ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE

Department of Marketing Management

The Effect of Mobile Banking Service on Customer Engagement: The Mediating Role of Digital Financial Literacy in Case of Dashen Bank S.C.

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THESIS SUBMITTED TO THE DEPARTMENT OF MARKETING MANAGEMENT IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ART DEGREE IN MARKETING MANAGEMENT

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Declaration

I, Abenezer Bisrat Demeke, hereby declare that the thesis entitled " The Effect of Mobile Banking Service on Customer Engagement: The Mediating Role of Digital Financial Literacy in Case of Dashen Bank S.C." is based on my original work, except for quotations and citations, which have been duly acknowledged.

I further declare that this thesis has not been previously or currently submitted to Addis Ababa University or any other institution for any degree or academic qualification.

Abenezer Bisrat Demeke _____ _____

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This certificate certifies that the thesis entitled "The Effect of Mobile Banking Service on Customer Engagement: The Mediating Role of Digital Financial Literacy in Case of Dashen Bank S.C." was conducted by Abenezer Bisrat Demeke as partial fulfillment for the Master of Science Degree in Digital Marketing with a specialty in E-commerce at Addis Ababa University.

I confirm that this work is original and has not been submitted for any degree, either at AAU or any other university. With my approval, this thesis is now submitted for consideration.

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This is to certify that the thesis prepared by Abenezer Bisrat Demeke, entitled: " The Effect of Mobile Banking Service on Customer Engagement: The Mediating Role of Digital Financial Literacy in Case of Dashen Bank S.C.," and submitted in partial fulfillment of the requirements for the Degree of Master of Art in Digital Marketing with a specialty in E-commerce, complies with the regulations of the University and meets the accepted standards concerning originality and quality.

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External Examiner Signature _____ Date _____

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Abstract

This study investigates the mediating role of digital financial literacy in the relationship between mobile banking service—convenience, perceived usefulness, ease of use, and perceived value—and customer engagement at Dashen Bank S.C. The primary objective of the study was understanding how digital financial literacy influences customer engagement within the context of mobile banking services. Utilizing an Explanatory research design, the study employs an explanatory approach with customer engagement as the dependent variable, mobile banking service as the independent variable, and digital financial literacy as the mediating variable. Data were collected from 160 respondents using structured, close-ended questionnaires and analyzed using Structural Equation Modeling (SEM).

Key findings reveal that while convenience does not significantly impact customer engagement or digital financial literacy, perceived usefulness and perceived value positively influence both. Ease of use enhances customer engagement but does not significantly affect digital financial literacy. Digital financial literacy itself emerges as a strong predictor of customer engagement. These insights underscore the importance of digital financial literacy in enhancing customer engagement with mobile banking services.

This study contributes to theoretical literature by integrating technology acceptance models with customer engagement theory, providing a comprehensive framework for understanding these dynamics. Practically, it offers valuable guidance for financial institutions to improve customer engagement through targeted strategies that enhance digital financial literacy. The findings are expected to provide valuable insights into enhancing customer engagement through improved mobile banking services and digital financial literacy, ultimately contributing to better customer engagement.

Keywords: Mobile banking services, digital financial literacy, customer engagement, convenience, perceived usefulness, ease of use, perceived value, Structural Equation Modeling (SEM).

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Abbreviations and Acronyms

CE ——— Customer Engagement

CSEG ——— Customer Engagement

CONV ——— Convenience

DFL ——— Digital Financial Literacy

DOI ——— Diffusion of Innovation

EOU ——— Ease of Use

PEV ——— Perceived Value

PRU ——— Perceived Usefulness

SEM ——— Structural Equation Modeling

TAM ——— Technology Acceptance Model

UTAUT ——— Unified Theory of Acceptance and Use of Technology

Chapter One: Introduction

1.1. Background of the Study

In the rapidly evolving global financial sector, traditional banking practices are undergoing a significant transformation due to the integration of mobile banking. This shift reflects a global trend of increased digital interactions between consumers and financial institutions (Singh & Srivastava, 2020). Notably, this transformation is not limited to developed regions but is extending to Africa, where the adoption of digital financial solutions is on the rise.

Africa is witnessing a surge in digital innovation in the financial sector, driven by the increasing adoption of mobile technology among the population (Ruyter et al., 2018). In Ethiopia, navigating this digital transformation, the importance of mobile banking, and digital financial literacy in shaping consumer behaviors is recognized.

Within Ethiopia, the financial sector, including institutions like Dashen Bank S.C., is undergoing a paradigm shift as it adapts to the digital landscape. The substantial growth was unveiled in a snapshot of Ethiopia's Financial Sector Indicators as of March 2023, revealing 22 million mobile banking users, 4.8 million internet banking users, and 35 million debit card holders. The bank has around 4.6 million mobile banking subscribers, but only about 91 thousand are active users. The bank aims to lead in the digital domain, aligning with the industry's shift towards technology for providing convenient and accessible financial services, as stated in the Dashen Bank Annual Report, 2023.

Digital Financial Literacy encompasses various dimensions, including financial literacy, financial capability, and digital literacy (AFI, 2021). Financial capability refers to an individual's proficiency in financial knowledge, skills, and behaviors necessary for making informed and confident decisions about personal finances to enhance financial well-being (AFI, 2021). Digital literacy, on the other hand, pertains to the ability to independently comprehend and navigate digital content, as well as the competence to access and utilize digital products and services such as mobile phones, tablets, or the internet (AFI, 2021). Financial literacy, encompassing awareness, knowledge, skill, attitude, and behavior necessary for sound financial decisions (Nguyen & Doan, 2020; Loutfi & Murr, 2018), adds a critical dimension to this exploration as a subset of digital literacy this study will cover digital financial literacy.

Despite advancements in individual areas, there is a need for a comprehensive understanding of how these elements interact, especially considering the mediating role of digital financial literacy, within Dashen Bank S.C..

The mediation effect, a critical aspect of the study, refers to the intervening role of digital financial literacy in influencing the relationship between Mobile banking service, and customer engagement.

Customer engagement, characterized as a customer's positive brand-related cognitive, emotional, and behavioral activity (Al-Dmour, & Ali, 2019), is integral to this exploration. Furthermore, customer engagement influences customer trust, experience, satisfaction, and loyalty in mobile banking.

Against this backdrop, the study aims to thoroughly investigate the mediating effect of digital financial literacy on the relationship between Mobile banking service, and customer engagement within the specific context of Dashen Bank S.C. The research seeks to fill existing gaps by providing detailed insights into the variables and their interactions, offering tailored strategies to propel Dashen Bank towards its digital leadership aspirations in the financial sector.

1.2. Statement of the Problem

Several researchers have explored individual aspects, providing valuable insights into mobile banking's effect on customer engagement but falling short of a comprehensive examination of their interplay in influencing customer engagement.

Digital financial literacy, which encompasses the knowledge and skills required to use digital financial tools effectively and make informed financial decisions, plays a pivotal role in shaping customer engagement with mobile banking services. Studies indicate that higher levels of digital financial literacy can enhance the perceived value, ease of use, and overall utility of mobile banking services, thereby fostering greater customer engagement (Andreou & Anyfantaki, 2019); (Cahaya et al., 2023).

Research highlights that digital financial literacy significantly influences consumers' internet banking behavior and can mitigate the risks associated with digital transactions. For instance, Andreou and Anyfantaki (2019) found that higher financial literacy levels led to more frequent use of internet banking services, indicating that knowledgeable users are more likely to engage with digital financial tools (Andreou & Anyfantaki, 2019). Similarly, Cahaya, Riwayati, and Markonah (2023) demonstrated that financial literacy enhances customer engagement, which in turn builds trust and loyalty (Cahaya et al., 2023).

Golden and Cordie (2022) emphasize the role of digital financial literacy in the effective use of financial technology (fintech). They argue that improved digital financial literacy can significantly enhance customer engagement with fintech platforms by enabling users to make better financial decisions and utilize digital financial services more effectively (Golden & Cordie, 2022).

Additionally, Prasad, Meghwal, and Dayama (2018) highlight the importance of digital financial literacy in increasing awareness and understanding of the benefits of digital financial tools. Their study suggests that individuals with higher digital financial literacy are better equipped to recognize the value of digital financial services, leading to greater adoption and engagement (Prasad et al., 2018). Similarly, Rahim, Ali, and Adnan (2022) indicate that students with advanced digital skills frequently use digital financial services but often lack a comprehensive understanding of the associated risks, underscoring the need for enhanced education on digital financial literacy (Rahim et al., 2022).

In the digital age, mobile banking services have emerged as a crucial element of financial inclusion, offering unprecedented convenience and accessibility (Donner & Tellez, 2008; Shaikh & Karjaluoto, 2015). However, despite the rapid adoption of mobile banking, significant challenges remain in fully engaging customers. A critical factor influencing customer engagement is digital financial literacy, which encompasses the knowledge and skills necessary to use digital financial services effectively (Poushter, 2016; Pathak & Virani, 2021). While previous studies have examined the direct effects of mobile banking service—such as convenience, perceived usefulness, ease of use, and perceived value—on customer engagement (Venkatesh et al., 2012; Davis, 1989), there is a notable gap in understanding the mediating role of digital financial literacy in these relationships.

Furthermore, much of the existing research on mobile banking services and customer engagement has been conducted in developed countries, with limited attention given to developing countries such as Ethiopia (Donner & Tellez, 2008; Chuang & Hu, 2012). Studies specifically targeting Ethiopia's mobile banking services and customer engagement are limited. For example, a study on mobile banking in Ethiopia highlighted factors influencing the adoption of e-banking but did not extensively cover customer engagement or the broader impacts of mobile banking (Siraye, 2014). The unique socio-economic and technological contexts of developing regions can significantly influence the adoption and effectiveness of mobile banking services. For instance, research in South Africa, which shares some similarities with Ethiopia, shows the necessity of context-specific studies to understand the factors that drive digital financial literacy and customer engagement (Balabanoff, 2014). Context-specific studies are crucial for

developing countries like Ethiopia to address local challenges such as lower digital literacy, limited internet access, and distinct economic conditions. This need is echoed in studies from other developing regions, indicating a gap in localized research (Chetioui et al., 2023). Therefore, there is a pressing need for context-specific studies to understand the factors that drive digital financial literacy and customer engagement in these areas.

This study addresses these gaps by investigating the mediating role of digital financial literacy in the relationship between mobile banking service and customer engagement at Dashen Bank S.C. By providing insights into these dynamics, the research seeks to inform the development of more effective mobile banking strategies that enhance customer engagement through improved digital financial literacy.

1.3. Research Questions

This study aims to comprehensively investigate the intricate relationships between Mobile banking service, digital financial literacy, and customer engagement.

1. Does the use of Mobile banking service have a positive and significant impact on customer engagement?
2. Is there a positive and significant effect of mobile banking service on digital financial literacy?
3. Is there a positive and significant effect of digital financial literacy on customer engagement?
4. To what extent does digital financial literacy serve as a mediator in the relationship between Mobile banking service and customer engagement?

1.4. Research Objectives

In alignment with the general research question, the general objective of this study is to address the overarching research topic, aiming to unravel the intricate relationships between Mobile banking service, digital financial literacy, and customer engagement.

General Objective:

- To analyze the mediating role of digital financial literacy for mobile banking service on customer engagement.

Specific Research Objectives:

- To measure the effect of mobile banking service on customer engagement and determine the nature and significance of this relationship.
- To measure the effect of mobile banking service on digital financial literacy and determine the nature and significance of this relationship.
- To measure the influence of digital financial literacy on customer engagement and ascertain the strength and significance of this relation.
- To measure the mediating role of digital financial literacy in the relationship between Mobile banking service and customer engagement.

These objectives represent intellectual guesses about the relationships between variables and are subject to approval or rejection through empirical findings and statistical tests. They provide a structured framework for testing the proposed relationships.

1.5. Significance of the Study

1.5.1. Thematic Significance

This study significantly contributes to the academic literature by bridging gaps in understanding the relationship between mobile banking services, digital financial literacy, and customer engagement. By integrating concepts from technology acceptance models and customer engagement theory, it provides a comprehensive framework that explains how digital financial literacy mediates the effects of mobile banking attributes on customer engagement.

1.5.2. Practical Significance

This study provides valuable insights for financial institutions aiming to enhance customer engagement through mobile banking services. By identifying digital financial literacy as a crucial mediator, financial institutions can tailor their strategies to improve customer education and digital competency. This could involve developing user-friendly interfaces, offering educational programs, and providing resources that help customers navigate digital financial tools more effectively. Enhancing digital financial literacy can lead to higher customer satisfaction, loyalty, and long-term engagement, ultimately driving business growth.

1.5.3. Policy Significance

The findings of this study have significant implications for policymakers focused on financial inclusion and literacy. Understanding the critical role of digital financial literacy in customer engagement can inform policies and initiatives aimed at enhancing financial education. Governments, regulatory bodies, and policy makers can leverage these insights to design and implement educational programs that promote digital financial literacy, particularly among underserved populations. This can help bridge the digital divide, ensuring broader access to digital financial services and fostering inclusive economic growth.

1.6. Scope of the Study

Key concerns at the heart of the study revolve around unraveling the mediating role of digital financial literacy in the relationship between Mobile banking service and customer engagement.

Geographical Scope: The geographical scope deliberately confines itself to Ethiopia, specifically Addis Ababa, while the organizational context is meticulously circumscribed to Dashen Bank S.C.. The study purposefully refrains from embarking on a comprehensive analysis of all financial institutions, choosing instead to concentrate on the specific context selected for its unique characteristics.

Conceptual Scope: Thematically, the study will delve into several core areas:

- **Mobile Banking Attributes**: The research investigated the specific attributes of mobile banking services—convenience, perceived usefulness, ease of use, and perceived value—that are hypothesized to influence customer engagement.
- **Digital Financial Literacy**: The study assessed the level of digital financial literacy among users, including their knowledge, awareness, and experience with digital financial tools and services.
- **Customer Engagement**: The research will explore various dimensions of customer engagement, such as satisfaction, loyalty, frequency of use, and advocacy, to provide a holistic understanding of user interaction with mobile banking services.

Methodological Scope: The study employed a quantitative research methodology, utilizing surveys and questionnaires to collect data from a representative sample of mobile banking users. Structural Equation Modeling (SEM) using SmartPLS 4 will be used to analyze the data and test the hypothesized relationships.

