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Thesis Title

On

The Effect of Mobile Banking Service Quality on Customer Engagement: The Mediating Role of Customer Satisfaction (A Case Study of Dashen Bank)

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APPROVAL OF THE EXAMINERS

As members of the research board examiners of the final Master of Art /MA/ thesis open defense examination, we certify that we have read and evaluated the thesis prepared by Birhan Dagnachew, entitled "The Effect of Mobile Banking Service Quality on Customer Engagement: The Mediating Role of Digital customer satisfaction (A Case Study of Dashen Bank)" and examined the candidate. We recommend that the thesis be accepted as fulfilling the thesis requirement for the degree of Master of Art/MA/ in the Digital Marketing and E-commerce at Addis Ababa University.

Board of Research Examiners in AAU

External Examiner_____ Signature _____ Date …. /...../2026 G.C

Internal Examiner_____ Signature _____ Date …. /...../2026 G.C

Chair Person _____ Signature _____ Date …. /...../2026 G.C

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DECLARATION

I announce that my thesis, titled “The Effect of Mobile Banking Service Quality and Trust on Customer Engagement: The Mediating Role of Customer Satisfaction (A Case Study of Dashen Bank),” is my original work. I conducted this study independently, with guidance and support from my research advisor, Dr. Getie Andualem (Ph. D.). I have properly acknowledged all other contributors and sources used in this study. Additionally, this study has not been submitted for any Degree or Diploma Program at this or any other institution.

Name: Birhan Dagnachew Signature: _____ Date: _____

APPROVAL OF THE THESIS (by Advisor)

Being the thesis advisor, I attest that I have thoroughly gone through and assessed this thesis authored by Birhan Dagnachew, whom I have been guiding, titled "The Effect of Mobile Banking Service Quality and Trust on Customer Engagement: The Mediating Role of Customer Satisfaction (A Case Study of Dashen Bank)". I have advised that it be turned in to satisfy the thesis requirement for the Master of Digital Marketing and E-commerce degree at Addis Ababa University.

Approved by:

Research Advisor: **Dr. Getie Andualem** (Ph. D.)

Signature: _____

Date: ...../……../ 2026 G.C

ACRONYMS AND ABBREVIATIONS

ATM: Technology Acceptance Model

BoA: Bank of Abyssinia

CLRM: Classical linear regression model

ECT: Expectation–Confirmation Theory

PEOU: Perceived Ease of Use and

PU: Perceived Usefulness

STT: Satisfaction

SPSS: Statistical Package for the Social Sciences

TRT: Trust

TAM: Technology Acceptance Model

VIF: Variance inflation factor

ABSTRACT

The fast move to digital in the banking sector of Ethiopia has made the competition among financial institutions fiercer as they try to attract customers through mobile banking platforms. Even though there has been a lot of investment in digital infrastructure, the real factors that link mobile service quality and customer trust to long-term customer engagement are still not well understood. This research explores the impact of mobile service quality and customer trust on customer engagement, with customer satisfaction acting as a mediator. The research was conducted at Dashen Bank in Addis Ababa, Ethiopia. The study was done using a quantitative research approach with a cross-sectional survey design. A total of 388 mobile banking users were surveyed; they were selected through simple random and stratified sampling methods. We used structured questionnaires (both in English and Amharic) to collect primary data. Reliability testing showed good internal consistency as Cronbach's Alpha values were all above 0.7. Descriptive statistics, Pearson correlation, multiple regression analysis, and mediation analysis using Hayes' PROCESS Macro (v4.1) in SPSS were the methods used to analyze the data. Results show that mobile service quality and customer trust are major factors improving customer satisfaction and customer engagement. Customer satisfaction is also highly correlated with customer engagement. The mediation analysis shows that customer satisfaction is a partial mediator between mobile service quality and customer engagement, and also between customer trust and customer engagement. The results indicate that although service quality and trust directly lead to engagement, their impact is greater when customers are satisfied with their mobile banking experience. This paper adds to the literature by combining service quality trust satisfaction, and engagement into one mediation structure in the Ethiopian banking environment. From a practical perspective, the results indicate that banks should focus on mobile system reliability security responsiveness, and user-friendliness as these are key factors for trust and satisfaction, which in turn lead to customer engagement and competitive advantage.

Keywords: Mobile service quality, Customer trust, Customer satisfaction, Customer engagement.

Chapter 1

Introduction

1.1 Background of the Study

In the contemporary global financial landscape, the proliferation of digital technologies has revolutionized the delivery of banking services, shifting the paradigm from traditional brick-and-mortar models to ubiquitous mobile-first strategies. Globally, mobile banking has emerged as a critical touchpoint for enhancing customer engagement and fostering long-term brand loyalty. Within East Africa and specifically Ethiopia's burgeoning digital economy, initiatives like the government's "Digital Ethiopia 2025" strategy have acted as a catalyst for financial institutions to aggressively innovate their electronic service delivery channels.

