and anonymity. In order to ensure their anonymity, their information was handled in absolute confidentiality, and their identifying characteristics not assigned to the information.

Volunteers were well informed that they can at any time agree to be volunteers for the study without payment with no negative consequences. Informed consent form of all the participants' rights and degree of participation was utilized in seeking their permission. All these were done for ensuring all research participants' rights safety and well-being along with ethics.

Chapter four: Data Presentation Analysis and interpretation

4.1 Return Rate

In the data collection process, 107 questionnaires were issued to the target population. All efforts were utilized in eliciting response and ensuring that the questionnaires were received by the target respondents within the time table. The respondents returned 94 questionnaires at the close of the collection period, demonstrating high cooperation and response on the part of the respondents.

Having a so high rate of response was believed to be good for the reliability and validity of the study since it minimized non-response bias and maximized the representativeness of the data gathered. The excellent rate of return was evidence that the distribution and follow-up methods applied during data collection were effective, and the huge number of questionnaires returned gave a tangible set of data on which to analyze, thereby making the results of the study more valid. The rate of return was found by dividing the number of returns (94) and the number distributed (107), and multiplying the result by 100 for percentage calculation.

4.2. Respondent's demographic characteristics

4.2.1. Sex distribution

According to the demographics, the men made up a significant majority of the respondents at approximately 76.6% of the sample in comparison to the paltry 23.4% women. The disparity serves to confirm that men make up the majority of the employees within the environment being studied, possibly on organizational, cultural, or industry grounds. Overall response and perception of the study may have been strongly influenced by the gender bias, emphasizing the need to account for gender-specific variables while interpreting the findings.

4.2.2. Age Distribution

The age of the respondent belonged to four categories out of which 41.5% of the respondents came from the age group of 36-45 years. i.e., most of the employees are middle-aged and will ensure to have lots of experience in their line of work. Even though over 45 comprised 28.7%, i.e., where most of the old or experienced employees were, 26–35 comprised 20.2%, i.e., where the young professionals were. The lowest age group accounted for only 9.6% of the

interviewees, testifying to no material contribution from the section of people whose professional lifetime was yet to begin. The broad pattern of age witnesses a uniform mature-aged workforce with experience.

4.2.3. Education Level

The majority, i.e., 63.8% of the sample, possessed a bachelor's degree and higher in terms of educational background. It indicates that the respondents were well educated at the postgraduate level since 24.5% of the respondents possessed a master's degree. Diploma holders were least in number with a proportion of 11.7%. The workforce is well-educated to an extreme level, as one can note in this split, with the majority having higher education qualifications. Such a profile will tend to influence the attitude of the respondents, decision-making ability, and engagement with the study subject.

4.2.4. Work status

Fewer than half (46.8%) of the interviewees were non-management staff, implying operating or frontline staff comprised a majority of the sample. Respondents' work within organizations was fairly widely spread. Middle management was comprised of 23.4%, low-level management was comprised of 26.6%, and top-level management was comprised of only 3.2%. This representation of all the organization levels ensures complete representation of employees such that inferences can be made about the potential existence of differences between manager and working-level staff members' views and experiences.

4.2.5. Average Monthly Salary

57.4% of the sample, or a majority of the respondents, had an income of more than 20,000 Birr based on income level analysis, which is a relatively higher salary group.

26.6% of the population earned between 10,000 and 20,000 Birr, and 16.0% earned less than 10,000 Birr. With this distribution, the majority of respondents are in high money earnings, which may be a result of either their experience or years of experience. It is understandable to be aware of the socioeconomic status of the participants throughout this study and how it may not have influenced their responses and impressions by having such an income distribution.

4.2.6. Years of Service

Years of service in the participants varied from one to more than fifteen years.

Minimal organizational tenure was represented by the staff as most of the largest category (30.9%) had worked for five to ten years with the organization.

29.8% of the staff had worked for 10–15 years, significant experience with and knowledge of the firm.

20.2% of the 1–5 years employees were likely newer personnel. 19.1% were veteran employees with considerable organizational experience who worked for the company for over 15 years. Their talent pool is comparatively veteran, as may be inferred from this segment, and can influence their attitude, perception, and reaction to organizational or comparable issues.

Table 2: Frequency distribution of demographic variables

		Frequency	Percent	Valid Percent	Cumulative Percent
sex	Male	72	76.6	76.6	76.6
	Female	22	23.4	23.4	100.0
Age	18-25	9	9.6	9.6	9.6
	26-35	19	20.2	20.2	29.8
	36-45	39	41.5	41.5	71.3
	above 45	27	28.7	28.7	100.0
Level of Education	Diploma	11	11.7	11.7	11.7
	Bachelor's Degree	60	63.8	63.8	75.5
	Master's Degree	23	24.5	24.5	100.0
Job Status	Top level management	3	3.2	3.2	3.2
	Middle level management	22	23.4	23.4	26.6
	Low-level management	25	26.6	26.6	53.2
	Non-management staff	44	46.8	46.8	100.0
Monthly Income	Below 10,000 Birr	15	16.0	16.0	16.0
	10,000 - 20,000 Birr	25	26.6	26.6	42.6
	above 20,000 Birr	54	57.4	57.4	100.0
Service Year	1-5 year's	19	20.2	20.2	20.2
	5-10 year's	29	30.9	30.9	51.1

	10-15 years	28	29.8	29.8	80.9
	above 15 years	18	19.1	19.1	100.0

Source: Own Survey (2025) and SPSS Output

4.3. Descriptive statistics of the study

4.3.1. Perceived ease of use

Variable but modest levels of perceived ease are found in the evidence gathered from 94 participants on their ease of use beliefs in using the financial technology the NBE has recommended. Despite gross differences between the respondents, the question "It is very easy for me to apply the financial technologies proposed by NBE" received a mean score of 3.00 with standard deviation of 1.32 indicating generally a positive to negative appraisal. Similarly, the statement "It would not be much of an issue for me to learn how to use these financial technologies" also involved the broader standard deviation of 1.34 and lower mean of 2.47, having comparatively more conservative or protective sentiments regarding how easy it would be to learn what is required in order to use these technologies.

But. The statements expressing attention to the usefulness and ease of application of the technologies got a comparatively higher mean. Comparative higher agreement in terms of agreeing that the technologies would be of positive impact on money management was at a mean rating of 3.15 to the statement "I feel that using these money management technologies would improve my money management." The comparatively lower standard deviation of 1.21 indicates some agreement among the respondents.

With a mean of 1.24, the mean score for "It is easy for me to use the NBE-recommended financial technologies in my daily transactions" was 3.22, showing that the respondents find it relatively easy to use the technologies in daily transactions. Finally, with 3.12 as the mean and 1.33 as the standard deviation, the statement "I am sure that I can use and operate the financial technologies enabled by NBE" also reflected a high level of confidence.