Time Scope: The study covered a data that was collected at a particular point in time. This cross-sectional approach will provide a snapshot of the current state of digital financial literacy and customer engagement with mobile banking services. Thus, the study's time delimitation is year 2024. Depending on the findings, future research may consider a longitudinal approach to track changes and trends over time.

1.7. Limitation of the Study

While the scope of this study is comprehensive, it is important to acknowledge its limitations. The study intentionally stops at customer engagement as the primary output, recognizing its significant impact on other variables that may not be explicitly mentioned. The findings may be context-specific and may not be generalizable to all regions or populations. Furthermore, the study utilized only quantitative analysis. Additionally, the reliance on self-reported data may introduce biases related to respondents' perceptions and recall. Acknowledging the inherent limitations of the study paves the way for future researchers to explore the effects on other variables beyond the explicitly mentioned ones.

1.8. Definition of Terms

Customer Engagement: Customer engagement (CE) is defined as the intensity of an individual's participation in and connection with an organization's offerings or activities. It encompasses cognitive, emotional, and behavioral elements, contributing to the overall customer experience and relationship quality (Vivek, et al., 2012).

Mobile Banking Service: Mobile banking refers to the provision of banking services through mobile telecommunication devices. The primary advantage of mobile banking is the ability to perform these transactions anywhere and anytime, without the need to visit a physical bank branch (Illia et al., 2015).

Digital Financial Literacy: Digital financial literacy involves understanding digital financial products and services, the ability to use digital devices, and the knowledge to make informed financial decisions (Pathak and Virani, 2021).

Convenience: Convenience refers to the ability of users to conduct banking transactions anytime and anywhere, without the constraints of physical bank branches (Motwani, 2017).

Perceived Usefulness: Perceived usefulness is the degree to which users believe that using mobile banking will enhance their banking experience and efficiency (Mostafa, 2020).

Perceived Value: Perceived value encompasses the overall assessment of the benefits received from the mobile banking service compared to the costs involved. This includes both monetary and non-monetary benefits (Vinayagamoorthy & Sankar, 2012).

Ease of Use: Ease of use refers to how user-friendly and intuitive the mobile banking application is. It affects the user's ability to navigate the app and perform transactions efficiently without facing any difficulties (Jun & Palacios, 2016).

1.9. Organization of the Study

This study is organized into five chapters. The first chapter addresses the study's background, problem statement, objectives, scope, significance, and limitations. The second chapter reviews theoretical and empirical literature on the variables of the study. The third chapter covers the research design and methodology employed. The fourth chapter focuses on data analysis and discussion. Finally, the fifth chapter offers conclusions and recommendations.

Chapter Two: Review of Related Literature

2.1. Theoretical Review

The study is supported by relevant theories such as the technology acceptance model (TAM), Unified theory of acceptance and use of technology (UTAUT), Customer Engagement theory, self-determination theory, social cognitive theory and finally diffusion of innovation theory

2.1.1. Technology Acceptance Theory

The Technology Acceptance Model (TAM) is extensively utilized to comprehend and forecast users' acceptance of technology, including mobile banking services. This literature review examines TAM's application in mobile banking, focusing on its connection to customer engagement and the intermediary role of digital financial literacy.

Key components of TAM, perceived usefulness (PU) and perceived ease of use (PEOU), significantly affect users' intentions to use mobile banking services. Research indicates that these elements positively influence customer engagement by enhancing the perceived value and simplicity of banking services. For instance, Munir (2013) discovered that PU and PEOU substantially affect the intention to use mobile banking services in Makassar, emphasizing the importance of user-friendly and valuable mobile banking interfaces. Similarly, Alsamydai (2014) highlighted these factors as essential for encouraging engagement with mobile banking services in Jordan.

Customer satisfaction, another critical factor influenced by TAM, significantly impacts the intention to reuse mobile banking services. Zain and Christian (2023) demonstrated that PU and PEOU directly affect customer satisfaction, subsequently influencing the intention to continue using mobile banking services. This highlights the necessity of developing mobile banking applications that are both useful and easy to use to boost customer satisfaction and engagement.

Behavioral intention, shaped by PU and PEOU, is a robust predictor of actual mobile banking usage. Research suggests that higher perceived ease of use and usefulness lead to greater behavioral intention and subsequent actual use, thereby enhancing customer engagement. For example, Juliani et al. (2021) found that these TAM factors significantly predict the behavioral intention to use mobile banking, which in turn affects actual usage and customer engagement.

2.1.2. Unified Theory of Acceptance and Use of Technology

The Unified Theory of Acceptance and Use of Technology (UTAUT) provides a detailed framework for understanding the factors influencing the acceptance and use of technology, including mobile banking services. This literature review explores UTAUT's application in mobile banking and its relationship to customer engagement, emphasizing the mediating role of various factors.

Performance expectancy, which pertains to the perceived benefits users expect from mobile banking, is a crucial factor influencing their intention to adopt and use such services. Several studies have confirmed performance expectancy's significant impact on users' behavioral intentions to use mobile banking. For instance, Sarfaraz (2017) found that performance expectancy, effort expectancy, and risk perception significantly influence users' intentions to adopt mobile banking services. Similarly, Jadil, Rana, and Dwivedi (2021) identified performance expectancy as the strongest predictor of usage intention in mobile banking in their meta-analysis.

Effort expectancy, measuring the ease of use associated with mobile banking, is another vital predictor of adoption and continued use. The ease with which users can navigate and utilize mobile banking applications enhances their engagement. Varma (2018) showed that effort expectancy mediates the relationship between mobile banking intentions and use behavior among entrepreneurs in India. Additionally, AbuShanab and Pearson (2007) confirmed that effort expectancy, along with performance expectancy and social influence, significantly predicts customers' intention to adopt internet banking in Jordan.

Social influence, referring to the impact of peers, family, and social networks on users' technology adoption decisions, has shown mixed results in its effectiveness. While Sarfaraz (2017) found no significant relationship between social influence and the intention to adopt mobile banking services, Alalwan, Dwivedi, and Rana (2017) found that social influence significantly impacts behavioral intention in the context of mobile banking in Jordan. This suggests that social factors' influence may vary based on cultural and demographic context.

Behavioral intention, driven by factors such as performance expectancy, effort expectancy, and social influence, is a strong predictor of actual mobile banking usage. The UTAUT framework supports the relationship between behavioral intention and use behavior. Jadil et al. (2021) confirmed that usage intention is the most critical predictor of use behavior, emphasizing the importance of intention in converting potential use into actual use.

2.1.3. Customer Engagement Theory

Customer engagement theory highlights the significance of establishing a meaningful and interactive relationship between businesses and their customers to foster loyalty, satisfaction, and long-term commitment. In mobile banking services, understanding customer engagement is crucial for enhancing user experience and driving the adoption and usage of these services. This literature review explores the application of customer engagement theory to mobile banking and its relation to key factors influencing user behavior and satisfaction.

Several factors influence customer engagement in mobile banking, including service quality, perceived value, convenience, and trust. Sahoo and Pillai (2017) examined the role of the mobile banking service scape, defined as the environment and conditions of mobile banking services, on customer attitudes and engagement. They found that a well-designed service scape positively influences customer attitudes, thereby enhancing engagement with mobile banking services.

Service quality, a multidimensional concept, significantly impacts customer engagement. Arcand et al. (2017) identified several dimensions of Mobile Banking Service, including security/privacy, practicality, design/aesthetics, enjoyment, and sociality. They found that these dimensions influence the quality of the relationship between consumers and their financial institutions. Trust, driven by security and practicality, and satisfaction, influenced by enjoyment and sociality, are critical components of customer engagement. This study highlights the importance of balancing utilitarian and hedonic factors in mobile banking service design.

Customer engagement also directly impacts customer satisfaction and loyalty. Al-Dmour et al. (2019) explored the relationships between customer engagement, satisfaction, experience, trust, and loyalty in mobile banking. They found that engagement positively influences customer trust and experience, which in turn affects satisfaction and loyalty. The study emphasized the mediating role of trust in the relationship between engagement and satisfaction, indicating that engaged customers are more likely to develop trust and remain loyal to their financial institution.

Integrating customer engagement into mobile banking strategies can enhance the perceived value of these services. Komulainen and Saraniemi (2019) emphasized the importance of customer-centric approaches in mobile banking. Their findings suggest that understanding customer experiences and related values is crucial for developing mobile banking services that resonate with users and foster long-term engagement.

User engagement in value co-creation has also been explored in the context of mobile banking apps. Ashraf and Himel (1975) investigated the relationship between user engagement, value co-creation, and behavioral intentions. They found that engaged users are more likely to co-create value with mobile banking apps, leading to increased behavioral intentions to use these services regularly. This study highlights the importance of interactive and engaging mobile banking platforms for fostering user engagement and value co-creation.

2.1.4. Diffusion of Innovation Theory

The Diffusion of Innovation (DOI) Theory, developed by Everett Rogers, explains how, why, and at what rate new ideas and technology spread through cultures. It identifies five key attributes influencing innovation adoption: relative advantage, compatibility, complexity, trialability, and observability. This literature review examines DOI theory's application to the adoption and engagement of mobile banking services, focusing on the factors driving customer engagement.

Relative advantage refers to the perceived superiority of an innovation over its predecessor. In mobile banking, studies have shown that perceived relative advantage significantly influences customers' attitudes toward adopting these services. Lin (2011) found that relative advantage, ease of use, and compatibility strongly predict behavioral intentions to adopt or continue using mobile banking services. Similarly, Dash (2013) highlighted that relative advantage positively impacts the intention to adopt mobile banking in India, emphasizing the importance of demonstrating mobile banking's superior benefits over traditional methods.

Compatibility, the degree to which an innovation aligns with existing values, past experiences, and needs of potential adopters, plays a crucial role in mobile banking adoption. Kapoor, Dwivedi, and Williams (2013) demonstrated that compatibility significantly influences both behavioral intention and actual adoption of interbank mobile payment services in India, suggesting that mobile banking services that align well with users' existing lifestyles and technological habits are more likely to be adopted.

Complexity, the perceived difficulty of understanding and using the innovation, has been identified as a barrier to mobile banking adoption. Dash et al. (2014) found that complexity negatively affects customers' attitudes towards mobile banking adoption in India, highlighting the need for user-friendly and intuitive mobile banking services to minimize perceived complexity and enhance adoption rates.

Trialability refers to the degree to which an innovation can be experimented with on a limited basis. The ability to try mobile banking services without significant commitment can reduce perceived risks and

enhance adoption. Laukkanen (2016) indicated that trialability positively influences consumer attitudes towards mobile banking, as it allows potential users to experience the benefits and ease of use firsthand before making a full commitment.

Observability, the extent to which the results of an innovation are visible to others, can significantly enhance the adoption rate when the benefits of mobile banking are observable. Positive experiences shared by users through social networks can influence others to adopt mobile banking services. Studies have shown that observability plays a role in adoption decisions, although its impact may vary depending on context and user demographics.

2.2. Conceptual Review

2.2.1. Customer Engagement

Customer engagement (CE) is a critical concept in modern marketing that focuses on the interactive and relational aspects of customer behavior towards a brand or firm. It encompasses cognitive, emotional, and behavioral elements, contributing significantly to the overall customer experience and relationship quality. CE is defined as the intensity of an individual's participation in and connection with an organization's offerings or activities (Vivek, Beatty, & Morgan, 2012). This multi-dimensional construct involves customers' cognitive, emotional, and social connections with a brand, leading to increased loyalty and advocacy.

Pansari and Kumar (2016) developed a comprehensive framework for understanding CE, arguing that engagement arises from satisfying and emotionally connected relationships. They propose that both direct (e.g., purchases) and indirect (e.g., word-of-mouth) contributions are crucial components of CE. Their framework also highlights the moderating roles of factors such as convenience, industry type, and brand value on the relationship between customer satisfaction and engagement.

The antecedents of CE include satisfaction, trust, emotional connection, and perceived value. For instance, So et al. (2016) found that customer engagement enhances service brand evaluation, trust, and loyalty, demonstrating that engagement fosters deeper relational bonds beyond mere transactions. Hollebeek (2011) also emphasizes that engagement involves a customer's cognitive, emotional, and behavioral investment in brand interactions, leading to greater loyalty and advocacy.

In the context of mobile banking, CE can significantly impact user adoption and satisfaction. Gummerus et al. (2012) studied the effect of customer engagement behaviors in a Facebook brand community,

identifying social, entertainment, and economic benefits as critical factors influencing user satisfaction and loyalty. Their findings suggest that fostering community engagement can enhance the overall customer experience and loyalty in digital platforms.

Bowden (2009) proposed a conceptual framework for segmenting customer-brand relationships based on the extent of customer engagement. This approach provides a deeper understanding of how different levels of customer engagement affect loyalty and retention, suggesting that highly engaged customers are more likely to exhibit loyal behaviors and contribute positively to brand equity.

2.2.2. Mobile Banking Service

Mobile banking refers to the provision of banking services through mobile telecommunication devices, allowing users to perform transactions anytime and anywhere. This includes checking account balances, transferring funds, paying bills, and depositing checks remotely. The primary advantage of mobile banking is its convenience, enabling customers to manage their finances without visiting a physical bank branch (Illia et al., 2015).

Initially conducted via SMS, mobile banking now predominantly utilizes mobile internet and specialized apps developed by financial institutions. These apps are designed to be user-friendly, providing an intuitive interface that simplifies banking operations for users of all ages and technical proficiencies (Vinayagamoorthy & Sankar, 2012).

Mobile banking significantly reduces transaction handling costs for banks and customers, enhancing satisfaction by offering 24/7 access to banking services (Motwani, 2017). However, security remains a critical concern. Financial institutions employ various security measures, such as encryption, multi-factor authentication, and biometric verification, to protect users' data. Despite these measures, ongoing improvements in security protocols and user education on safe practices are necessary to address security concerns (Al-Akhras et al., 2011).

Mobile banking can play a transformative role in developing countries by providing access to financial services for the unbanked and underbanked populations, promoting financial inclusion and enabling economic activities that were previously out of reach (Gaur & Potnis, 2021).

The Technology Acceptance Model (TAM) and its extensions highlight factors influencing mobile banking adoption, including perceived ease of use, perceived usefulness, trust, and security. These factors

significantly affect users' intentions to adopt and continue using mobile banking services (Kwateng et al., 2019).