However, in a rapidly evolving banking sector, simply providing a mobile application is no longer a competitive advantage. The real challenge for financial institutions lies in transitioning users from casual, transactional usage to deep, sustained **customer engagement**. While global research demonstrates that superior digital service quality drives consumer interaction, the internal mechanisms behind this relationship remain complex. In an emerging market, technical infrastructure deployment often outpaces the relational bonding required for long-term commitment. To maximize marketing ROI and secure consumer retention, banks must look beyond direct technological adoption and explore how core relational elements—specifically **customer trust** and **customer satisfaction**—act as vital psychological conduits that translate technical mobile system quality into active, long-term customer engagement.

1.2 Background of the Industry (Dashen Bank)

The rapid proliferation of digital banking channels has transformed the competitive landscape of the Ethiopian financial sector. To build long-term value, commercial banks must move beyond mere customer acquisition and instead foster deep, sustained customer engagement. Within this

framework, mobile banking service quality and customer trust act as vital precursors to active platform utilization.

However, technical service delivery alone does not automatically translate into behavioral engagement. **Customer Satisfaction** serves as the critical psychological bridge and mediating mechanism in this relationship. When users experience seamless service quality and harbor strong cognitive trust, it culminates in high satisfaction. This satisfaction, in turn, acts as the primary catalyst that drives customers to interact more frequently with the banking platform, utilize advanced features, and exhibit long-term institutional loyalty.

1.3 Statement of the Problem

While commercial banks in Ethiopia, such as Dashen Bank, continue to invest heavily in mobile applications and fintech features, a critical gap remains in understanding how technical performance translates into active user behavior. Extant literature heavily documents the direct impact of service quality on usage intentions, yet frequently overlooks the complex internal mechanisms that sustain long-term customer engagement.

Specifically, there is a distinct empirical gap regarding the structural role of **Customer Satisfaction** as a mediating variable between external platform attributes (service quality and trust) and internal customer outcomes (engagement) within the Ethiopian retail banking context. In a highly competitive market, a lack of user satisfaction can cause customers to become passive users or abandon mobile banking entirely, leading to underutilized IT investments. Without evaluating how satisfaction bridges technical platform performance and deep emotional or behavioral engagement, financial institutions cannot optimize their digital strategies. This study directly addresses this gap by empirically assessing the mediating role of customer satisfaction within Dashen Bank's mobile banking ecosystem.

1.4 Research Questions

1.4.1 Main Research Question

- How do mobile service quality and customer trust influence customer engagement through the mediating role of customer satisfaction?

1.4.2 Sub-Research Questions

- How much can we rely on mobile service quality to predict customer satisfaction?
- How predictive is customer trust of customer satisfaction?
- How strongly does customer satisfaction influence customer engagement?
- Does customer satisfaction significantly mediate the relationship between mobile service quality and customer engagement?
- Does customer satisfaction significantly mediate the relationship between customer trust and customer engagement?
- How does mobile service quality directly affect customer engagement?
- To what degree does customer trust impact customer engagement?

1.5 Research Hypotheses

- H1: Mobile service quality positively impacts customer satisfaction Really.
- H2: The level of trust a customer has will drastically increase the level of satisfaction of the customer.
- H3: If customers are happy with the service, it is likely that they will interact more with the company.
- H4: When customers are happy with the service, it explains how mobile service quality leads to increased customer engagement.
- H5: When customers are happy with the service, it explains how customer trust leads to customer engagement.
- H6: Good mobile service quality directly increases the level of customer engagement.
- H7: One of the biggest factors that increases the level of customer engagement is the amount of trust customers have.

1.6 Definition of Terms

1.6.1 Conceptual Definition

- Mobile Service Quality

  Mobile service quality means the customers' overall judgment of how good and effective mobile services are. This includes aspects like the reliability and responsiveness of the service, the quality of the network, how easy it is to use, and the support service offered by the mobile service provider (Ameen Tarhini Reppel, & Anand, 2021).

- Customer Trust

Customer trust is the confidence a consumer places in the mobile service provider's reliability honesty competence, and ability to deliver services as promised (Sfenrianto, Wijaya, & Wang, 2018).

- Customer Satisfaction

Customer satisfaction can be defined as the degree of the customer's overall happiness level attained from comparing what he expected with what the actual performance and experience of the mobile service (Kotler, Keller, & Chernev, 2022) provided.

- Customer Engagement

  Customer engagement denotes the degree of customers' emotional, cognitive, and behavioral immersions in their relationships with a mobile service provider, like loyalty behaviors advocacy active communication, and through their participation (Lim Rasul Kumar, & Ala, 2022).

1.6.2. Operational Definition

In this study, the variables are operationally defined in the context of Dashen Bank’s mobile banking services.

- **Mobile service quality**: It refers to the level of performance and user experience customers perceive when using Dashen Bank’s mobile banking platforms, such as the Dashen Super App and USSD services. It is measured based on customers’ evaluation of ease of use, reliability of transactions, responsiveness of the system, availability of functions (such as transfers, bill payments, and airtime purchases), and the security of mobile transactions.