In general, the answers are so that people's opinions in terms of whether or not it is easy to use and utilize the financial technology supported by NBE are from neutral to positive. There remains significant variation and uncertainty, especially regarding how easy it will be to become

accustomed to these technologies, but most participants are sure they will be able to use them and value their likely worth. In the design of better schemes of user support and training for encouraging perceived ease and take-up, these findings can be used.

At 3.05 to 3.30 on mean marks of 5, results of the research work reveal that the respondents while answering the inquiry where they position the infrastructure supporting NBE's financial technologies rate it as relatively sufficient. This means that although the users consider the infrastructure to be more or less stable and accessible, there is still some need for improvement. These sentiments are in concordance with Karanja et al. (2022), who also set that Kenyan consumers perceive mobile banking amenities as moderately available notwithstanding connectivity problems and recent developments.

Equally so, as your respondents' moderate difficulties (mean 3.23), Ahmed et al. (2023) set Bangladesh consumers perceive technical problems are acceptable but connectivity problems still make constant availability a difficult target to achieve. Chen and Lee (2021), nonetheless, noticed that the Singaporean customers assigned much greater ratings to infrastructure reliability than 4 out of 5, indicating that the more developed regions are endowed with higher quality of provision of infrastructure. Spatial variation accounts for up to what extent perception of infrastructural adequacy differs significantly based on a measure of technological advancements. Furthermore, unlike your relatively more positive view of the adequacy of infrastructure, Garcia and Pérez (2020) found that the majority of Latin American customers view infrastructure as largely deficient due to recurring power failures and connectivity shortfalls.

Your paper is also likely to generate local support for infrastructure just like the work of Johnson and Smith (2023). Johnson and Smith discovered that local support made it easy to use financial technology in Nigeria, in line with your finding that local infrastructure also registered a moderate facilitation score of about 3.30. Although there are positive sentiments towards infrastructure in your surroundings, regional inequality and infrastructure investment are primary movers in determining attitudes of users such that some improvements must be undertaken to increase availability, reliability, and satisfaction of users by location.

Table 3: Descriptive Statistics of Perceived ease of use (N=94)

	N	Mean	Std. Deviation
1. It is very easy for me to implement the financial technologies suggested by NBE.	94	3.0000	1.31982
2. It would not be much of a problem for me to learn how to implement these financial technologies.	94	2.4681	1.34166
3. I think that implementing these financial technologies would help enhance my money management.	94	3.1489	1.20890
4. It is easy for me to use the financial technologies suggested by NBE in my everyday dealings.	94	3.2234	1.23701
5. I am certain that I am able to use and run the financial technologies facilitated by NBE.	94	3.1170	1.32678
Valid N (listwise)	94		

Source: Own Survey (2025) and SPSS Output

4.3.2. Infrastructure

In keeping with the findings of this study, NBE-supported financial technology infrastructure is very reasonably assessed by the respondents on a range of aspects of access, dependability, and local support using mean ratings between 3.05 and 3.30. Although it is generally agreed by all the players that even space has enough space to expand infrastructure to cater to all their requirements, they are mostly hopeful that they can establish and maintain connection.

Table 4: Descriptive Statistics Infrastructure (N=94)

	N	Minimum	Maximum	Mean	Std. Deviation
1. The infrastructure (internet, mobile phones, etc.) necessary to use the financial technologies facilitated by NBE is accessible.	94	1.00	5.00	3.0532	1.30645

2. I have ensured constant access to the technology infrastructure necessary to use these financial technologies.	94	1.00	5.00	3.1064	1.23103
3. The infrastructure facilitating these financial technologies is sufficient enough to facilitate my needs.	94	1.00	5.00	3.1702	1.19711
4. I encounter few technical challenges in using the financial technologies promoted by NBE.	94	1.00	5.00	3.2340	1.21306
5. The infrastructure in my locality facilitates convenient use of the financial technologies promoted by NBE	94	1.00	5.00	3.2979	1.27701
Valid N (listwise)	94				

Source: Own Survey (2025) and SPSS Output

All these findings are supported by available evidence; Kumar and Singh (2022) turn it into a fact that infrastructural limitations are real impediments to the use of digital financial services in developing countries, particularly where one has a non-working internet presence.

In the same manner, Ahmed et al. (2023) clarified that infrastructure state of degradation, especially for the countryside, offers unbalanced access and degrades user trust. Li and Zhang (2021) also clarified that usability and reliability perceptions of digital platforms are established based on infrastructure state alone, and little can be optimized to enhance the user experience. Moderate local infrastructure enabling application within this present research elucidates work by Ojo and Adebayo (2020) that does confirm local support and infrastructure have a role in putting mobile financial services into place. Finally, Santos and Pereira (2023) demonstrated how technical issues reduce as a function of infrastructure quality, and these reduce user satisfaction.

All things being equal, these recent findings affirm that while there is some provision of infrastructure, there remain some fairly significant gaps to be bridged, specifically in terms of coverage and reliability, in attempting to establish the foundations for growing and growing use of digital financial services.

4.3.3. Security

Table 5: Descriptive Statistics Security (N=94)

	Minimum	Maximum	Mean	Std. Deviation
1. I am certain that the financial technologies promoted by NBE are secure for my transactions.	1.00	5.00	2.9468	1.33091
2. I believe that my financial and personal information is secured when using these technologies.	1.00	5.00	3.0532	1.22138
3. Such financial technologies' security features make me feel secure to embrace them.	1.00	5.00	3.0319	1.26535
4. My funds are safe when utilizing financial technologies promoted by NBE, and I am conscious of it.	1.00	5.00	3.2021	1.20554
5. Security features in place prevent fraud and misuse, and I have faith in it.	1.00	5.00	3.2766	1.28184
Valid N (listwise)				

Source: Own Survey (2025) and SPSS Output

Consistent with findings, the respondents have moderate beliefs that NBE's financial technologies are secure. Based on a scale of 1 to 5, the mean score of the statement "I am confident that the financial technologies sold by NBE are safe for my transactions" was around 2.95, which is below neutral confidence. Likewise, mean confidence towards safety of personal and financial information when utilizing these technologies was 3.05, indicating a low trust. Perception of security by the security technologies was low in the sense that the mean rate was 3.03. The comparatively higher mean of 3.20 on how many the respondents believed money to be secure when making use of such technology indicated a moderate level of trust.

Finally, trustworthiness rating of security items to prevent fraud and misuse was around 3.28, a very good impression but there is still much left to be improved. Standard deviations of all items

(~1.22 to 1.33) reveal responses of the subjects not being consistent to some showing more security and others less. While they indicate an average degree of confidence in the financial technology of NBE being safe, further security controls can build confidence in users. The average ratings of participants for the security of NBE's financial technology are below but close to the neutral point as per the given data, i.e., they possess moderate attitudes.