Table 1: Mobile Banking Service Conceptualization

Period	***Conceptualization***	***Key Developments***	***References***
Early 2000s	Initial concept of mobile banking primarily through SMS	Basic functions such as balance inquiry and transaction alerts via SMS	Motwani, 2017
Mid 2000s	Introduction of mobile internet-based banking	Enhanced features including fund transfers and bill payments via mobile web browsers	Vinayagamoorthy & Sankar, 2012
Late 2000s	Development of mobile banking apps	Dedicated apps for smartphones offering comprehensive banking services such as check deposits and loan applications	Illia et al., 2015
Early 2010s	Focus on user experience and security	Implementation of multi-factor authentication, biometric verification, and user-friendly interfaces	Al-Akhras et al., 2011
Mid 2010s	Integration with financial ecosystems	Mobile banking apps integrating with other financial services like investment platforms and payment gateways	Gaur & Potnis, 2021
Late 2010s	Personalization and AI integration	Use of AI for personalized financial advice, automated customer service, and predictive analytics	Kwateng et al., 2019
Early 2020s	Focus on financial inclusion	Leveraging mobile banking to provide financial services to unbanked and underbanked populations in developing countries	Gaur & Potnis, 2021

2.2.2.1. Dimensions of Mobile Banking Service

Mobile Banking Service is multidimensional and can be broken down into several key dimensions that influence user adoption, satisfaction, and continued usage. Several researchers used different dimensions to measure mobile banking service including security/privacy, ease of use, system quality, service quality, usefulness, enjoyment, and others.

Table 2: Mobile Banking Service Dimensions

Research Papers	***Dimensions Used to Measure Mobile Banking Service***
Shankar et al., 2020	Privacy and security, customer support, interactivity, efficiency, content
Mallikarjuna & Murali, 2011	E-S-QUAL dimensions (efficiency, system availability, fulfillment, privacy)
Leem & Eum, 2021	Practicality, enjoyment, app design and aesthetics
Jun & Palacios, 2016	Content, accuracy, ease of use, speed, aesthetics, security, diverse mobile application service features, mobile convenience, reliability, responsiveness, competence, courtesy, credibility, access, communication, understanding the customer, continuous improvement
Yu & Fang, 2009	Usefulness, ease of use, compatibility, risk, cost, social influence
Arcand et al., 2017	Security/privacy, practicality, design/aesthetics, enjoyment, sociality
Mostafa, 2020	Ease of use, usefulness, security/privacy, enjoyment
Zhou et al., 2021	Interface design, system quality, security assurance, service quality
Rahmawati & Fianto, 2020	Reliability, responsiveness, assurance, empathy, tangibles
Owuamanam et al., 2022	App design, fulfillment, security
Alsamydai, 2014	Quality of information, quality of service, quality of system, perceived ease of use, perceived usefulness, attitudes, behavioral intention, use
de Leon et al., 2020	SSTQUAL dimensions (functionality, information accuracy, reliability, security, usability, personalization, and responsiveness)
Pratama et al., 2021	Application aspect, complaint handling aspect, economic benefit aspect
Pakurár et al., 2019	Tangibles, responsiveness, empathy, assurance, reliability, access, financial aspect, employee competences

Based on previous studies, the following dimensions were used in this study: convenience, ease of use, perceived value and perceived usefulness. The variables Convenience, Ease of Use, Perceived Value, and Perceived Usefulness were selected because they are critical determinants of mobile banking service. Convenience and ease of use are fundamental to how easily a product fits into a user's life, while perceived value and usefulness directly impact a user's assessment of the product's worth and functionality. These factors are supported by extensive research and are central to understanding user behavior. Other variables were excluded as they either overlap with the selected variables or are secondary in the context of the study.

Convenience: Convenience refers to the ability to conduct banking transactions anytime and anywhere, saving time and effort for users. It significantly influences users' intentions to adopt mobile banking (Motwani, 2017; Gu, Lee, & Suh, 2009).

Usefulness: Perceived usefulness is the degree to which users believe that mobile banking enhances their banking experience and efficiency. It is a critical determinant of technology adoption, enhancing customer satisfaction and encouraging adoption (Mostafa, 2020; Rao & Raju, 2015; Albashrawi & Motiwalla, 2019).

Perceived Value: Perceived value encompasses the overall assessment of benefits received from the mobile banking service compared to the costs involved. High perceived value leads to greater customer satisfaction and loyalty (Vinayagamoorthy & Sankar, 2012; Xiong, 2013; Karjaluoto et al., 2019).

Ease of Use: Ease of use refers to how user-friendly the mobile banking application is. A user-friendly app reduces the effort required to complete tasks, enhancing user satisfaction and encouraging continued use (Jun & Palacios, 2016; Gu, Lee, & Suh, 2009; Widanengsih, 2021; Albashrawi & Motiwalla, 2019).

2.2.3. Digital Financial Literacy

Digital financial literacy is an essential component for effective engagement with mobile banking services. It encompasses the knowledge and skills needed to make informed financial decisions using digital platforms. This conceptual review examines the current state of digital financial literacy, its impact on mobile banking adoption, and its broader implications for financial inclusion and user engagement.

Digital financial literacy involves understanding digital financial products and services, the ability to use digital devices, and the knowledge to make informed financial decisions. Pathak and Virani (2021) highlight the importance of technology-enabled financial information in spreading financial literacy efficiently.

A study by Prasad, Meghwal, and Dayama (2018) highlights the transition from traditional financial literacy to digital financial literacy. They found that awareness and usage of digital platforms like internet banking, debit cards, and mobile banking are increasing, driven by government initiatives. However, there remains a significant gap in digital financial literacy among the general population, necessitating further education and awareness campaigns.

Andreou and Anyfantaki (2019) examine the interplay between financial literacy and internet banking behavior. Their findings indicate that higher financial literacy levels correlate with increased usage of internet banking services. This relationship stresses the importance of combining digital and financial education to enhance user engagement with digital financial services.

The influence of digital financial literacy extends beyond just the adoption of mobile banking services. Golden and Cordie (2022) argue that digital financial literacy is as crucial as traditional literacy skills in today's digital economy. They emphasize the role of fintech in providing educational opportunities to improve digital financial literacy among adults, which can prepare them for better engagement with financial technologies.

Moreover, a study by Zhang (2021) on the design of a mobile app to promote digital financial literacy among young people highlights the importance of engaging content and digital nudges. The app's design focuses on educating users about digital financial services, potential risks, and strategies for making informed decisions. This approach aims to enhance user engagement and reduce cognitive load, making financial education more accessible and effective.

The intersection of digital financial literacy and financial inclusion is evident in various global contexts. For instance, Sobolieva-Tereshchenko and Zharnikova (2022) discuss the development of digital financial literacy, emphasizing the need for national strategies to improve financial literacy and inclusion. They argue that increasing mobile and internet penetration, along with innovative banking practices, can significantly enhance digital financial literacy and inclusion.

2.2.3.1. Dimensions of Digital Financial Literacy

Awareness of digital financial products and services is a foundational dimension of digital financial literacy. It involves understanding the various digital tools and platforms available for financial transactions, such as mobile banking apps, online payment systems, and digital wallets. Prasad, Meghwal, and Dayama (2018) emphasized that increasing awareness of digital platforms significantly influences the frequency of their use, which is crucial for integrating digital financial services into daily life.

Understanding digital financial risks is another critical dimension. This includes recognizing potential threats such as digital fraud, data breaches, and cyber-attacks. Rahim, Ali, and Adnan (2022) found that while students in Malaysia were adept at completing online financial transactions, they often lacked knowledge about the associated risks, highlighting the need for education on digital financial risks.

Effective management of digital financial transactions involves the ability to use digital tools for budgeting, saving, investing, and making payments. Tony and Desai (2020) discussed the impact of digital financial literacy on financial inclusion, noting that individuals who are proficient in managing digital financial transactions are better equipped to participate in the digital economy.

Knowledge of consumer rights and protection in the digital financial landscape is essential for ensuring that individuals can safeguard their interests. This includes understanding the rights related to digital transactions, dispute resolution mechanisms, and the legal protections available to consumers. Prykaziuk and Khodakivska (2023) emphasized the importance of educating users about their rights and the steps they can take to protect themselves from digital financial crimes.

The practical implications of digital financial literacy extend to various aspects of personal and economic well-being. Golden and Cordie (2022) highlighted the importance of integrating digital financial literacy into adult education programs to ensure that individuals can navigate the digital financial landscape effectively. Additionally, Gosal and Nainggolan (2023) found that SMEs with higher digital financial literacy levels were better able to manage their finances and improve their financial performance, underscoring the broader economic benefits of enhancing digital financial literacy.

For this study the knowledge, experience and awareness dimensions has been employed. The knowledge dimension of digital financial literacy involves understanding digital financial concepts, tools, and services. It includes familiarity with online banking, digital wallets, mobile payments, and the functionalities of these tools. Knowledge also extends to understanding financial principles, such as budgeting, saving, investing, and the risks associated with digital financial transactions.

Prasad, Meghwal, and Dayama (2018) emphasize that digital financial literacy involves not just basic financial knowledge but also the specific knowledge needed to navigate digital platforms. They highlight the importance of education in enhancing this knowledge, which can lead to more informed and effective use of digital financial services. Additionally, Tony and Desai (2020) found that a strong knowledge base in digital financial literacy is essential for effective financial inclusion, as it empowers individuals to utilize digital financial tools confidently and competently.

Awareness in digital financial literacy refers to the recognition and understanding of the availability and benefits of digital financial services. It encompasses being informed about the latest digital financial products, services, and technological advancements, as well as understanding the potential risks and how to mitigate them.

Rahim, Ali, and Adnan (2022) underscore the importance of awareness in promoting the use of digital financial services. Their study reveals that although students are proficient in using digital financial tools, there is a significant gap in their awareness of the associated risks. Enhancing awareness through targeted educational initiatives is crucial for bridging this gap. Furthermore, awareness campaigns can drive the adoption of digital financial services by highlighting their benefits and educating users on safe practices.

Experience is a practical dimension of digital financial literacy, involving the hands-on use of digital financial tools and services. It includes the ability to perform online transactions, manage digital financial accounts, and use digital tools effectively for financial planning and decision-making.

The study by Zhang (2021) highlights the significance of practical experience in enhancing digital financial literacy among young people. By engaging users in interactive and practical learning experiences, digital financial education can improve their competency and confidence in using digital financial tools. Similarly, Andreou and Anyfantaki (2019) found that individuals with more experience in using digital financial services tend to have higher levels of digital financial literacy, as practical engagement reinforces knowledge and awareness.

2.3. Empirical Literature Review

2.3.1. Convenience in Mobile Banking and its Impact on Customer Engagement

Zhao and Rojniruttikul (2023) found that convenience is a key factor influencing customer engagement with the company. This means customers are more likely to buy and engage with the brand if the process is efficient and hassle-free. Roy et al. (2018) found that service convenience positively affects different forms of customer engagement behaviors such as word-of-mouth, customer helping the company, and customer helping other customers. This study highlights that when customers find mobile banking services convenient, they are more likely to engage positively with the bank, promoting the service and assisting both the bank and other customers.

2.3.2. Usefulness in Mobile Banking and Its Impact on Customer Engagement

Sahoo & Pillai (2017) conducted a study that demonstrates how the mobile banking service scape influences customer attitudes and engagement. Their research utilized the stimulus-organism-response framework, where the usefulness of mobile banking services significantly predicted customer attitudes, which in turn affected customer engagement. The study found that customers who perceived mobile banking as useful were more likely to develop positive attitudes towards it, leading to higher engagement levels. Jeong & Yoon (2013) examined factors influencing the adoption of mobile banking using an

extended Technology Acceptance Model (TAM). The study found that perceived usefulness was the most influential factor explaining the adoption intention. Customers who found mobile banking services useful were more likely to adopt and engage with them. Arcand et al. (2017) also investigated the dimensions of Mobile Banking Service and their impact on customer relationships. Trust and commitment, driven by the perceived usefulness of the service, were crucial for fostering long-term customer engagement. Koo & Wati (2010) provided evidence from their empirical study in Indonesia, showing that trust mediated the effects of perceived usefulness on end-user satisfaction and engagement. They found that perceived usefulness directly affected user satisfaction, which then influenced their engagement with mobile banking services.

2.3.3. Ease of Use in Mobile Banking and Its Impact on Customer Engagement

Sahoo & Pillai (2017) conducted a study to examine the influence of mobile banking service scape on customer attitudes and engagement. The results indicated that ease of use is a significant predictor of positive customer attitudes towards mobile banking. These positive attitudes subsequently lead to higher levels of customer engagement. Mostafa (2020) investigated the potential effects of Mobile Banking Service dimensions, including ease of use, on customer engagement. The findings confirmed that ease of use significantly impacts customer attitudes towards mobile banking. Kamboj et al. (2021) observed the association between mobile banking failures, user satisfaction, and customer engagement. The study proposed a Mobile Banking Failure Model (MBFM) and found that ease of use is a crucial factor affecting user satisfaction, which in turn influences customer engagement.

2.3.4. Perceived Value in Mobile Banking and Its Impact on Customer Engagement

Sahoo & Pillai (2017) examined the influence of the mobile banking service scape on customer attitude and engagement. The study found that perceived value plays a crucial role in shaping customer attitudes, which in turn drive customer engagement. Mutahar et al. (2021) explored the determinants of mobile banking usage intention among Yemeni bank clients, highlighting the importance of perceived value. The study found that perceived value significantly predicts the intention to use mobile banking services.

2.3.5. Convenience in Mobile Banking and its Impact on Digital Financial Literacy

Yuneline & Rosanti (2023) conducted a study examining the role of digital finance, financial literacy, and lifestyle on students' financial behavior. They found that while the use of digital finance provided transaction convenience, it did not necessarily translate to better financial behavior without proper financial literacy. This suggests that convenience alone is insufficient to improve financial outcomes; it

must be paired with adequate digital financial literacy to ensure users can make informed financial decisions. Rahim et al. (2022) assessed students' financial literacy levels using a digital financial literacy perspective. Their study highlighted that despite the convenience of completing online financial transactions, students lacked digital financial knowledge and an understanding of the associated risks.

2.3.6. Usefulness in Mobile Banking and its Impact on Digital Financial Literacy

Prasad, Meghwal, and Dayama (2018) highlight the importance of digital financial literacy in increasing awareness and understanding of digital financial tools. Their study suggests that individuals with higher digital financial literacy are better equipped to recognize the benefits and usefulness of digital financial services. Similarly, Yuneline and Rosanti (2023) emphasize that digital financial literacy significantly influences financial behavior and decision-making. Their research shows that individuals with higher digital financial literacy are more likely to perceive digital financial services as useful.