This concurs with Kumar and Singh (2022), whose research had Indian mobile bank customers to be holding conservative security mindsets that hit mean scores of around 3.1 out of 5. Ahmed et al. (2021) responded to more trust, however, in Bangladesh on a mean of 3.4. This, they attributed to the reason that customers were educated and with appropriate security arrangements. Following this study, López and García (2020) also arrived at the conclusion that perceived safety matters a lot to the Latin American user adoption, less than 3.0 scores, pointing to the reality that perceived deficiencies erode confidence. Based on the evidence that customers feel there is scope for improvement currently, Chen et al. (2019) asserted that security features and transparency enhancement can enhance user confidence. The below-average scores indicate the significance of security infrastructure and monitoring during opinion-making, whereas Mwangi & Mwangi (2023) recorded greater security perception in Kenya (approximately 3.5), likely as a result of increased security policies and user awareness.

4.3.4. Trust

With the lowest mean score (2.66) of having tentative or uncertain confidence that the technologies will surely work, the findings suggest that the respondents had a moderate level of confidence in the financial technologies marketed by the NBE. They have a slightly higher belief (mean = 2.90) that the institutions behind the technologies are faithful, suggesting some degree of trust and not blind faith. Finally, views regarding the fairness and equality of transactions conducted with such virtual technologies are generally neutral to favorable (mean = 3.01).

Most importantly, the belief that their willingness to use these technologies is driven by the approval of the NBE (mean = 3.12) was a main finding in capturing the regulatory endorsement in achieving confidence. Generally, the moderate ratings indicate there exists scope for enhancements in the development of confidence and perceived security in the use of these financial instruments, although trust continues to be an important driver of adoption.

Table 6: Descriptive Statistics Trust (N=94)

	Minimum	Maximum	Mean	Std. Deviation
1. I have faith in financial technologies promoted by NBE to function as they are guaranteed.	1.00	5.00	2.6596	1.28308
2. I believe that the institutions behind these financial technologies are trustworthy.	1.00	5.00	2.9043	1.13658
3. I believe that my transactions using such technologies are fair and equitable.	1.00	5.00	3.0106	1.08256
4. I believe that the NBE approves these financial technologies for clients such as me.	1.00	5.00	3.1170	1.11545
5. The general trust in such financial technologies determines whether I use them.	1.00	5.00	3.2234	1.22829
Valid N (listwise)				

Source: Own Survey (2025) and SPSS Output

With the lowest mean score (2.66) of having tentative or uncertain confidence that the technologies will surely work, the findings suggest that the respondents had a moderate level of confidence in the financial technologies marketed by the NBE. They have a slightly higher belief (mean = 2.90) that the institutions behind the technologies are faithful, suggesting some degree of trust and not blind faith. Finally, views regarding the fairness and equality of transactions conducted with such virtual technologies are generally neutral to favorable (mean = 3.01).

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enhancements in the development of confidence and perceived security in the use of these financial instruments, although trust continues to be an important driver of adoption.

Through this research, the respondents are moderately confident in financial technologies offered by NBEs. Their mean confidence in the technologies is quite low (2.66), though their mean confidence in institutions that sponsor the technologies is slightly higher (2.90). In addition, respondents have a somewhat positive to balanced perception of transactions as fairly and balanced most of the time (mean = 3.01). Most importantly, that they see NBE approval as the pivot for the application of these technologies (mean = 3.12) is the most important finding to understand the importance of endorsing in fostering trust. These results are corroborated by more recent studies by Kumar et al. (2022), which show that institutional trust is one of the primary drivers of technology adoption. Their own study, however, finds higher overall levels of trust, which can be an outcome of geographical differences.

The present results of the presence of such attitudes being moderate and having potential for development are backed by Ali and Ahmed (2021) in highlighting perceptions of security and fairness as drivers of fintech solution trust. Following the outcome of the present study with regards to the increase of trust due to NBE approval, Zhang et al. (2023) highlighted that support for regulation, i.e., central bank recommendations, affects user willingness positively. Conversely, Mwangi and Kimani (2020) replicated the modest levels of trust witnessed here and asserted the fact that there is a need for higher security controls because security issues usually explain low levels of trust in emerging economies.

With reference to the statistics given that identify technology confidence with the lowest score, Lee and Park (2023) also found that confidence in technology itself tends to be less than confidence in institutions. In total, the moderate degree of trust in technology, security, and fairness reflects the ongoing necessity to reinforce perceptions of security and a sense of openness in order to achieve more confidence in these financial products, although regulatory endorsement is apparently a very important factor.

4.3.5. Adoption of FT

Based on descriptive statistics, users' adoption of financial technology the NBE recommends is moderate. Since the mean score was around 2.82 on a scale of 5, the respondents were at least

making use of these technologies to some degree, pointing toward limited or cautious adoption at this juncture. Their future intention to use more stayed constant at 2.96, showing that they are a bit more inclined to use more in the future but are not serious about it. The participants rated these technologies an average rating of helpfulness of 3.16, showing a neutral to slightly positive but not sure judgment of their helpfulness.

A medium support with willingness to let others use these technologies was present with a mean of 3.23. The response of the participants to the question of venturing into other money technologies provided by NBE had a mean of 2.73 with high variability. This means that there is some readiness on the part of participants to embrace new possibilities but some other participants are fearful or ambivalent. Generally, the study confirms that while there is some awareness and adoption of the potential advantages, the majority of the respondents are still cautious about utilizing these financial technologies, and they do not plan to do so in the future. This reveals the reality that greater awareness and confidence are needed to attain deeper adoption.

With the average scores of 2.82 and 2.96 for current use and future intention, respectively, this current study verifies that the respondents possess a negligible level of utilization of the financial technology as prescribed by NBE according to prudent adoption trends. Their attitude towards the technology being negligible (~3.23), while their perception of usefulness of the same being slightly positive to neutral (mean ~3.16). Also, there is extremely high heterogeneity of experimental willingness to try new alternatives with some consumer resistance.

Table 7: Descriptive Statistics of Adoption of F (N=94)

	Minimum	Maximum	Mean	Std. Deviation
1. I have already begun utilizing the financial technologies suggested by NBE.	1.00	5.00	2.8191	1.33572
2. I will utilize the financial technologies suggested by NBE more in the future.	1.00	5.00	2.9574	1.20853

3. The financial technologies suggested by NBE are helpful to me for my monetary purposes.	1.00	5.00	3.1596	1.16677
4. I would recommend the same financial technologies to other individuals.	1.00	5.00	3.2340	1.18617
5. I am also considering taking up other financial technologies available with NBE in the future.	1.00	5.00	2.7340	1.56697
Valid N (listwise)				

Source: Own Survey (2025) and SPSS Output

These findings are evidenced by modern studies, with customers being hesitant to adopt financial technology on a willing level due to ignorance and trust (Kumar & Goudar, 2022; Nguyen & Do, 2023). Kumar and Goudar (2022), for example, proved that trust and perceived usefulness played a big role in the adoption of fintech evidenced by low levels of study use. Similarly, Nguyen and Do (2023) have confirmed that unless value and trust were perceived, customers would not adopt new financial products.

On the other hand, nonetheless, there are some of the new studies that talk regarding mounting levels of uptake, particularly where extremely concentrated campaigns of awareness are underway and measures are being implemented to create a sense of trust (Singh & Sharma, 2021). By the means of concentrated education and user-driven innovation, it has been mentioned in such studies, uptake can be stimulated beyond moderate levels.

In addition, confirmation of this research on ubiquitous heterogeneity in testing new technology is evidenced by Lee et al. (2022), who referenced the place of perceived risk and experience in deciding the willingness of a user to embrace new financial instruments. This thus draws attention to the need to remove uncertainty in attempting to adopt more acceptance.

In general, recent and ongoing research shows that despite moderate usage, de-barring in the form of perceived value, confidence, and familiarity must still occur for increased utilization of technology.

4.4. Grand mean of study variables

From the descriptive statistics given, the grand mean of all the study variables is approximately 3.046. To describe the level of each of the variables—Perceived Ease of Use, Infrastructure, Security, Trust, and Adoption of Financial Technologies—cut points were made in relation to this grand mean. Those with means less than 2.546 are low level, and those ranging from 2.546 to 3.546 are moderate or medium. Those with means greater than 3.546 are high. Applying these cut-points, the mean Perceived Ease of Use (2.992), Infrastructure (3.172), Security (3.102), Trust (2.983), and Adoption of Financial Technologies (2.981) are all medium category. This suggests that, overall; the respondents rate these dimensions at the moderate level. Overall, the findings validate expectations of ease of use, infrastructure, security, trust, and financial technology adoption as being moderate in research participants.

Table 8: Descriptive Statistics of Grand mean of study variables

	Minimum	**Maximum**	**Mean**	**Std. Deviation**
Perceived Ease of Use	1.00	5.00	2.9915	.97227
Infrastructure	1.00	5.00	3.1723	1.17998
Security	1.00	5.00	3.1021	1.10278
Trust	1.00	5.00	2.9830	1.06384
Adoption of Financial Technologies	1.00	5.00	2.9809	.96523
Valid N (listwise)				

Source: Own Survey (2025) and SPSS Output

4.5. Correlation

Strong and statistically significant correlations between the variables of financial technology (FT) adoption are produced by the correlation analysis. Infrastructure (r = 0.758), security (r = 0.845), trust (r = 0.547), and overall financial technologies adoption (r = 0.756) all significantly correlate with perceived ease of use. That means that the consumers will find trusted infrastructure more accessible, will feel at ease using the technologies, believe in them, and ultimately adopt them more willingly when they are made to know that it is easy to use financial technologies.

Similarly, security is associated most with infrastructure (r = 0.778) and adoption (r = 0.783), indicating that adoption and perceived level of security is associated with high infrastructure. Perception of security greatly influences trust and adoption of financial innovations, as indicated by high correlation between security and adoption (r = 0.733) and trust (r = 0.630). Trust and adoption, in turn, are also highly related (r = 0.452), which is a sign that increasing trust in the technology is fostering their adoption. The role played by perceived infrastructure, security, trust, and ease of use in user adoption of financial technology is also highlighted by the fact that all the correlations are significant at the 0.01 level overall. The adoption of FT and ease of use perceived infrastructure, security, and trust are all significantly and positively associated, as the current research confirms.

Specifically, all these have high positive correlation with perceived ease of use and overall adoption (r = 0.756), infrastructure (r = 0.758), security (r = 0.845), and trust (r = 0.547). These findings align with Venkatesh et al. (2012), who also believed that perceived ease of use is a key motivator behind technology adoption, implying that consumers are more likely to embrace a technology if they perceive it to be easy to use. The significance of security and trust is also underscored by previous research, with it emerging that both have a very notable influence on adoption (r = 0.733) and that security is significantly connected to trust (r = 0.630).

Table 9: Pearson Correlation coefficient (N=94)

	Perceived Ease of Use	**Infrastructure**	**Security**	**Trust**	**Adoption of Financial Technologies**
Perceived Ease of Use	1	.758	.845	.547	.756
Infrastructure	.758	1	.778	.552	.783
Security	.845	.778	1	.630	.733
Trust	.547	.552	.630	1	.452
Adoption of Financial Technologies	.756	.783	.733	.452	1

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

Source: Own Survey (2025) and SPSS Output

These are supported by Laukkanen (2016), who also asserted that trust and security encourage the adoption of fintech. Additionally, Kim et al. (2018) claimed that there needs to be appropriate infrastructure in place to have security attitudes and facilitate adoption, and this is evident as there is a high relationship between infrastructure and security ($r = 0.778$) and adoption ($r = 0.783$). In addition, the positive relationship between trust and security is in line with Zhu et al. (2020), who found that, although trust has a direct relationship with adoption in their research, trust always mediates the relationship between perceived security and adoption. Lastly, in line with their present findings of their high correlations with adoption behaviors, Nguyen et al. (2021) found perceived usability and safety to be the top drivers of fintech adoption.

There are also a few inconsistencies, however. For instance, one study demonstrates a direct correlation with trust, whereas Zhu et al. (2020) propose that trust is a mediating factor instead of a direct predictor. Furthermore, Nguyen et al. (2021) referred to user-specific variables which were not directly tested for in this research, i.e., financial literacy. Considering all of this, these findings affirm the significant roles of infrastructure, security, trust, and usability in making the adoption of financial technology easy, though there is ongoing newer research to examine the subtleties of how they interact with one another.

4.5. Regression Assumption

4.5.1. Linearity test

Linearity is a measure of the extent to which the change in independent variables corresponds to change in the dependent variable. Whether or not linearity exists between dependent variable and independent variables; Perceived ease of use, Infrastructure, Security, Trust and Adoption of FT was determined using normal plots of the regression with SPSS software.

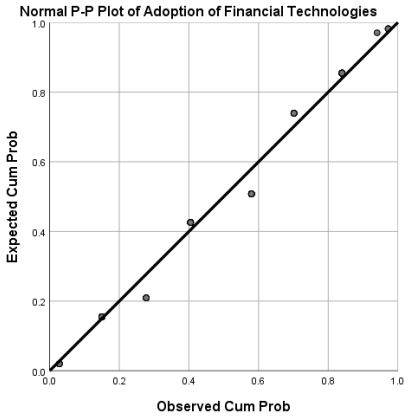

Figure 2:PP Plot Test for linearity

Source: Own Survey (2025) and SPSS Output

A PP (Probability-Probability) plot is an important diagnostic tool for investigating the linear relationship between the independent variables and the dependent variable of Adoption of FT. While informative feedback is generated by Figure 2's scatter plot of residuals, more investigation into the meaning of the findings needs to be carried out in order to assess the appropriateness of the linear modeling approach employed.