2.3.7. Ease of Use in Mobile Banking and Its Impact on Digital Financial Literacy

A study by Susanti and Susanti (2021) found that while ease of use positively influences the adoption of e-money, financial literacy did not have a significant impact on its use. This suggests that users might rely on the simplicity of the technology rather than understanding its financial implications. Moreover, Prazadhea and Fitriyah (2023) examined students and found that those with higher financial literacy levels were less likely to use this digital financial service.

2.3.8. Perceived Value in Mobile Banking and Its Impact on Digital Financial Literacy

Prasad, Meghwal, and Dayama (2018) emphasize the role of digital financial literacy in enhancing awareness and understanding of the benefits of digital financial tools. The study suggests that individuals with higher digital financial literacy are more capable of perceiving the value of digital financial services, which leads to greater adoption and engagement.

2.3.9. Digital Financial Literacy and Its Impact on Customer Engagement

Cahaya, Riwayati, and Markonah (2023) explored the mediating role of customer trust in the relationship between financial literacy and customer loyalty. Their findings suggest that financial literacy positively influences customer engagement, which in turn enhances customer trust and loyalty. Golden and Cordie (2022) emphasize the role of digital financial literacy in the effective use of financial technology (fintech) for adult learners in the United States. They argue that improving digital financial literacy can significantly enhance customer engagement with fintech platforms by enabling users to make better financial decisions and utilize digital financial services more effectively. Astuti and Trinugroho (2016)

investigated the impact of financial literacy on banking engagement in Indonesia. Their study found that higher financial literacy levels correlate with increased engagement with formal financial institutions.

2.4. Literature Gap

Despite the extensive research on mobile banking services, digital financial literacy, and customer engagement, several gaps remain unaddressed in the current literature. These gaps highlight areas where further investigation is necessary to enhance our understanding of the dynamics among these variables.

Most existing studies focus on the direct effects of mobile banking service (convenience, perceived usefulness, ease of use, and perceived value) on customer engagement and satisfaction (Venkatesh et al., 2012; Davis, 1989). However, there is limited research exploring the mediating role of digital financial literacy in these relationships. Understanding how digital financial literacy influences customer engagement can provide deeper insights into enhancing user experience and retention in mobile banking (Poushter, 2016).

While customer engagement has been studied in various contexts (Brodie et al., 2011; Vivek, Beatty, & Morgan, 2012), there is a lack of comprehensive frameworks that integrate technology acceptance models with customer engagement theories. Existing studies often examine these concepts in isolation, leading to fragmented insights. A holistic approach that considers both the technological and relational aspects of customer engagement in mobile banking can offer more robust strategies for financial institutions (Kumar & Pansari, 2016).

Most research on mobile banking services and digital financial literacy is conducted in developed countries, with limited studies focusing on developing countries like Ethiopia (Donner & Tellez, 2008; Chuang & Hu, 2012). The unique socio-economic and technological contexts of developing countries can significantly impact the adoption and effectiveness of mobile banking services. Therefore, context-specific studies are needed to understand the factors influencing digital financial literacy and customer engagement in these regions (Gautam & Singh, 2021).

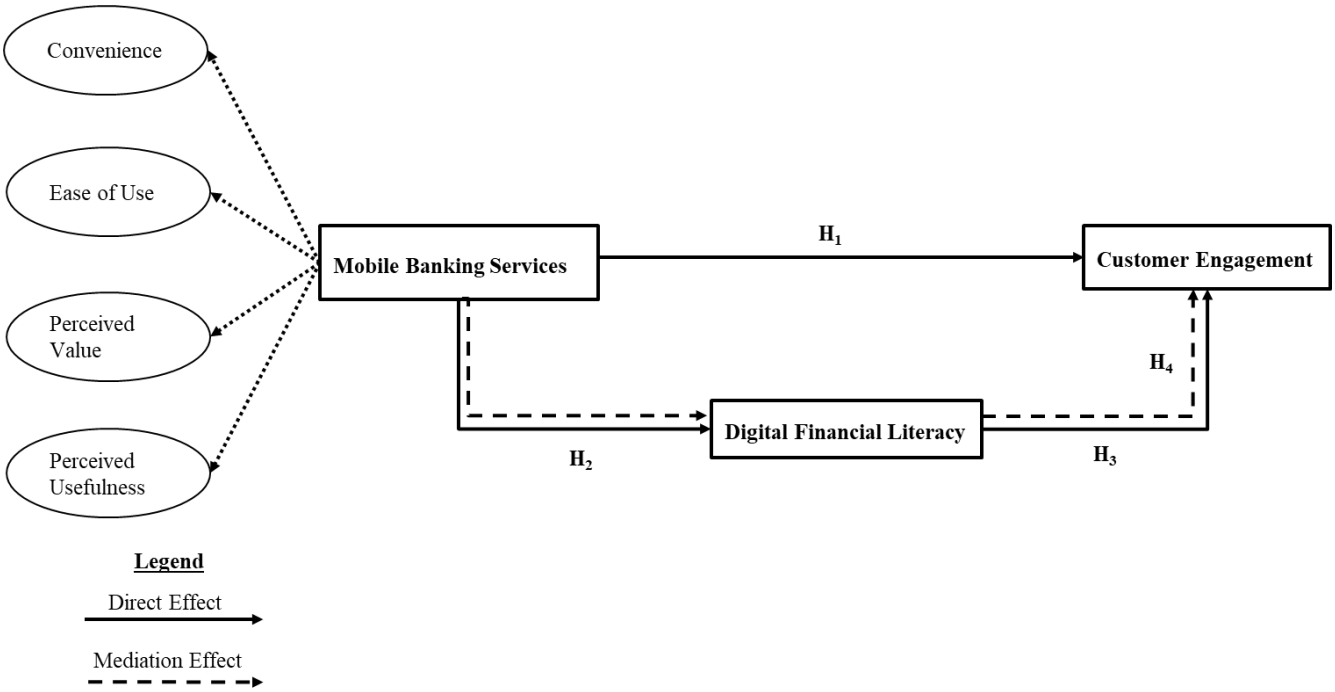
So, this study will therefore be motivated to fill the theoretical gap on the effect of mobile banking service on customer engagement through the mediation effect of digital financial literacy.

2.5. Conceptual Framework

The conceptual framework for the research was crafted through a thorough examination of existing literature and theories. This comprehensive approach aimed to integrate the collective knowledge

accumulated in previous research to inform the exploration of the relationships between mobile banking, digital financial literacy, and customer engagement.

Figure 1: Conceptual framework of mobile banking, digital financial literacy, and customer engagement



Source: Jun & Palacios, 2016, Prasad, Meghwal, and Dayama (2018), and modified by the researcher.

Mobile banking services represent the technological infrastructure that banks provide, allowing customers to conduct financial transactions via mobile devices. These services include functionalities such as account management, fund transfers, bill payments, and customer service. From a relational perspective, it's crucial that these services are user-friendly, reliable, and aligned with customer needs. When mobile banking services are designed with the customer in mind, they can foster trust and satisfaction, which are key components of strong customer relationships.

Digital financial literacy encompasses the knowledge and skills required for customers to effectively use digital financial tools. This includes understanding how to navigate mobile banking applications, being aware of online financial security practices, and being able to manage personal finances digitally. Technologically, higher digital literacy enables customers to maximize the benefits of mobile banking services. Relationally, banks can strengthen their relationships with customers by educating them, thus enhancing their confidence in using mobile banking services and making them feel more empowered and connected to their financial institution.

Customer engagement in mobile banking is facilitated through interactions with the bank's digital platform. Technologically, the more intuitive and responsive the mobile banking services, the higher the customer engagement. Relationally, customer engagement also involves emotional and psychological connections. High-quality digital interactions, personalized services, and proactive communication are essential in strengthening customer loyalty and satisfaction. When customers feel valued and understood through their digital interactions, their engagement with the bank deepens.

The framework shows the interplay between technological and relational aspects in encouraging customer engagement. By enhancing mobile banking services technologically and building strong relational ties through education and personalized interaction, banks can create a more engaged and loyal customer base. This holistic approach ensures that financial institutions can leverage both the technological capabilities of mobile banking and the relational aspects of customer service to deliver a superior banking experience, as suggested by Kumar & Pansari (2016).

2.6. Research Hypothesis

H_1: Mobile banking service have a positive significant effect on customer engagement.

H_{1a}: Convenience has a positive significant effect on customer engagement.

H_{1b}: Ease of use has a positive significant effect on customer engagement.

H_{1c}: Perceived value has a positive significant effect on customer engagement.

H_{1d}: Perceived usefulness has a positive significant effect on customer engagement.

H_2: Mobile Banking Service have a positive significant effect on Digital Financial Literacy.

H_{2a}: Convenience has a positive significant effect on Digital Financial Literacy.

H_{2b}: Ease of use has a positive significant effect on Digital Financial Literacy.

H_{2c}: Perceived value has a positive significant effect on Digital Financial Literacy.

H_{2d}: Perceived usefulness has a positive significant effect on Digital Financial Literacy.

H_3: Digital financial literacy has a positive significant effect on customer engagement.

H_4: Digital financial literacy serves as a mediator in the relationship between Mobile banking service and customer engagement.

Chapter Three: Research Design and Methodology

The methodology section outlines the study's design, the population under study, sampling methods, data collection techniques, data analysis, and result presentation. It details the steps taken in conducting the research, providing a comprehensive overview of the study's approach.

3.1. Research Approach and Method

The study adopts deductive approach, with the dependent variable being customer engagement, the independent variable being mobile banking service, and digital financial literacy acting as the mediation variable. It utilizes a deductive approach, beginning with well-defined hypotheses and employing statistical techniques such as PLS-SEM to examine these hypotheses. This methodology enables systematic and quantifiable data analysis. SmartPLS 4 was chosen for this research due to its heftiness in handling complex models and small sample sizes, making it particularly suitable for exploratory research and theory development. Unlike covariance-based structural equation modeling (CB-SEM) tools, which require larger sample sizes and assume normally distributed data, it is a variance-based SEM technique that is less stringent regarding data distribution and sample size requirements. Additionally, it allows for the simultaneous analysis of reflective and formative measurement models, providing greater flexibility in model specification. Furthermore, it includes advanced features such as bootstrapping and blindfolding (Predictive Relevance) for assessing the reliability and validity of the constructs and for conducting mediation analysis, which are central to this study's objectives.

3.2. Research Design

The study employs an explanatory research design to thoroughly investigate the connections among mobile banking service, digital financial literacy, and customer engagement. It offers a comprehensive analysis of customer engagement patterns, the influence of mobile banking service, and the mediating role of digital financial literacy.

3.3. Population and Sampling

The total population for this study encompasses all customers of Dashen Bank S.C., numbering 6.2 million individuals. However, the study's scope is confined to a specific geographical location—Addis Ababa. Thus, the adjusted population for consideration in this study is individuals in Addis Ababa representing Dashen Bank customers.

The unit of analysis for this research is the individual customer within the defined population. Each customer account serves as a distinct unit, allowing for a granular examination of their engagement with Mobile banking service, level of digital financial literacy, and overall customer engagement.

3.3.1. Sample Size Determination

The sample size (n) will be determined using the formula:

$$n = \left[\frac{P(1-P)}{\frac{\frac{A^2}{Z^2} + \frac{p(1-P)}{N}}{R}} \right]$$

Where:

- *P* is the estimated variance in the population (e.g., 0.5 for a 50-50 split).
- *A* is the desired precision as a decimal (e.g., 0.03 for 3%).
- *N* is the number of people in the population.
- *Z* is the confidence level (e.g., 1.96 for 95% confidence).
- *R* is the estimated response rate.

$$n = \left[\frac{0.3(1-0.3)}{\frac{\frac{0.05^2}{1.96^2} + \frac{0.3(1-0.3)}{2{,}129{,}086}}{0.75}} \right] \Rightarrow n = \left[\frac{0.21}{\frac{\frac{0.0025}{3.8416} + \frac{0.21}{2{,}129{,}086}}{0.75}} \right] \Rightarrow n = \left[\frac{0.21}{\frac{0.00065077 + 0.000000098634}{0.75}} \right]$$

$$n = \left[\frac{0.21}{0.0008678248453} \right]$$

$$n = 241.9843142$$

$$n \approx 242$$

A sample size of 242 ensures a high level of precision and adequate statistical power for detecting significant effects or differences. This size is sufficient to achieve reliable estimates and maintain the integrity of the study results (Williams & Williams, 2020). While theoretically larger samples may offer more precision, practical constraints such as time, cost, and participant availability often necessitate a balance between ideal sample size and feasible sample size. A sample size of 242 is often a practical compromise that still provides robust statistical power without overextending resources (Vozzi et al., 2021). Even with a large population size, a sample size of 242 can adequately represent the population

and provide reliable estimates of the population parameters. For many studies, this sample size ensures that the sample's characteristics closely match those of the population (Bujang et al., 2018).

3.3.2. Sampling Technique

This research employs a simple random sampling technique to select a representative sample from the customer population of Dashen Bank S.C. within Addis Ababa. The selection process is entirely random, ensuring that each customer of the Bank has an equal chance of being included in the sample.

3.3.3. Sampling Procedures

1. Defining the Population: The first step involves clearly defining the population under consideration. In this study, the population consists of customers of Dashen Bank S.C. within Addis Ababa.

2. Random Selection: A subset of individuals ad branches has been randomly selected from the sampling frame. This process ensures that each member of the population has an equal chance of being included in the sample.

3. Sample Size Determination: The desired sample size for this study is determined to be 242. This sample size provides an optimal balance between statistical precision and practical feasibility.

4. Contacting and Obtaining Consent: Once the sample is selected, their consent to participate in the study will be sought. Clear and transparent communication about the research objectives, procedures, and the voluntary nature of participation will be provided.

3.4. Source of Data

The research utilized both primary and secondary data sources. Primary data, generated by the researcher for the study's specific objectives, have been gathered through structured questionnaires from respondents. Secondary data, collected for purposes other than the current research, has been obtained from journals, company reports, and other relevant sources deemed necessary for the study.

Table 3: Scale Selection for the questionnaire

Variable	***Question***	***Source***
Convenience	The usage of mobile banking service enables to get banking service quickly	(Kabir, M. R., 2013)
	Mobile banking is faster than traditional banking	
	I can access mobile banking services at any time.	(Adhimursandi, D., Suharno, S.,
	The mobile banking platform is an excellent source of information.	
	It's simple to use a mobile banking platform	

Variable	*Question*	*Source*
	It's simple to use the mobile banking platform to access banking services	& Kuleh, Y., 2021)
	The transaction on the mobile banking platform is simple for me to complete	
Ease of Use	Learning to use mobile banking would be easy	(Kabir, M. R., 2013)
	Interaction with mobile banking does not require a lot of mental effort.	
	it is easy to use mobile banking to accomplish banking tasks	
	The usage of mobile banking is easier than the traditional banking.	
	The mobile banking access cost is expensive to use.	
	It takes much time to learn about the use of mobile banking	
Perceived Value	To what extent is online banking reliable as a system of banking service provision?	(Bitkina, O. V., Park, J., & Kim, H. K., 2022)
	banking fulfills the commitments that it assumes.	
	To what extent is offline (traditional) banking reliable as a system of banking service provision?	
Perceived Usefulness	The service providers' ability to mobile banking service is similar to its ability to provide traditional banking service	(Kabir, M. R., 2013)
	I prefer to conduct banking transactions via M-Banking.	
	Integrity of the service provider has important influence in choosing mobile banking service	
	The mobile Banking service providers tend to provide integral service	
	Using mobile banking would enable the users to accomplish tasks more quickly	
	Using mobile banking would make it easier for the users to carry out tasks	
	Mobile banking is useful	
Digital Financial Literacy	I know how to use a computer and a smartphone	Abdallah, W., Tfaily, F., & Harraf, A, 2024)
	High-return investments are also high-risk investments	
	If inflation is high, the cost of living will rise swiftly	
	I handle my funds adequately for daily costs	
	I understand how to set up an account on digital financial services platforms	
	I understand how to conduct a transaction using a digital payment application	
	I understand how to cancel a transaction on a digital payment app	
	I understand how to use the digital financial services menu	
	I use at least one digital payment app	
	I am aware of the dangers of borrowing and abusive and exploitative lending tactics	
	Digital payment apps are used to make payments, save money and even borrow money	
	I know where to go for financial information and guidance	
	I've established financial objectives for the next 1–2 years regarding what I want to do with my money	

Variable	*Question*	*Source*
	I prefer to look at my budget over the next 1–2 years to get a clearer picture of my future expenditures	
Customer Engagement	I devote a lot of energy to this online social platform	(Cheung, C., Lee, M., & Jin, X., 2011)
	I feel strong and vigorous when I am using this online social platform	
	I am interested in this online social platform	
	Using this online social platform is so absorbing that I forgot about everything else	
	I am interested in this online social platform	
	I devote a lot of energy to this online social platform.	
	In the future, I intend to use mobile banking.	

The variables Convenience, Ease of Use, Perceived Value, and Perceived Usefulness were selected because they are critical determinants of mobile banking service. Convenience and ease of use are fundamental to how easily a product fits into a user's life, while perceived value and usefulness directly impact a user's assessment of the product's worth and functionality. These factors are supported by extensive research and are central to understanding user behavior. Other variables were excluded as they either overlap with the selected variables or are secondary in the context of the study.

3.5. Data Collection

Data collection involved administering close-ended questionnaires at Dashen Bank's branches, along with obtaining respondents' willingness to participate in the survey. The primary data collection instrument utilized was a structured questionnaire containing predetermined questions. A five-point Likert scale, ranging from strongly agree to strongly disagree with a neutral option, was employed. The questionnaire, constructed based on empirical literature review, aimed to measure customer engagement with mobile banking services and evaluate digital financial literacy. To ensure content validity, measurement items were primarily adopted from previous studies, with modifications made to fit the study's purpose. The questionnaire items used are outlined below.

Model Specification

The following model is formulated for this research to test the research Hypothesis.

CSEG= f (DFL, MBS)

$CSEG = \beta_0 + \beta_1 DFL + \beta_2 MBS + \varepsilon$

Where:

- (CSEG) = Customer Engagement is the dependent variable.

- (DFL) = Digital Financial Literacy represents the mediating variable.

- (MBS) = Mobile Banking Service is the independent variable.

- ε denotes the error terms.

- Additionally, (β_0) represents the intercept/constant, and (β) represents the slope.

3.6. Data Analysis

The research utilizes Partial Least Squares Structural Equation Modeling (PLS-SEM), a sophisticated statistical method that overcomes the limitations of traditional techniques such as multiple regression and analysis of variance. PLS-SEM is advantageous for its ability to handle complex relationships among numerous variables and to consider latent constructs indirectly measured by multiple indicators. This method is especially suited for exploratory studies and theory development, offering a "causal-predictive" approach to structural equation modeling (Hair, Hult, Ringle, & Sarstedt, 2022). PLS-SEM aims to explain the variance in dependent variables, making it valuable when theory is not well-established or when the main objective is to predict and elucidate target constructs. It is preferred over Covariance-Based SEM for its relevance to the research goals, focusing on prediction and explanation of model relationships. The analysis will be performed using SmartPLS, and SPSS as needed. One of the key advantages of SEM, and a reason for its application in this study, is its widespread and straightforward use for estimating point and/or interval indirect effects (Hair et al., 2010; Byrne, 2010). Data analysis will be conducted using SPSS version 25 and SmartPLS version 4.1.

3.7. Validity and Reliability

The validity and reliability of the research instruments are crucial for three main reasons: understanding the phenomena studied, achieving statistical significance in data analysis, and drawing meaningful conclusions from the data.

3.7.1. Validity

The structured questionnaire utilized for data collection underwent thorough verification and validation processes. Reputable scholars in the fields of finance, digital literacy, and customer engagement reviewed the questionnaire, providing valuable feedback and suggestions. Their input was instrumental in refining

the survey items, enhancing clarity, relevance, and alignment with the research objectives. The selection of literature and theoretical frameworks was conducted meticulously, drawing upon established theories and concepts from reputable sources. Each variable, including mobile banking service such as convenience, perceived usefulness, ease of use, perceived value, digital financial literacy, and customer engagement, has been rooted in relevant academic literature.

3.7.2. Reliability

Williamson (2002) defines reliability as the consistency of research results when repeated. The reliability of the survey depends on obtaining high-quality responses and ensuring respondents understand the questionnaire. Sample questions and a scaling mechanism were used to achieve this. The survey design ensures high response rates and clear understanding by respondents. To ensure reliability, the instrument will be standardized before distribution. Cronbach's alpha will be used to test the internal consistency of each construct, ensuring that the data collection method produces consistent results and that the raw data interpretation is transparent.

3.8. Ethical Considerations

According to Sekaran (2006), the researcher adhered to strict ethical guidelines. Participation in the study was voluntary, and data collection was conducted with respondent consent. Participants were fully informed about the study's purpose, and their information was handled with utmost confidentiality. Anonymity was guaranteed throughout the study, and the data collected from respondents was not misrepresented or distorted in any manner.

Chapter Four: Data Presentation, Analysis, and Interpretation

4.1. Introduction

This chapter focuses on presenting the data collected from the sample respondents through a survey questionnaire. Descriptive statistics are utilized to show the basic characteristics of the data. To assess the reliability and validity of the data, Cronbach's alpha and confirmatory factor analysis are employed. The analysis involves using SPSS version 26 and Smart PLS version 4 software. Structural equation modeling (SEM) is then applied to develop an appropriate model based on the data and to test the hypotheses.

4.2. Response Rate

Nine branches were selected for questionnaire distribution: Mexico, Lideta, Commerce, Stadium, Balcha, Ghion, Senga Tera, Ghandi, and Amoudi. Out of the 242 questionnaires distributed, only 171 were returned, resulting in a response rate of 70.7%. However, only 160 of the returned questionnaires were usable for the research. Fincham et al. (2008) suggest that a response rate of around 60% is a reasonable goal for most research. Therefore, with a response rate of 66.1%, this study achieved a very good return rate and the data is considered adequate for analysis and reporting.

4.3. Demographics Profile of Respondents

The demographic profile of respondents provides insights into the age distribution of the survey participants.

4.3.1. Age Distribution

The majority of respondents fall within the age range of 18-24 and 25-34, comprising 28.7% and 50.6% of the total respondents, respectively. A smaller portion of respondents are in the age groups of 35-44 (20.0%) and 45-54 (.6%). This indicates that the respondents were adults with an age range of 25-34 years old.

Table 4: Age Distribution of the Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	46	28.7	28.7	28.7
	25-34	81	50.6	50.6	79.4
	35-44	32	20.0	20.0	99.4
	45-54	1	.6	.6	100.0
	Total	160	100.0	100.0	

Source: Researcher's Survey Output using SPSS (2024)

4.3.2. Gender Distribution

The gender distribution among respondents shows a higher participation rate from males compared to females. Males constitute 60.0% of the respondents, while females make up 40.0%.

Table 5: Gender Distribution of the Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	64	40.0	40.0	40.0
	Male	96	60.0	60.0	100.0
	Total	160	100.0	100.0	

Source: Researcher's Survey Output using SPSS (2024)

4.3.3. Education Level

The education level of respondents indicates that a significant majority hold a Bachelor's degree, followed by those with a Master's degree and a smaller portion with a Diploma. Specifically, 67.5% of respondents have a Bachelor's degree, 29.4% have a Master's degree, and 3.1% have a Diploma. More than 60% of the respondents have a educational degree which could contribute positively to the digital financial literacy variables as it could be associated with education.

Table 6: Education Level of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor's Degre	108	67.5	67.5	67.5
	Diploma	5	3.1	3.1	70.6
	Master's Degree	47	29.4	29.4	100.0
	Total	160	100.0	100.0	

Source: Researcher's Survey Output using SPSS (2024)

4.3.4. Occupation

The occupation data shows that the majority of respondents are employed, with a smaller percentage being self-employed and students. Specifically, 90.6% of respondents are employed, 6.3% are self-employed, and 3.1% are students.

Table 7: Occupation of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed	145	90.6	90.6	90.6
	Self-employed	10	6.3	6.3	96.9
	Student	5	3.1	3.1	100.0
	Total	160	100.0	100.0	

Source: Researcher's Survey Output using SPSS (2024)

4.3.5. Income Level

The income level data reveals the distribution of respondents' income. The majority earn between 10,001 and 20,000, followed by those earning more than 20,000. A smaller percentage earn between 1,651 and 5,250, less than 1,650, and between 5,251 and 10,000. More than 50% of the respondents have an oncome level of Birr 10,000 – 20,000 which could contribute positively to the digital financial literacy variables as it could be associated with income and finances.

Table 8: Income Level of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<1,650	4	2.5	2.5	2.5
	>20,000	62	38.8	38.8	41.3
	1,651- 5,250	5	3.1	3.1	44.4
	10,001-20,000	86	53.8	53.8	98.1
	5,251-10,000	3	1.9	1.9	100.0
	Total	160	100.0	100.0	

Source: Researcher's Survey Output using SPSS (2024)

4.4. Structural Equation Modeling (SEM)

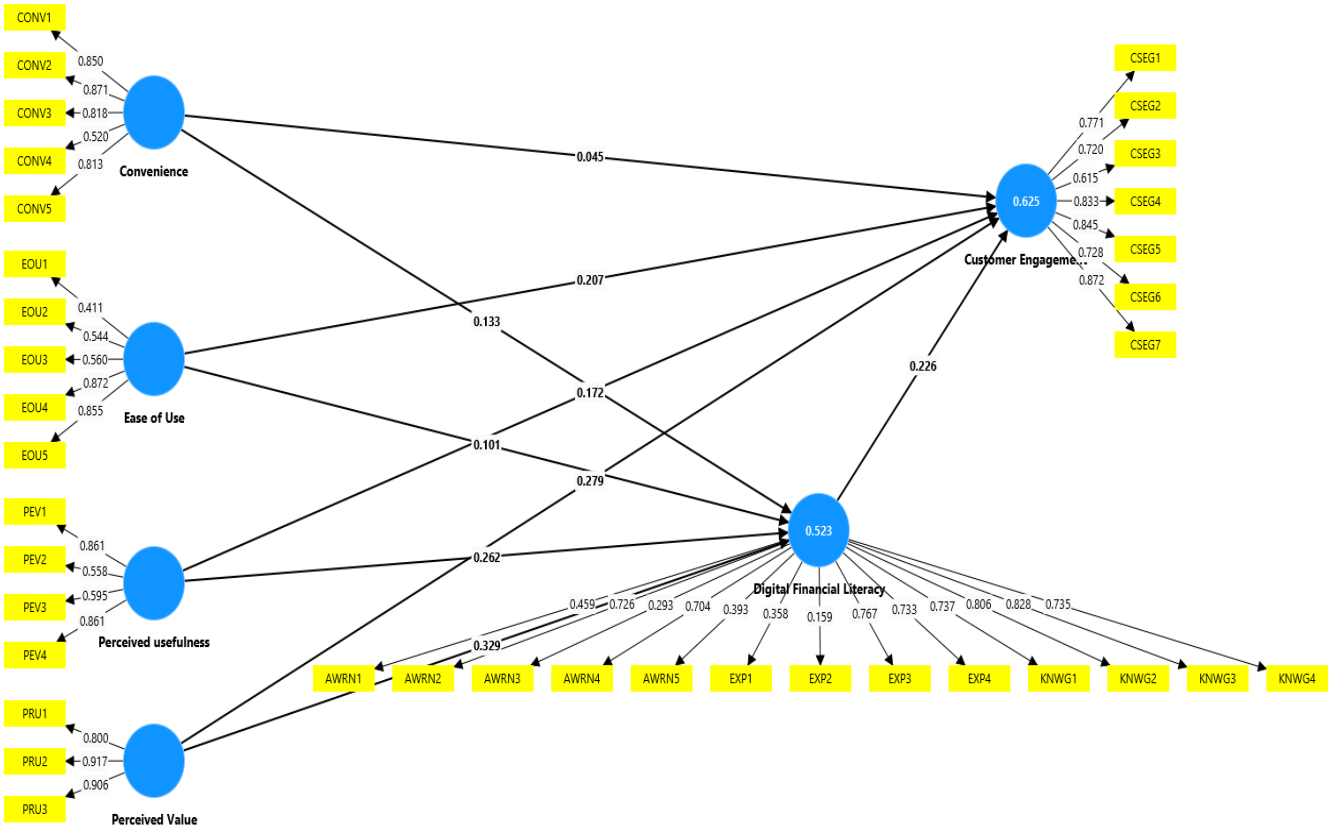
The primary aim of Structural Equation Modeling (SEM) is to assess how well a proposed model fits or represents the sample data. SEM consists of two components: the measurement model and the structural model. The measurement model defines the relationships between observable and unobservable variables, linking the scores on measurement instruments (observed indicator variables) to the underlying constructs they aim to measure (Byrne, 2010). This model represents the Confirmatory Factor Analysis (CFA) model, which is elaborated further below. In contrast, the structural model outlines the relationships among unobserved variables, explaining how certain latent variables directly or indirectly influence changes in the values of other latent variables (Byrne, 2010).