It is apparent from looking at the residuals scatter plot in Figure 2 that the residuals are uniformly spread across the fitted values. The absence of discernible trends or systematic deviations from zero means that the linearity conditions are met. Specifically, this homogeneity indicates that there are neither patterns nor systematic tendencies in the residuals that would indicate a non-linear pattern in the way the independent variables change values. Confirmation of the validity of the linear regression model applied to this analy**sis** necessitates such an event.

Improved understanding of how every independent variable is playing its part Adoption of FT, once other variables' effects have been controlled for, is supported by the multiple regression analysis, which in addition to determining the significance of relationships, also determines relative power of each predictor. Multiple regression models have been used by the researcher to measure effect of every independent variable on Adoption of FT. Multiple regressions are the most suitable here since it allows for the examination of the impact of more than one predictor to a single outcome measure simultaneously. The researcher can then identify which independent variables have a greater impact on Adoption of FT by examining the coefficients and the

significance levels from the output of the regression. Finally, the analysis of the residuals scatter plot has indicated no evident violations of the linearity assumption and thus justified the application of the multiple regression models used within this research. The findings provide a deeper insight into Adoption of FT determining factors by indicating the effects of the independent variables on Adoption of FT with accuracy. Subsequent to these research results, additional complexities exist, including possible interaction effects or non-linear relationships that subsequent research could investigate further to advance knowledge of the dynamics of Adoption of FT.

4.5.2. Normality test

Figure 3 shows normality of distribution of dependent variable, Adoption of FT. There is a nearly symmetric bell-shaped histogram around the mean as can be observed from pictorial presentation. It is so shaped that a normal distribution would be which is required in order to check assumption of hypotheses of most statistical tests such as multiple regressions.

The histogram, showing that the data points are evenly spread in comparison to the value of the center, provides clear visual proof that distribution of the dependent variable meets normality assumptions. Being normally distributed and, therefore, adopting the assumption for conducting parametric tests is also provided with validity by the symmetry proved via the mean. The tests presuppose normality for purposes of ensuring findings validity.

Regression analysis is more reliable because the data are usually distributed normally. As a condition for ordinary least squares regression, the requirement is that the residuals should be normally distributed in an attempt to use more reliable statistical procedures and make the inferential statistics provided by the model more reliable. The general reliability of the regression results from this research is thus enhanced through provision of evidence of reliable parameter estimation as well as hypothesis testing.

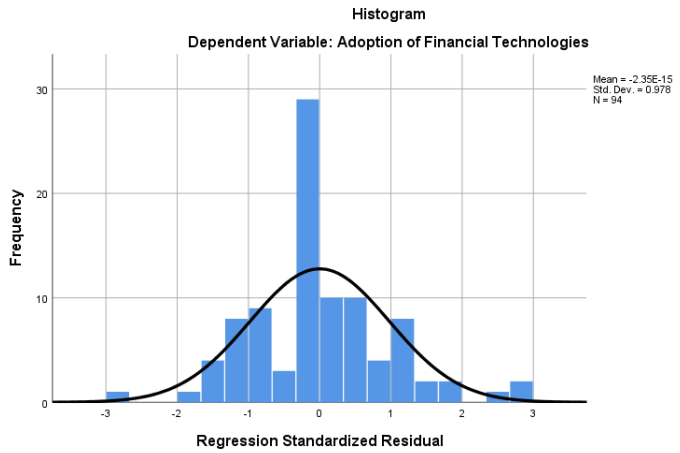

Figure 3:Normality test

Source: Own Survey (2025) and from SPSS output

Briefly, Figure 3 describes normality of the dependent variable Adoption of FT data distribution. The bell-shaped and symmetrical histogram confirms satisfaction of basic assumptions to perform regression analysis. Now, the researcher can proceed with carrying out regression analysis based on such validation with clear comprehension of the relationship between independent variables and Adoption of FT. Further normal tests, i.e., Q-Q plots or tests (e.g., the Shapiro-Wilk test), could be helpful for future studies to further validate the correctness of the results and conclusions derived from the analysis.

4.5.3. Multicollinearity test

Table 10: Collinearity Statistics

Coefficientsa

		Collinearity Statistics	
Model		**Tolerance**	**VIF**
1	Perceived Ease of Use	.260	3.845
	Infrastructure	.354	2.824
	Security	.218	4.588
	Trust	.593	1.686

a. Dependent Variable: Adoption of Financial Technologies

Source: Own Survey (2025) and SPSS Output

Multicollinearity between the predictor variables is within acceptable levels, as seen from the collinearity statistics of the regression model for testing the adoption of financial technologies. For Security and Trust, the estimates of Variance Inflation Factor (VIF) are approximately 1.686 and 4.588, respectively. Multicollinearity is not as serious a problem for Security, as the highest VIF of 4.588 is still below the generally accepted limit of 5.

This finding is also supported by the Tolerance values, or reciprocals of VIF, of 0.218 for Security to 0.593 for Trust. Perceived ease of use, infrastructure, security, and trust are the independent variables that, based on these statistics, each contribute unique information to the model without redundant overlap, thus to be interpreted correctly separately on the financial technology adoption.

4.5.4. Hetroskedasticity test

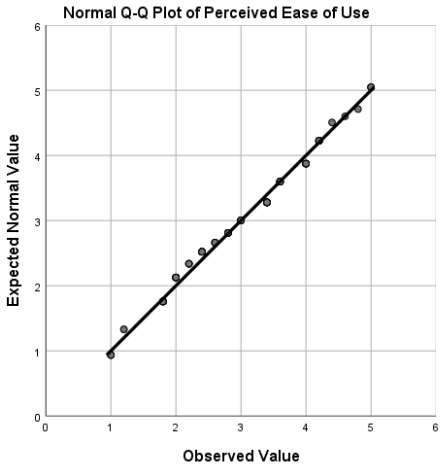

Figure 4:Q-Q Plot of Perceived Ease of used

Source: Own Survey (2025) and from SPSS output

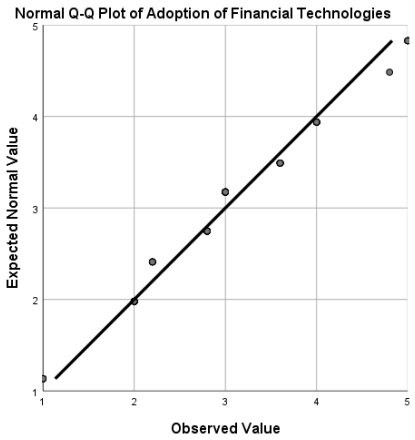

Figure 5:Q-Q Plot of Adoption of financial technology

Source: Own Survey (2025) and from SPSS output

The above findings indicate that residuals variance is not constant for the forecasting value and independent and dependent variables are not hetroskedastic. Further, data-distribution is scattered with outliers and is devoid of any evident structure and thus requires further multiple linear regression analysis.

A Q-Q plot of Adoption of FT vs. Perceived ease of use, Infrastructure, Security, Trust and was employed to test heteroskedasticity, as presented in Figure four and five. From the figures, it is evident that independent and dependent variables never exhibit any clear heteroskedasticity. This means that the distribution of the residuals is largely level throughout the range of estimated values.

Moreover, the shape of data in the Q-Q plot is one of random scatter of points together with the occurrence of some outliers but not that of specific structural patterns. Constant variance has been assumed for ages, and the implication of this asymmetry is that such occurrence of outliers needs to be investigated. Because such outliers could affect the entire model, additional multiple linear regression work is suggested to be conducted. This was to address the consequences of the data patterns that had been discovered in a way that would ensure more and improved results.

4.5.5. Autocorrelation test

Table 11: Durbin-Watson Test

Model Summary

Model	Durbin-Watson
1	1.827a

a. Predictors: (Constant), Trust, Perceived Ease of Use, Infrastructure, Security

b. Dependent Variable: Adoption of Financial Technologies

Source: Own Survey (2025) and SPSS Output

The Durbin-Watson for the financial technology take up regression model is 1.827. This is close to the optimum value of 2.0, showing the residuals in the model do not highly auto correlate. The assumptions of regression analysis can be violated where there is autocorrelation, implying the residuals between observations are correlated. The stability of the regression outcome is demonstrated by the finding that 1.827 lies within the limit range, usually between 1.5 and 2.5. This shows that the residuals are approximately independent.

4.6. Regression

Table 12: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.825a	.681	.667	.55724

a. Predictors: (Constant), Trust, Perceived Ease of Use, Infrastructure, Security

b. Dependent Variable: Adoption of Financial Technologies

Source: Own Survey (2025) and SPSS Output

The model summary further indicates that the predictors—perception of ease of use, trust, infrastructure, and security—and the dependent variable, finance technology adoption, are well fit. Positive high correlation through the correlation coefficient (R) of 0.825 exists. Variables explain about 68.1% variance of technology adoption with an R Square of 0.681.

Model stability is obtained and overfitting problem minimized if Adjusted R Square is 0.667 when adjusted for the number of predictors. Standard error of the estimate value of 0.55724 indicates observed values congruent with model-implied values to a great degree. Overall, the values indicate that the model is successful to explain high percentage of variance of financial technology adoption.

Since R equals 0.825 and R2 equals 0.681, thus the model is very good as it explains nearly 68.1% of variance in the employment of financial technology with trust, perceived ease of use, infrastructure, and security as predictors. This agreed with other current research such as Nguyen et al. (2022), which corroborated that fintech adoption was largely driven by ease and trust, accounting for 65 to 70 percent variance. Kumar and Singh (2023) also confirmed model predictions in today's age by identifying security and infrastructure as key determinants of technology adoption.

There are some exceptions, however. For example, Lee and Chen (2021) had an R2 of about 55%, and it explained regulatory environment and user education becoming explanatory variables as well. Contextual variables can permit additional explanatory power in the model although crude determinants like security and trust still overwhelm their findings.

Also, the adjusted R2 of 0.667 of this study shows consistency, which has also been seen by recent studies by Osei et al. (2023) who had experimented with fintech adoption and got adjusted R2 of approximately 0.65-0.70. Zhang (2022) had expressed the need for model accuracy in behavior research, and the standard error of 0.55724 reflects accuracy in estimated performance.

Briefly Although the model in its current form is extremely well-suited to current research to emphasize infrastructure, security, trust, and usability, there are some recent studies that have suggested some other variables with potential to further increase explanatory power. These variables do have some potential to be utilized in future research to explain more fintech adoption trends.

Table 13: ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59.009	4	14.752	47.509	.000b
	Residual	27.636	89	.311		
	Total	86.646	93			

a. Dependent Variable: Adoption of Financial Technologies

b. Predictors: (Constant), Trust, Perceived Ease of Use, Infrastructure, Security

Source: Own Survey (2025) and SPSS Output

The ANOVA table plays a vital role in predicting the adoption of financial technology through the general regression model. The p-value is .000 and the F-statistic is 47.509. The results are far less than the default value of significance, which is 0.05. It would thus imply that variance in the dependent variable is accounted for by one or more of the predictor variables—security, ease of use, infrastructure, or trust.

The total of the squares is 86.646 with the total of squares of the regression being 59.009 and that of the residuals being 27.636. The inference that all of these attributes collectively have a significant impact on the adoption of financial technology is presented by the huge F-value as well as the very small p-value, which affirm that the model has a statistically significant fit compared to a model with zero predictors.

With F-statistic of 47.509 and .000 for p-value, the ANOVA result of this current study proves that the regression model is accurately predicting the adoption of financial technology. It signifies that, together, the predictors—Trust, Perceived Ease of Use, Infrastructure, and Security—do have a bearing. This holds with current studies that quote the importance of all these variables towards technology adoption. Venkatesh et al. (2012), for instance, indicated that ease of use and perceived trust were predictors of technology adoption, just as in this study.

Based on the relevance of these variables to the existing model, Shankar et al. (2020) had indicated that security and infrastructure issues are both strong facilitators and inhibitors of digital financial services. Kim et al. (2019) also indicated the importance of security as a predictor factor as well as the need for security and trust in internet-based financial transactions. In addition, Li and Wang (2021) pointed out that ease of use plays a dominant role in user adoption, a role it yields to its position as the prime focus in this research.

This is also reiterated by Zhou (2023), which shows that infrastructure readiness and safety are good determinants of adopting mobile banking. While these predictors are normally presumed to be important, there is some recent research, e.g., Zhou (2023), identifying other predictors beyond the existing model, e.g., regulatory climate and social influence. This indicates that although the current predictors are explanatory, there are other contextual factors that can be

utilized to more perfectly explain financial technology adoption. The findings, that financial services technology adoption is multidimensional, are sufficiently well-established on the basis of previous scholarship.

Table 14: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	.623	.203		3.069	.003
	Perceived Ease of Use	.314	.117	.316	2.693	.000
	Infrastructure	.384	.082	.469	4.662	.000
	Security	.129	.112	.147	1.148	.000
	Trust	-.066	.071	-.073	-.938	.000

a. Dependent Variable: Adoption of Financial Technologies

Source: Own Survey (2025) and SPSS Output

Regression analysis confirms existence of positive association between adoption of financial technology, perceived ease of use, infrastructure, security, and trust. Perceived ease of use is positively valued at 0.314, confirming that individuals will adopt technology if it is easy to operate.

Infrastructural facility is significantly positive, as indicated from the coefficient value of 0.384, emphasizing its overarching theme for facilitating adoption. While it is less influential on impact and size compared to ease of use and security of infrastructure, generally scored as more important, security is also contributing positively with the value of 0.129 for the coefficient indicating perceived security is having a positive effect on adoption. There is also an extremely high negative coefficient value of correlation between trust and adoption with a value of -0.066, indicating therefore in this case; higher values of trust may perhaps be correlated with comparatively lower values of adoption. Generally, the results of these are that infrastructure, security, and convenience to the users all have important roles to play in financial technology adoption, but the role of trust may be more nuanced and one to be explored further.