4.4.1. Measurement Model

Smart PLS 4.0 was used in this study to test the model. Tenenhaus (2005) proposed three metrics to define the overall quality of the model. These metrics involve the use of the measurement model at the first level, the structural model at the second level, and the structural regression equation independently at the third level. The convergent and discriminant validity of construct measures is utilized to monitor scale reliability and assess various sub-factors evaluated in the measurement module. The measurement model was validated by evaluating individual sub-factors and scale reliability, monitored through the convergent and discriminant validity of the construct measurements. Common connections included

convenience, ease of use, perceived usefulness, perceived value, digital financial literacy, and customer engagement. Validity tests were conducted to assess discriminant validity, convergent validity, and the dependability of the measurement model (Henderson, 2012).

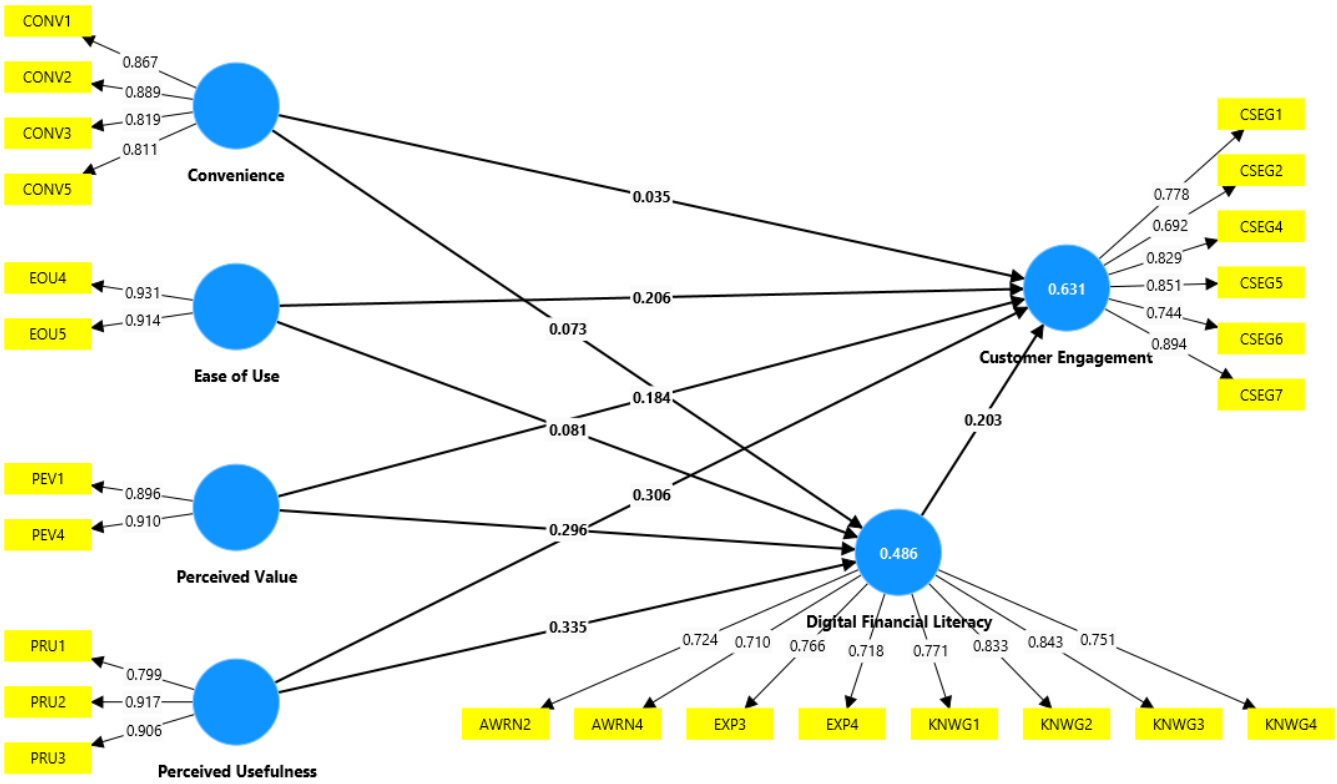
Figure 2: Initial Path Model



Source: Researcher's Survey Output using SmartPLS 4 (2024)

The minimum factor loading for sub-factors was set at 0.45, as recommended by Comrey (1973). Factor loadings less than 0.67 were not considered, as only those greater than this threshold were deemed acceptable for inclusion in the final model, improving overall model fit (Peterson, 2000; Floyd, 2009).

Figure 3: Result after Dropping Sub-factor



Source: Researcher's Survey Output using SmartPLS 4 (2024)

4.4.2. Confirmatory Analysis

According to (Hair et al, 1992) confirmatory factor analysis is a method of determining how effectively measured variables represent a subset of the constructs that they are designed to assess The CFA provides several statistics that demonstrate how well the theoretical definition of the factors corresponds to the actual data utilized. This study's confirmatory factor analysis begins by examining the fit of the measurement model, which examines how well the indicator variables fit to measure the latent variable. This is known as construct validity, and it examines the amount to which a collection of measured items truly represents the underlying component model that those questions are meant to measure (Hair et al, 1992). Construct validity is divided into discriminating and convergent validity

4.4.3. Reliability and Validity Reliability

4.4.3.1.Reliability

Reliability refers to the consistency of data collection methods or analysis procedures in producing stable results (Saunders, Lewis & Thornhill, 2008). Reliable observations yield the same outcomes on different occasions and by different observers. For validity to be established, the interpretation of raw data must

also be clear. The dependability of a scale is often determined by test-retest reliability or internal consistency (Zikmund, 2010). Test-retest reliability is assessed by administering the same measurement scale to the same respondents at different times and correlating the two sets of scores (Zikmund, 2010). Internal consistency measures how well the items on a scale all measure the same underlying construct (Zikmund et al., 2010), with coefficient alpha being the most common indicator of internal consistency.

Table 9: Reliability and Internal Validity

Code	Questions	Outer Loadings	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
	Convenience		0.868	0.870	0.910	0.718
CONV1	Transactions can be carried out quickly using Dashen Bank's mobile banking.	0.867				
CONV2	Dashen Bank's mobile banking app saves effort in managing my finances.	0.889				
CONV3	Dashen Bank's mobile banking app saves time in managing my finances.	0.819				
CONV5	Dashen Bank's mobile banking provides convenience for banking services.	0.811				
	Customer Engagement		0.887	0.898	0.914	0.641
CSEG1	I prioritize engaging with Dashen Bank's digital platforms.	0.778				
CSEG2	I follow Dashen Bank's social media accounts.	0.692				
CSEG4	I maintain my engagement with Dashen Bank's mobile banking app due to its consistent delivery of quality services.	0.829				
CSEG5	I am likely to recommend the bank's services to others.	0.851				
CSEG6	I will likely remain a long-term customer of the Bank in the future.	0.744				
CSEG7	I am likely to use Dashen Bank's mobile banking app frequently in the future.	0.894				
	Digital Financial Literacy		0.899	0.901	0.919	0.587
KNWG 1	I have some understanding of financial terms and concepts related to banking.	0.771				
KNWG 2	I feel confident in my understanding of digital banking.	0.833				
KNWG 3	I regularly seek information to improve my digital financial knowledge.	0.843				
KNWG 4	I have an understanding of how to make informed financial decisions.	0.751				
EXP3	I am comfortable using various digital banking platforms.	0.766				

Code	Questions	Outer Loadings	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
EXP4	I use digital tools for financial planning, budgeting, and banking transactions.	0.718				
AWRN2	I am aware of the benefits related with using digital banking services.	0.724				
AWRN4	I am aware of the digital security protocols employed by Dashen Bank.	0.710				
	Ease of Use		0.826	0.832	0.920	0.851
EOU4	Dashen Bank's mobile banking app instructions are easy to understand.	0.931				
EOU5	Using Dashen Bank's mobile banking app is easy.	0.914				
	Perceived Usefulness		0.846	0.860	0.908	0.766
PRU1	I primarily prefer to conduct transactions using Dashen Bank's mobile banking app.	0.799				
PRU2	Dashen Bank's mobile banking usage reduces transaction time.	0.917				
PRU3	Dashen Bank's mobile banking app is useful.	0.906				
	Perceived Value		0.774	0.776	0.898	0.815
PEV1	Dashen Bank's mobile banking usage improves my banking experience.	0.896				
PEV4	Dashen Bank's mobile banking services is valuable to me.	0.910				

Source: Researcher's Survey Output using SmartPLS 4 (2024)

4.4.3.2.Validity

Validity tests are crucial for ensuring the research instrument measures what it is intended to measure. External validity refers to the extent to which research findings can be generalized across different populations, settings, and times, while internal validity assesses the accuracy of the research instrument (Cooper, 2008). Internal validity can be evaluated through face validity, content validity, criteria validity, and construct validity (Zikmund, 2010). To ensure content validity, measurement items in this study were primarily adopted from prior research. The data were analyzed using Partial Least Squares Regression (PLS) with Smart PLS 4. Validity was assessed using composite reliability and construct validity, with composite reliability (CR) values greater than 0.6 and outer loading factors above 0.7, indicating high validity and reliability.

4.4.3.3.Convergent Validity

Convergent validity assesses how closely related items within a construct share a high proportion of variance (Hair et al., 2010). Convergent validity in this study was measured using the Average Variance

Extracted (AVE). According to Hair (1992), an AVE greater than 0.5 (P value < 0.05) is required, and all constructs in this study met this criterion, indicating strong convergent validity.

4.4.3.4.Discriminant Validity

Discriminant validity ensures that measures of different constructs are not so highly correlated that they appear to measure the same construct. In this study, discriminant validity was evaluated by comparing the AVE for each construct with the squared inter-factor correlations associated with that construct. The AVE scores exceeded 0.5, and composite reliability (CR) values were greater than 0.7 (Hair et al., 2010). Discriminant validity is confirmed if the AVE square root of a construct is greater than its correlation with other constructs, as shown in Table 10.

Table 10: Discriminant Validity (Fornell-Larcker criterion)

	Convenience	**Customer Engagement**	**Digital Financial Literacy**	**Ease of Use**	**Perceived Usefulness**	**Perceived Value**
Convenience	**0.847**					
Customer Engagement	0.645	**0.801**				
Digital Financial Literacy	0.591	0.644	**0.766**			
Ease of Use	0.627	0.650	0.526	**0.923**		
Perceived Usefulness	0.727	0.730	0.645	0.692	**0.875**	
Perceived Value	0.755	0.661	0.624	0.564	0.679	**0.903**

Source: Researcher's Survey Output using SmartPLS 4 (2024)

NB: Diagonals (in bold) represent the average variance extracted while the other entries represent the squared correlations matrix.

4.4.3.5.Test for Absence of Series Multicollinearity Assumption

Multicollinearity can diminish the amount of information about the effect of explanatory variables on dependent variables (Churchill and Iacobucci, 2005). While independent variables can be correlated, they should not be perfectly correlated. In PLS-SEM, the inner VIF report is used to assess collinearity among constructs. Values should be below 3.3 (Hair, Hult, Ringle, & Sarstedt, 2022). In this study, as shown in Table 11, the VIF values are below 3.3, indicating no multicollinearity issues.

Table 11: Variance Inflation Factor Outer Model

Variables	VIF	Tolerance
AWRN2 <- Digital Financial Literacy	1.919	0.52
AWRN4 <- Digital Financial Literacy	1.802	0.55
CONV1 <- Convenience	2.446	0.41
CONV2 <- Convenience	2.676	0.37
CONV3 <- Convenience	1.882	0.53
CONV5 <- Convenience	1.919	0.52
CSEG1 <- Customer Engagement	1.976	0.51
CSEG2 <- Customer Engagement	1.583	0.63
CSEG4 <- Customer Engagement	2.244	0.45
CSEG5 <- Customer Engagement	2.617	0.38
CSEG6 <- Customer Engagement	1.835	0.54
CSEG7 <- Customer Engagement	3.270	0.31
EOU4 <- Ease of Use	1.977	0.51
EOU5 <- Ease of Use	1.977	0.51
EXP3 <- Digital Financial Literacy	2.157	0.46
EXP4 <- Digital Financial Literacy	2.031	0.49
KNWG1 <- Digital Financial Literacy	2.373	0.42
KNWG2 <- Digital Financial Literacy	2.923	0.34
KNWG3 <- Digital Financial Literacy	2.942	0.34
KNWG4 <- Digital Financial Literacy	2.062	0.48
PEV1 <- Perceived Value	1.661	0.60
PEV4 <- Perceived Value	1.661	0.60
PRU1 <- Perceived Usefulness	1.622	0.62
PRU2 <- Perceived Usefulness	2.964	0.34
PRU3 <- Perceived Usefulness	2.666	0.38

Source: Researcher's Survey Output using SmartPLS 4 (2024)

4.5. Structural Model Analysis

The structural model illustrates how specific latent variables influence changes in other latent variables, either directly or indirectly (Byrne et al., 2010). A bootstrapping re-sampling method with 160 samples (Efron & Tibshirani, 1993) was used to determine the significance levels of the paths within the structural model. A 5% significance threshold ($p<0.05$) was applied as a statistical measure. The resulting t-values indicate the significance level of the estimated relationships between the constructs. Table 9 summarizes the findings of the structural model.

4.5.1. Hypothesis Testing

The table below is based on the Smart-PLS output of structural model estimations in fig 2.