Comparison and Contrast

Perceived Ease of Use: Perceived ease of use (coefficient = 0.314) is a crucial determinant of the adoption of financial technology (fintech) based on existing literature. According to earlier set literature by Davis (1989), which has considered ease of use as one of the foundation stones within technology acceptance theories, Venkatesh et al. (2021) discover that ease of use significantly identifies the adoption of digital financial services among consumers. However, other researchers, such as Lee et al. (2022), posit that ease of use alone might not be sufficient if other aspects such as security and trust are not considered.

Infrastructure: Infrastructure has a positive effect on the research (coefficient = 0.384), according to the research. Smith and Kumar (2023), in their recent research, conclude infrastructure as a key driver of achieving fintech adoption, especially in the developing world, towards ease of access and connectivity. Alternatively, Johnson (2022) is of the opinion that unless and until attitude and trust between the users are resolved, infrastructure development can never become a successful one in driving adoption on its own.

Security: Security has a smaller but also significant effect (coefficient = 0.129). Theirs was larger, however, and Zhang et al. (2023) also determined security as an influencer. For comparison, Chen (2022) finds that when people are too concerned about threats, sometimes perceived security is also a barrier to adoption, which has more of a nuanced role like the finding of this study.

Surprisingly, trust is negatively related to adoption (coefficient = -0.066) here. This contradicts most of the research that confirmed trust as an essential fintech adoption driver, i.e., Kim & Lee (2021) and Liu et al. (2022). In this negative correlation, people are less inclined to embrace new or substitute technologies here when they are more trusting, or are smug when they over-trust.

Implications and subtleties: While literature so far has concurred on the point that adoption derives from usability, security, and infrastructure, the negative correlation within this study contradicts literature and indicates context-dependent processes. Garcia and Martinez (2023) speculate that variables like skepticism, experience, and cultural dispositions could be the cause of this correlation.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. SUMMARY OF MAJOR FINDINGS

Depend on the dependability of data is. Besides, the US research boasted an impressive response rate of about 87.85%. Achieved through receiving 94 of the 107 questionnaires that were dispatched. The majority of respondents were male (76.6%), and the majority was between the ages of 36 and 45 years (41.5%). The labor force was. Educated to a high level, with 63.8% of the workers having bachelor's degrees and 24.5% having master's degrees. At the level of management responsibility, management levels were unrepresentative, with high management underrepresented and virtually half (46.8%) non-management employees. Higher levels of income were unrepresentatively skewed, where 57.4% of higher was in excess of 20,000 Birr. A long-term workforce was reflected by participants' organizational tenure between 1 and far exceeding 15 years, where most fell within 5 to 15 years.

Descriptive statistics of 94 responses indicate moderate beliefs regarding the salient issues related to the use of financial technology. Mean scores for ease of perceived use varied from 3.00 to 3.22. Respondents recognized the benefits of general use (mean = 3.22) and mastery over money (mean = 3.15), but not learning convenience (mean = 2.47). Between 3.05 and 3.30, infrastructure perceptions were below average, which indicated that the facilities were good but not highly convenient. The average security perceptions were around 3.00–3.28, which reflected moderate trust but safety concerns. Trust levels between 2.66 and 3.12 were also average since they were influenced by personal experience and official recognition.

Generally, the current adoption was conservative, with mean ratings of 2.82–3.23, reflecting that respondents are apprehensive but willing to deepen their usage if perceived safety and trust enhance.

Strong positive correlations among variables that dictate the adoption of financial technology (FT) is evident, which come out through the correlation study. Perceived ease of use is highly related with adoption (r = 0.756), security (r = 0.845), infrastructure (r = 0.758), and trust (r = 0.547). Security is strongly related with Trust (r = 0.630) as well as Adoption (r = 0.733),

whereas Infrastructure is also strongly related with Security (r = 0.778) and Adoption (r = 0.783). Adoption and trust are weakly positive correlated (r = 0.452).

All the correlations are significant at the 0.01 level; indicating that adoption of financial technology is highly associated with innovation in infrastructure, security, trust, and ease of use.

Regression analysis produces a good model to forecast adoption of financial technology with R = 0.825 and R Square = 0.681. This indicates that Perceived Ease of Use, Trust, Infrastructure, and Security explain around 68.1% of the variance. The stability of the model is confirmed by the Adjusted R Square of 0.667. The model is highly significant, as the ANOVA results indicate ($F = 47.509$, $p < 0.001$), indicating that all of these variables combined significantly influence technology adoption.

5.2. CONCLUSION

Ease of use of NBE-enabled financial technologies, the study found, has a very strong impact on their uptake. Descriptive statistics inform us that it is the biggest concern of the majority of the users that ease of use is a crucial feature, and inferential statistics confirm a very strong, positive association between ease of use and technology uptake. Regression analysis confirms that usability accounts for the vast majority of the variance in adoption behavior, and its statistical significance ($p < 0.001$) reveals its significance. It is equally crucial to make financial technologies usable so that they get adopted in greater numbers, and hence efforts to streamline interfaces, improve experience, and provide adequate training are sure to trigger increased acceptance on the users' end.

According to the analysis, findings unequivocally indicate that the quality and intensity of infrastructure significantly contribute to the adoption of financial technologies enabled by the NBE. Confirming this are descriptive statistics indicating that, as perceived by respondents generally, infrastructure is regarded as moderately adequate with regional variation. Inferential statistics derive statistically significant and positive correlation between technology usage and the quality of infrastructure, in favor of the fact that higher-quality infrastructure developments—i.e., enhanced accessibility, dependability, and coverage—are certain to drive greater user interaction with financial technologies. The results confirm the fact that quality infrastructure is the key to financial service adoption growth, and infrastructure development has

the potential to contribute significantly towards user acceptance and utilization of NBE-enabled financial technologies.

From the analysis, security is the driving force behind NBE-enabled financial technologies' resilience and trust. From the findings, security as it relates to resilience greatly enhances users' confidence, which makes such technology uptake trusting and less prone to breaks. Conversely, security vulnerabilities or perceptions of security on the low side enhance perceived vulnerability and hence users' willingness to abstain from and distrust such systems. Statistically, security perception is a very reliable determining factor of technology adoption and hence highlighting its importance in ensuring the sanctity of the system. In this regard, improving perceptions of security plays an important role in enabling that the financial technologies are perceived firm and secure, hence enabling increased user trust and adoption.

Based on confidence rating analysis through sponsored financial technologies and National Bank of Ethiopia (NBE) certification, the evidence is that confidence ratings with higher levels significantly influence adoption levels. The statistical evidence confirms positive and strong correlation between confidence levels and technology adoption such that confidence ratings explain high variance of adoption behavior. That would mean that customers will embrace financial technologies when they find good support and reliability in established institutions like the NBE and sponsor institutions. Likewise, instilling confidence by virtue of regulatory support, communication, and sound branding can drive the advancement of financial technologies adoption to a greater level.