Table 12: Path Coefficients along with their bootstrap values and 'T' Values

Variables	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Result
Convenience -> Customer Engagement	0.032	0.038	0.082	0.383	0.702	Not Supported
Convenience -> Digital Financial Literacy	0.053	0.059	0.116	0.453	0.651	Not Supported
Digital Financial Literacy -> Customer Engagement	0.189	0.193	0.077	2.450	0.014	Supported
Ease of Use -> Customer Engagement	0.202	0.194	0.083	2.424	0.015	Supported
Ease of Use -> Digital Financial Literacy	0.073	0.067	0.091	0.809	0.419	Not Supported
Perceived Usefulness -> Customer Engagement	0.310	0.305	0.104	2.971	0.003	Supported
Perceived Usefulness -> Digital Financial Literacy	0.330	0.331	0.115	2.866	0.004	Supported
Perceived Value -> Customer Engagement	0.202	0.205	0.102	1.991	0.046	Supported
Perceived Value -> Digital Financial Literacy	0.341	0.330	0.097	3.526	0.000	Supported

Source: Researcher's Survey Output using SmartPLS 4 (2024)

Following the study's conceptual framework, the research evaluated variables such as Convenience, Ease of Use, Perceived Usefulness, Perceived Value, Customer Engagement, and Digital Financial Literacy. This evaluation led to the formulation of four hypotheses. The hypotheses are represented by one-headed arrows between latent variables in the final structural model. The hypotheses were tested using a t-value rule of ±1.96 with a significance level (p-value) of 0.05. All unstandardized regression estimates should

align with the anticipated direction and be statistically different from zero (i.e., the critical ratio should exceed 1.96 at a significance level of $\alpha = 0.05$) (Byrne et al., 2010; Hair et al., 2010).

4.5.2. Convenience and Customer Engagement

The relationship between Convenience and Customer Engagement was not supported and not significant with the original sample $\beta = 0.032$, statistics (t) = 0.383, and significant value (p) = 0.702, indicating that Convenience does not significantly influence Customer Engagement.

4.5.3. Convenience and Digital Financial Literacy

The relationship between Convenience and Digital Financial Literacy was not supported and not significant with the original sample $\beta = 0.053$, statistics (t) = 0.453, and significant value (p) = 0.651, indicating that Convenience does not significantly influence Digital Financial Literacy.

4.5.4. Digital Financial Literacy and Customer Engagement

The relationship between Digital Financial Literacy and Customer Engagement was supported and significant with the original sample $\beta = 0.189$, statistics (t) = 2.450, and significant value (p) = 0.014, indicating that Digital Financial Literacy influences Customer Engagement directly and positively. The finding indicates that a unit increase in Digital Financial Literacy leads to 0.189 increases in Customer Engagement.

4.5.5. Ease of Use and Customer Engagement

The relationship between Ease of Use and Customer Engagement was supported and significant with the original sample $\beta = 0.202$, statistics (t) = 2.424, and significant value (p) = 0.015, indicating that Ease of Use influences Customer Engagement directly and positively. The finding indicates that a unit increase in Ease of Use leads to 0.202 increases in Customer Engagement.

4.5.6. Ease of Use and Digital Financial Literacy

The relationship between Ease of Use and Digital Financial Literacy was not supported and not significant with the original sample $\beta = 0.073$, statistics (t) = 0.809, and significant value (p) = 0.419, indicating that Ease of Use does not significantly influence Digital Financial Literacy.

4.5.7. Perceived Usefulness and Customer Engagement

The relationship between Perceived Usefulness and Customer Engagement was supported and significant with the original sample $\beta = 0.310$, statistics (t) = 2.971, and significant value (p) = 0.003, indicating that Perceived Usefulness influences Customer Engagement directly and positively. The finding indicates that a unit increase in Perceived Usefulness leads to 0.310 increases in Customer Engagement.

4.5.8. Perceived Usefulness and Digital Financial Literacy

The relationship between Perceived Usefulness and Digital Financial Literacy was supported and significant with the original sample β = 0.330, statistics (t) = 2.866, and significant value (p) = 0.004, indicating that Perceived Usefulness influences Digital Financial Literacy directly and positively. The finding indicates that a unit increase in Perceived Usefulness leads to 0.330 increases in Digital Financial Literacy.

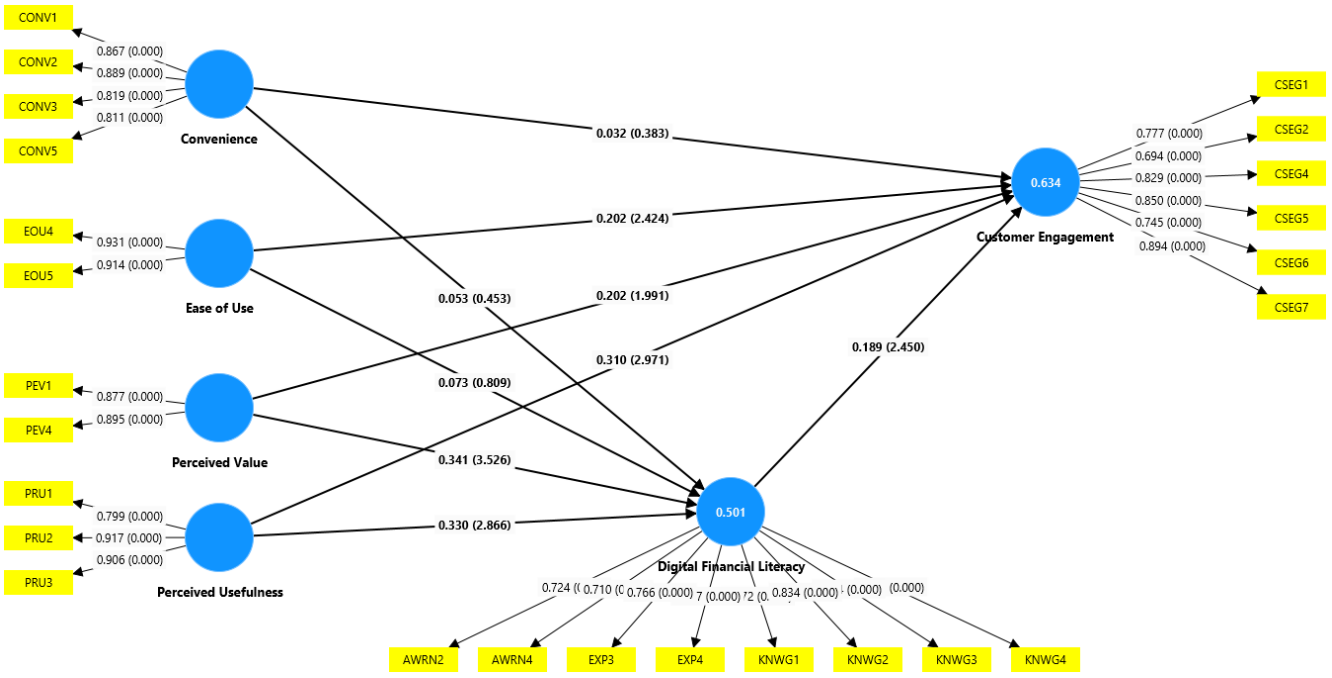
4.5.9. Perceived Value and Customer Engagement

The relationship between Perceived Value and Customer Engagement was supported and significant with the original sample β = 0.202, statistics (t) = 1.991, and significant value (p) = 0.046, indicating that Perceived Value influences Customer Engagement directly and positively. The finding indicates that a unit increase in Perceived Value leads to 0.202 increases in Customer Engagement.

4.5.10. Perceived Value and Digital Financial Literacy

The relationship between Perceived Value and Digital Financial Literacy was supported and significant with the original sample β = 0.341, statistics (t) = 3.526, and significant value (p) < 0.001, indicating that Perceived Value influences Digital Financial Literacy directly and positively. The finding indicates that a unit increase in Perceived Value leads to 0.341 increases in Digital Financial Literacy.

Figure 4: Bootstrapping Results



Source: Researcher's Survey Output using SmartPLS 4 (2024)

4.5.2. Mediation Effect Test

A mediation test is conducted to determine if a mediator construct significantly transmits the effect of an independent variable on a dependent variable (Ramayah, 2011). This test reveals the indirect influence of the independent variable on the dependent variable through the mediator variable. Using the Partial Least Squares (PLS) approach for the mediation test in this study, the hypotheses were evaluated using the PLS Structural Equations Modeling (SEM) technique. The mediation test was assessed using a bootstrapping method with 5000 resamples, in line with the developed hypotheses (Hair et al., 2021).

Table 13: Specific Indirect Effects

Variables	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Results
Ease of Use -> Digital Financial Literacy -> Customer Engagement	0.014	0.014	0.020	0.685	0.493	Not Supported
Perceived Usefulness -> Digital Financial Literacy -> Customer Engagement	0.062	0.062	0.031	2.003	0.045	Supported
Perceived Value -> Digital Financial Literacy -> Customer Engagement	0.065	0.064	0.032	2.002	0.045	Supported
Convenience -> Digital Financial Literacy -> Customer Engagement	0.010	0.013	0.025	0.396	0.692	Not Supported

Source: Researcher's Survey Output using SmartPLS 4 (2024)

The relationship between Ease of Use, Digital Financial Literacy, and Customer Engagement was not supported and not significant with the original sample β = 0.014, statistics (t) = 0.685, and significant value (p) = 0.493, indicating that Ease of Use, mediated by Digital Financial Literacy, does not significantly influence Customer Engagement. The relationship between Perceived Usefulness, Digital Financial Literacy, and Customer Engagement was supported and significant with the original sample β = 0.062, statistics (t) = 2.003, and significant value (p) = 0.045, indicating that Perceived Usefulness, mediated by Digital Financial Literacy, influences Customer Engagement directly and positively. The finding indicates that a unit increase in Perceived Usefulness leads to a 0.062 increase in Customer Engagement through Digital Financial Literacy.

The relationship between Perceived Value, Digital Financial Literacy, and Customer Engagement was supported and significant with the original sample β = 0.065, statistics (t) = 2.002, and significant value (p) = 0.045, indicating that Perceived Value, mediated by Digital Financial Literacy, influences Customer Engagement directly and positively. The finding indicates that a unit increase in Perceived Value leads to a 0.065 increase in Customer Engagement through Digital Financial Literacy. The relationship between Convenience, Digital Financial Literacy, and Customer Engagement was not supported and not significant with the original sample β = 0.010, statistics (t) = 0.396, and significant value (p) = 0.692, indicating that Convenience, mediated by Digital Financial Literacy, does not significantly influence Customer Engagement.

4.6. Predictive Relevance

According to Fornell and Cha (1994), a model has predictive quality if the cross-redundancy value (Q^2) is greater than zero. If Q^2 is less than or equal to zero, the model's predictive significance cannot be established. Hair, Hult, Ringle, and Sarstedt (2013) provide criteria for assessing predictive relevance: a Q^2 value of 0.02 indicates small predictive relevance, a Q^2 value of 0.15 indicates medium predictive relevance, and a Q^2 value of 0.35 indicates large predictive relevance.

Table 14: Predictive Relevance

Dependent Variable	Q^2predict	R^2	R^2 adjusted
Customer Engagement	0.678	0.731	0.719

Source: Researcher's Survey Output using SmartPLS 4 (2024)

4.7. Discussion of Results

The findings of this study on the impact of Mobile Banking Service on customer engagement and the mediating role of digital financial literacy are both consistent and inconsistent with previous empirical literature.

4.7.1. Convenience in Mobile Banking and its Impact on Customer Engagement and Digital Financial Literacy

The study found that convenience did not significantly affect customer engagement (β = 0.035, t = 0.428, p = 0.668) or digital financial literacy (β = 0.073, t = 0.600, p = 0.549). This result is inconsistent with Zhao and Rojniruttikul (2023) and Roy et al. (2018), who highlighted that convenience is a key factor influencing customer engagement. Their studies suggested that when customers find mobile banking

services convenient, they are more likely to engage positively with the bank. The inconsistency may be due to contextual differences or specific characteristics of Dashen Bank's customer base that were not captured in the broader studies.

4.7.2. Usefulness in Mobile Banking and Its Impact on Customer Engagement and Digital Financial Literacy

The results showed that perceived usefulness significantly impacted both customer engagement ($\beta = 0.306$, $t = 2.845$, $p = 0.004$) and digital financial literacy ($\beta = 0.335$, $t = 2.703$, $p = 0.007$), consistent with the findings of Sahoo & Pillai (2017), Jeong & Yoon (2013), and Arcand et al. (2017). These studies underscored that the perceived usefulness of mobile banking services is crucial for fostering positive customer attitudes, leading to higher engagement. Similarly, Prasad, Meghwal, and Dayama (2018) and Yuneline and Rosanti (2023) emphasized that individuals with higher digital financial literacy are better equipped to recognize the benefits and usefulness of digital financial services, reinforcing the current study's results.

4.7.3. Ease of Use in Mobile Banking and Its Impact on Customer Engagement and Digital Financial Literacy

The study found that ease of use significantly affected customer engagement ($\beta = 0.206$, $t = 2.408$, $p = 0.016$) but did not significantly impact digital financial literacy ($\beta = 0.081$, $t = 0.841$, $p = 0.400$). This partially aligns with Mostafa (2020) and Kamboj et al. (2021), who indicated that ease of use is crucial for customer engagement. However, the lack of a significant impact on digital financial literacy is inconsistent with Susanti and Susanti (2021), who suggested that ease of use positively influences the adoption of digital financial services. The inconsistency may arise from different measures of financial literacy or varying levels of technology adoption across study populations.

4.7.4. Perceived Value in Mobile Banking and Its Impact on Customer Engagement and Digital Financial Literacy

The results indicated that perceived value significantly influenced both customer engagement ($\beta = 0.184$, $t = 1.716$, $p = 0.086$) and digital financial literacy ($\beta = 0.296$, $t = 2.748$, $p = 0.006$), which is consistent with Sahoo & Pillai (2017) and Mutahar et al. (2021). These studies demonstrated that perceived value plays a crucial role in shaping customer attitudes and predicting the intention to use mobile banking services. Similarly, Prasad, Meghwal, and Dayama (2018) highlighted the importance of digital financial literacy in enhancing the perceived value of digital financial tools.

4.7.5. Digital Financial Literacy and Its Impact on Customer Engagement

The study confirmed that digital financial literacy is a strong predictor of customer engagement ($\beta = 0.203$, $t = 2.638$, $p = 0.008$), consistent with Cahaya, Riwayati, and Markonah (2023), and Golden and Cordie (2022). These studies suggested that higher levels of financial literacy positively influence customer engagement and loyalty. This finding reinforces the importance of digital financial literacy in fostering effective use and engagement with mobile banking services.

Chapter Five: Summary of Results, Conclusion, and Recommendation

5.1. Summary of Results

The research investigated the impact of Mobile Banking Service on customer engagement at Dashen Bank S.C., with a focus on the mediating role of digital financial literacy. Structural Equation Modeling (SEM) was employed to analyze the relationships among various factors, including convenience, ease of use, perceived usefulness, perceived value, digital financial literacy, and customer engagement. The findings offered a comprehensive understanding of these dynamics. The study utilized a sample of 160 respondents, statistical tools and methodologies via SPSS and SmartPLS 4.

The analysis revealed that convenience did not have a significant impact on customer engagement ($\beta = 0.035$, $t = 0.428$, $p = 0.668$) or digital financial literacy ($\beta = 0.073$, $t = 0.600$, $p = 0.549$). These findings suggest that while convenience is often considered important, it does not necessarily translate into increased engagement or improved financial literacy in the context of Dashen Bank's mobile banking services.

Perceived usefulness was found to have a significant positive impact on both customer engagement ($\beta = 0.306$, $t = 2.845$, $p = 0.004$) and digital financial literacy ($\beta = 0.335$, $t = 2.703$, $p = 0.007$). These results are consistent with previous studies, indicating that customers who find mobile banking useful are more likely to engage with the service and possess higher levels of digital financial literacy.

Ease of use significantly affected customer engagement ($\beta = 0.206$, $t = 2.408$, $p = 0.016$) but did not significantly impact digital financial literacy ($\beta = 0.081$, $t = 0.841$, $p = 0.400$). This indicates that while an easy-to-use mobile banking platform can enhance customer engagement, it does not necessarily improve customers' digital financial literacy.

The study found that perceived value significantly influenced both customer engagement ($\beta = 0.184$, $t = 1.716$, $p = 0.086$) and digital financial literacy ($\beta = 0.296$, $t = 2.748$, $p = 0.006$). These findings align with the literature, suggesting that when customers perceive high value in mobile banking services, they are more likely to engage with the service and have better financial literacy.

Digital financial literacy was shown to be a strong predictor of customer engagement (β = 0.203, t = 2.638, p = 0.008). This supports the hypothesis that higher levels of financial literacy enhance customer engagement with mobile banking services.

The relationship between Ease of Use, Digital Financial Literacy, and Customer Engagement was not supported and not significant, with the original sample β = 0.014, statistics (t) = 0.685, and significant value (p) = 0.493, indicating that Ease of Use, mediated by Digital Financial Literacy, does not significantly influence Customer Engagement.

The relationship between Perceived Usefulness, Digital Financial Literacy, and Customer Engagement was supported and significant, with the original sample β = 0.062, statistics (t) = 2.003, and significant value (p) = 0.045. This indicates that Perceived Usefulness, when mediated by Digital Financial Literacy, significantly influences Customer Engagement.

The relationship between Perceived Value, Digital Financial Literacy, and Customer Engagement was also supported and significant, with the original sample β = 0.065, statistics (t) = 2.002, and significant value (p) = 0.045. This demonstrates that Perceived Value, mediated by Digital Financial Literacy, significantly influences Customer Engagement.

Conversely, the relationship between Convenience, Digital Financial Literacy, and Customer Engagement was not supported and not significant, with the original sample β = 0.010, statistics (t) = 0.396, and significant value (p) = 0.692. This indicates that Convenience, mediated by Digital Financial Literacy, does not significantly influence Customer Engagement.

5.2. Conclusion

The study provides insightful findings on the dynamics between various aspects of Mobile Banking Service, digital financial literacy, and customer engagement. The analysis reveals several key conclusions that align with and diverge from existing empirical literature, offering a nuanced understanding of the subject matter.

Firstly, the study found that perceived usefulness of mobile banking services is a critical driver of customer engagement and digital financial literacy. Customers who find mobile banking services useful are more likely to engage with these services and possess higher levels of digital financial literacy. This

supports the notion that utility and practicality are paramount in the adoption and engagement processes, aligning with the findings of Sahoo & Pillai (2017) and Jeong & Yoon (2013).

Ease of use was also identified as an important factor for customer engagement, although it did not significantly influence digital financial literacy. This suggests that while a user-friendly interface can attract and retain customers, it does not necessarily educate them or improve their financial literacy. This partial alignment with existing studies highlights the need for banks to balance usability with educational initiatives.

Convenience, surprisingly, did not show a significant impact on either customer engagement or digital financial literacy. This result deviates from studies by Zhao and Rojniruttikul (2023) and Roy et al. (2018), indicating that convenience alone might not be sufficient to drive engagement or enhance financial literacy in the context of Dashen Bank's mobile banking services.
Perceived value emerged as a significant predictor of both customer engagement and digital financial literacy. This aligns with the work of Mutahar et al. (2021), highlighting that customers who perceive high value in mobile banking services are more engaged and better informed.

Digital financial literacy was confirmed as a strong predictor of customer engagement. Higher levels of financial literacy correlate with increased customer engagement, reinforcing the importance of educational initiatives that enhance customers' understanding of digital financial tools and services. This finding is consistent with Cahaya, Riwayati, and Markonah (2023) and Golden and Cordie (2022), emphasizing the critical role of financial literacy in customer relationships.

Finally, it was confirmed that while Perceived Usefulness and Perceived Value significantly influence Customer Engagement through the mediation of Digital Financial Literacy, Ease of Use and Convenience do not have a significant mediated effect on Customer Engagement.

5.3. Recommendation

Based on the findings from the study "The Effect of Mobile Banking Service on Customer Engagement: The Mediating Role of Digital Financial Literacy in the case of Dashen Bank S.C.", several recommendations are provided to enhance customer engagement through mobile banking services, with a focus on the crucial role of digital financial literacy.

- The findings indicate that convenience did not significantly impact either customer engagement or digital financial literacy. Given this, it is recommended that Dashen Bank reevaluates the aspects of convenience that are currently being prioritized. While convenience alone may not drive engagement, it should not be disregarded entirely. This can involve optimizing existing processes such as reducing transaction times, simplifying the login process, and integrating more intuitive navigation paths. By improving these aspects, convenience can be elevated to support other key drivers of engagement more effectively.
- Perceived usefulness emerged as a critical driver for both customer engagement and digital financial literacy. Therefore, Dashen Bank should focus on continuously enhancing the practical utility of its mobile banking services. This can include updating and improving existing features such as advanced financial management tools, real-time financial analytics, and personalized alerts.
- While ease of use was found to significantly affect customer engagement, it did not have a notable impact on digital financial literacy. This suggests that while a user-friendly interface attracts and retains customers, it doesn't necessarily educate them. To enhance both, Dashen Bank should maintain a focus on intuitive design while integrating educational components within the app. Simplifying navigation and minimizing the number of steps required to complete tasks will enhance usability. Concurrently, adding interactive tutorials, tooltips, and guides can educate users on financial concepts as they navigate the app.
- Perceived value significantly influenced both customer engagement and digital financial literacy. To capitalize on this, Dashen Bank should communicate the tangible benefits of its mobile banking services more effectively. To enhance perceived value, Dashen Bank should emphasize the benefits of its mobile banking services through targeted marketing campaigns. Highlighting aspects like cost savings, time efficiency, and enhanced security will help users appreciate the value provided. Developing loyalty programs and offering rewards for frequent usage can further enhance the perceived value and encourage continuous engagement.
- Given that digital financial literacy is a strong predictor of customer engagement, Dashen Bank should invest heavily in educational initiatives aimed at improving customers' financial literacy. This can include creating comprehensive educational content such as e-books, videos, and webinars focused on key financial concepts and the benefits of digital financial tools. Embedding these resources within the mobile banking app will make it easier for users to access and learn.

Furthermore, the bank could host seminars to engage customers in interactive learning sessions, thereby enhancing their digital financial literacy and, consequently, their engagement with mobile banking services.

5.4. Suggestions for Future Research

While the study explored the relationships between digital financial literacy, mobile banking services, and customer engagement, it did not account for other potential moderating or mediating variables that could influence these relationships. Factors such as customer demographics, geographic, cultural influences, and economic conditions were not considered and could provide additional insights if included.

- **Broader Contextual Analysis**: Investigate the impact of mobile banking services and digital financial literacy on customer engagement across different regions and populations to enhance the generalizability of the findings.
- **Qualitative Approaches**: Incorporate qualitative methods such as interviews and focus groups to provide deeper insights into customer experiences and perceptions of mobile banking services.
- **Moderating and Mediating Variables**: Examine other potential moderating or mediating variables that could influence the relationship between mobile banking services, digital financial literacy, and customer engagement. This includes factors such as customer demographics, geographic, cultural influences, and economic conditions.
- **Longitudinal Studies**: Conduct longitudinal studies to track changes in customer engagement and digital financial literacy over time, providing a more dynamic understanding of these relationships.
- **Comparative Studies**: Compare the effects of mobile banking services and digital financial literacy on customer engagement across different financial institutions or countries to identify best practices and contextual differences.
- **Behavioral Economics**: Explore the role of behavioral economics in understanding how customers make decisions regarding mobile banking and how digital financial literacy impacts these decisions.
- **Impact of Emerging Technologies**: Investigate how emerging technologies such as artificial intelligence, blockchain, and advanced data analytics influence mobile banking services, digital financial literacy, and customer engagement.

- **Customer Trust and Security**: Examine the role of trust and security in mobile banking services and how they impact customer engagement and digital financial literacy.
- **Policy and Regulation Impact**: Assess the impact of policies and regulations on the adoption and effectiveness of mobile banking services and digital financial literacy initiatives.
- **Financial Inclusion**: Study the effects of mobile banking services and digital financial literacy on financial inclusion, particularly among underserved and unbanked populations.

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Appendices

Questionnaire

Addis Ababa University
School of Commerce
Department of Marketing Management

Dear Participants,

You're invited to participate in a research study on "**the effect of mobile banking service on customer engagement: the mediating role of digital financial literacy**." Your responses will help us understand the relationships between digital financial literacy, mobile banking services, and customer engagement. Your input is confidential and vital to the research. Thank you for your participation. **SD- Strongly Disagree, D- Disagree, N- Neutral, A- Agree, SA- Strongly Agree**

If you have any suggestions or feedback please use: Email: abenezerbisrat33@gmail.com Tel: +251-911-623-889

Demographic Information

Age: ☐ 18-24 ☐ 25-34 ☐ 35-44 ☐ 45-54 ☐ Above 55

Gender: ☐ Male ☐ Female

Highest Educational level:

☐ High school ☐ Diploma ☐ Bachelor's Degree

☐ Master's Degree ☐ Ph.D. Degree or above

Occupation:

☐ Student ☐ Employed ☐ Self Employed

☐ Unemployed

Income Level:

☐ Below Birr 1,650 ☐ Birr 1,651 – 5,250 ☐ Birr 5,251 – 10,000

☐ Birr 10,001 – 20,000 ☐ Above Birr 20,000

Code	Digital Financial Literacy	SD	D	N	A	SA
KNWG1	I have some understanding of financial terms and concepts related to banking.					
KNWG2	I feel confident in my understanding of digital banking.					
KNWG3	I regularly seek information to improve my digital financial knowledge.					
KNWG4	I have an understanding of how to make informed financial decisions.					
EXP 1	I possess practical experience in using digital banking services.					
EXP 2	I have experience with various digital banking platforms (USSD, Internet, Mobile, and Card banking).					
EXP 3	I am comfortable using various digital banking platforms.					
EXP 4	I use digital tools for financial planning, budgeting, and banking transactions.					
AWRN 1	I am aware of the risks related to using digital banking services.					
AWRN 2	I am aware of the benefits related to using digital banking services.					
AWRN 3	I often seek information about changes in banking regulations and policies.					
AWRN 4	I am aware of the digital security protocols employed by Dashen Bank.					
AWRN 5	I am aware of the cost (Price) relevant to digital banking services.					

	Mobile Banking Service	SD	D	N	A	SA
EOU 1	Dashen Banks mobile banking requires minimal effort to learn how to use it.					
EOU 2	It is straightforward to navigate through Dashen Bank's mobile banking app.					
EOU 3	The features of Dashen Bank's mobile banking app are user-friendly.					
EOU 3	Dashen Bank's mobile banking app instructions are easy to understand.					
EOU 5	Using Dashen Bank's mobile banking app is easy.					
CONV 1	Transactions can be carried out quickly using Dashen Bank's mobile banking.					
CONV 2	Dashen Bank's mobile banking app saves effort in managing my finances.					
CONV 3	Dashen Bank's mobile banking app saves time in managing my finances.					
CONV 4	Dashen Bank's mobile banking offers a wide range of services.					
CONV 5	Dashen Bank's mobile banking provides convenience for banking services.					
PEV 1	Dashen Bank's mobile banking usage improves my banking experience.					
PEV 2	Dashen Bank's mobile banking service offers excellent value for the services provided.					
PEV 3	The benefits of using Dashen Bank's mobile banking outweigh any associated costs or fees					
PEV 4	Dashen Bank's mobile banking services are valuable to me.					
PRU 1	I primarily prefer to conduct transactions using Dashen Bank's mobile banking app.					
PRU 2	Dashen Bank's mobile banking usage reduces transaction time.					
PRU 3	Dashen Bank's mobile banking app is useful.					

	Customer Engagement	SD	D	N	A	SA
CSEG 1	I prioritize engaging with Dashen Bank's digital platforms.					
CSEG 2	I follow Dashen Bank's social media accounts.					
CSEG 3	I often engage with Dashen Bank's digital content through likes, shares, and comments.					
CSEG 4	I maintain my engagement with Dashen Bank's mobile banking app due to its consistent delivery of quality services.					
CSEG 5	I am likely to recommend the bank's services to others.					
CSEG 6	I will likely remain a long-term customer of the Bank in the future.					
CSEG 7	I am likely to use Dashen Bank's mobile banking app frequently in the future.					

Data Collection Confirmation Letter

Memorandum

Reference	:	M/PBDD/031/2024		
Date	:	April 02, 2024		
To	:	Mexico Branch	:	Ghion Branch
	:	Lideta Branch	:	Senga Tera Branch
	:	Commerce Akababi	:	Ghandi Branch
	:	Stadium Branch	:	Amoudi Branch
	:	Balcha Branch		
From	:	Senior Manager, Research and Business Development Department		
Subject	:	**Request for Cooperation to Conduct Research**		

Abenezer Bisrat student from Addis Ababa University who is conducting research entitled "**Analysing the Mediating Effect of Digital Financial Literacy for Mobile Banking Service on Customer Engagement**" in our bank for his study.

As part of the research, he intends to collect/distribute questionnaires and conduct interviews with staff and customers at your esteemed office.

This is to kindly request your office to extend your usual cooperation in availing the required information without compromising the Bank's information disclosure policy.

Best Regards,