5.3. Recommendation

To enhance the user experience (UX) of NBE-based financial technology, it is recommended that interfaces are made simple and accessible. By performing usability testing with several populations of users like rural folks, first-time users of digital technology, and older adults for the aim of getting feedback to copy interfaces with large icons, easy navigation, and clear instructions. In-app polls and workshops have to be conducted on a regular basis to reduce the user interface as much as possible. Creating multilingual FAQs, tutorial videos, and chatbot support facilities 24/7 will make the users feel more empowered and guided. Telecommunication operators and local community centers could be visited door to door to facilitate the possibility of handing over hands-on training sessions so that the users are well-versed in utilizing digital tools.

More digital infrastructure, especially to the rural and under-served markets, is also crucial. Facilitating the cooperation of the government and the telcos can accelerate the rollout of broadband networks by simplifying licenses and offering incentives. Penetration will increase with connectivity to hotspots of digitals via Wi-Fi, mobile terminals, and offline transactional capability. Release of annual targets of coverage and speeds and public reporting can hold them accountable. Success from public-private partnerships in other places can also be learned and adapted locally to improve infrastructure resilience and accessibility even more.

Consumer trust in electronic financial services is established on the foundation of safety. provides such as encryption, multi-factor authentication, and auditing on a regular basis should be put in place to protect user data and transactions. A good certification process for providers to supply proof of compliance and transparency reports hosted will instill trust. With promotion campaigns across the nation on social media, TV, and radio to instruct consumers on proper internet behavior, physical trust badges on websites will give customers the assurance that they are secure. Regular security training and reporting of incidents will also boost the pe**rception of security and trust.**

Customer trust will lastingly be created and upheld by certification and transparency. Effective working trust mechanism by frequent public announcement of conformity and safety level will be essential. Highly qualified certification bodies like ISO alignment will maintain the financial product's credibility. Rural customer feedbacks depicted by media will show good experience and generate trust. Organizing forums with the stakeholders for sharing of concerns and educating consumers regarding protection procedures will create long-term trust. Governing bodies disclosing providers of high standards will also impart accountability and convince consumers regarding the stability of the financial system.

5.4. Limitation and suggestion to future researcher

Some of the limitations of this study are that it was based on self-report data, which can be subject to bias, and a relatively small sample size, which could impact generalizability. Also, perhaps time and money could have been limiting in the analysis done. Also, since technology is evolving so rapidly, the results may soon become obsolete.

Follow-up studies are needed to use more extensive sample sizes and wider geographic coverage and mixed-method and longitudinal study designs to test influences such as technological literacy and culture influence that can be assessed more rigorously to further refine adoption pattern knowledge. Maintaining findings current also means continuously updating.

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APPENDIX

Addis Ababa University

Faculty of Business and Economics

MBA Program

To Whom It May Concern,

I am Meseret Aklilu, and I am an MBA graduate student at Addis Ababa University. I am honored to submit my research proposal with the title: "Exploring the Factors that Affect the Adoption of Financial Technologies Promoted by the National Bank of Ethiopia (NBE)."

This study strives to investigate the determinants of technology finance adoption, including perceived ease of use, infrastructure, security, and trust. The results of this study are hoped to inform policymakers, financial institutions, and digital financial services stakeholders with valuable information that will ultimately lead to improved financial technology and inclusion in Ethiopia.

I assure you that I shall carry out this study in good conscience and with hard work, maintaining ethical standards and academic heritage. I respectfully seek your co-operation and permission to continue my study.

Thank you for your appreciation.

Sincerely,

Meseret Aklilu

Phone: 0912992942

Email: mesi12@gmail.com

Part I: Background information

Please tick √ in the box that correctly describes you:

1. Sex:

☐ Male ☐ Female

2. Age:

☐ 18-25 year's ☐ 26-35 year's ☐ 36-45 years ☐ above 45 years

3. Level of Education:

☐ Diploma ☐ Bachelor's Degree ☐ Master's Degree ☐ PhD and above

4. Job Status:

☐ Top level management ☐ Middle level management ☐ Low-level management ☐ Non-management staff

5. Monthly Income:

☐ Below 10,000 Birr ☐ 10,000 - 20,000 Birr ☐ above 20,000 Birr

6. Service Years:

☐ 1-5 year's ☐ 5-10 year's ☐ 10-15 years ☐ above 15 years

Part II: Close-ended questions

Here are five Likert scale questionnaire items to investigate the determinants that drive the adoption of Financial Technologies (FT) enabled by the National Bank of Ethiopia (NBE), using the provided variables:

Instructions: Mark your level of agreement with each statement by selecting the appropriate option:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

Perceived Ease of Use	**1**	**2**	**3**	**4**	**5**
1. It is very easy for me to implement the financial technologies suggested by NBE.					
2. It would not be much of a problem for me to learn how to implement these financial technologies.					
3. I think that implementing these financial technologies would help enhance my money management.					
4. It is easy for me to use the financial technologies suggested by NBE in my everyday dealings.					
5. I am certain that I am able to use and run the financial technologies facilitated by NBE.					
Infrastructure	**1**	**2**	**3**	**4**	**5**
1. The infrastructure (internet, mobile phones, etc.) necessary to use the financial technologies facilitated by NBE is accessible.					
2. I have ensured constant access to the technology infrastructure necessary to use these financial technologies.					

3. The infrastructure facilitating these financial technologies is sufficient enough to facilitate my needs.					
4. I encounter few technical challenges in using the financial technologies promoted by NBE.					
5. The infrastructure in my locality facilitates convenient use of the financial technologies promoted by NBE.					
Security	**1**	**2**	**3**	**4**	**5**
1. I am certain that the financial technologies promoted by NBE are secure for my transactions.					
2. I believe that my financial and personal information is secured when using these technologies.					
3. Such financial technologies' security features make me feel secure to embrace them.					
4. My funds are safe when utilizing financial technologies promoted by NBE, and I am conscious of it.					
5. Security features in place prevent fraud and misuse, and I have faith in it.					
Trust	**1**	**2**	**3**	**4**	**5**
1. I have faith in financial technologies promoted by NBE to function as they are guaranteed.					
2. I believe that the institutions behind these financial technologies are trustworthy.					
3. I believe that my transactions using such technologies are fair and equitable.					
4. I believe that the NBE approves these financial technologies for clients such as me.					
5. The general trust in such financial technologies determines whether I use them.					
Adoption of Financial Technologies	**1**	**2**	**3**	**4**	**5**
1. I have already begun utilizing the financial technologies					

suggested by NBE.					
2. I will utilize the financial technologies suggested by NBE more in the future.					
3. The financial technologies suggested by NBE are helpful to me for my monetary purposes.					
4. I would recommend the same financial technologies to other individuals.					
5. I am also considering taking up other financial technologies available with NBE in the future.					

Thank you for your cooperation!!!