- **Customer trust** is operationally defined as the degree to which Dashen Bank customers believe that the bank's mobile banking services are reliable, secure, and capable of performing transactions accurately and honestly. It is measured by customers' perceptions of the bank's ability to protect their personal information and funds, deliver promised services without errors, and maintain consistent and dependable service performance.
- **Customer satisfaction** is the degree to which customers of Dashen Bank's mobile banking are happy with the services rendered after a comparison of their expectations and the actual performance of the service.It is measured through users' satisfaction with transaction speed and accuracy, system availability, ease of access, and their overall experience with the mobile banking service.
- **Customer engagement** refers to the extent to which customers are behaviorally and psychologically involved with Dashen Bank beyond making simple transactions. It is measured by several indicators including how often customers use mobile banking, take part in bank-related activities or promotions, if they are willing to recommend Dashen Bank to others, and their ongoing preference for the bank's mobile services compared to competitors.

1.7 Significance of the Study

- **Practical Significance for Dashen Bank**

As the primary case study, Dashen Bank will directly benefit from the findings. This research identifies which specific service quality dimensions (e.g., Security vs. Ease of Use) are most effective in keeping customers "engaged" on the Amole platform. This allows the bank's marketing department to allocate their budget more effectively toward features that customers actually value, rather than wasting resources on low-impact upgrades.

- **Significance for Policy Makers and Regulators**

One of the aspects pointed out in the research is the function of Digital Financial Literacy as a means of mediation. The findings will act as an instrument for the National Bank of Ethiopia (NBE) and the Ministry of Innovation and Technology to underline the importance of national digital literacy programs. Should the figures demonstrate that literacy acts as a connecting link to

the involvement, it would offer the government a factual ground to put money into digital education for the people of Ethiopia.

- **Academic and Theoretical Significance**

This research is key to the scholarly field as it advances the understanding of a neglected issue related to the literature. Although a lot of research works analyze "Adoption" (i.e. the factors that lead users to initiate the utilization of an application), the Ethiopian setting is rarely represented in the studies on "Engagement" (i.e. factors that contribute to the users' continual usage and commitment to the application). The present research further expands the Technology Acceptance Model (TAM) by including Digital Financial Literacy as a mediator, and Because of this, it represents a significant contribution to the literature when talking about developing economies.

- **Significance for Future Researchers**

This proposal provides a structured methodology and a validated research instrument (the questionnaire) that future students at Addis Ababa University can use. It serves as a benchmark for subsequent studies comparing different banks (e.g., Dashen vs. CBE) or different digital platforms in Ethiopia.

The results of this investigation are expected to offer relevant data about where digital marketing and financial technology meet. The importance of this research is separated into four major aspects:

- **Academic:** Contributes to digital marketing theory and understanding of service influence in emerging markets.
- **Managerial:** Provides insights for Dashen Bank to design effective mobile interfaces and allocate resources efficiently.
- **Societal:** Informs policymakers on promoting financial inclusion through improved digital literacy.

1.8 Scope of the Study

This research targets young users between the ages of 18 to 35 who live in Addis Ababa and are currently using Dashen Bank's mobile banking services." The study does not consider other age groups, non-digital services, or other banks in its scope.

- Geographical Scope; The study only considers the customers of Dashen Bank who are living in Addis Ababa. The reason for choosing this city is the large number of digital banking users and the availability of better network infrastructure.
- Conceptual Scope: The research deals only with Mobile Banking. Other digital channels like ATMs or POS terminals are excluded. It Mainly investigates the link between service quality and engagement considering the element of digital literacy.
- Methodological Scope: The study employs a quantitative method, with a cross-sectional survey as its design. Data collection will be done during the first 4 weeks of 2026.

1.9 Organization of the Paper

This paper is structured into five major chapters. Chapter One sets the stage by introducing the topic, identifying the problems to be addressed, stating the aims of the research and justifying the choice of the study. Chapter Two discusses the relevant literary works both at theoretical and empirical levels and proceeds to the formation of the conceptual structure.Chapter Three details the approach employed in this research like design sampling data collection, and analysis methods. Chapter Four reports and explains the results obtained from Dashen Bank customers. Chapter Five recapitulates the research, the main findings, and finally offers suggestions.

Chapter 2

Literature Review

2.1 Introduction

This chapter rigorously evaluates the theory and data behind mobile banking service quality, digital financial literacy, and customer engagement. Incorporating international and local viewpoints, this chapter not only supports the research model but also pinpoints the mediating factor that sets this study apart from previous works in the Ethiopian banking industry.

2.2 Theoretical Review

The theoretical system of the study is mainly the Theory of Planned Behavior (TPB) by Ajzen (1991). TPB asserts that conaduct or behavior (engagement) is the result of intentions that are determined by attitudes towards the service, social norms, and "perceived behavioral control." In this study, the Digital Financial Literacy is/stands for the behavioral control; the more a user is confident in utilizing the Dashen app, the stronger their intention for engagement will be.

To offer a strong foundation for the thesis, two related theories that explain the direct and indirect relationships between the variables are used.

2.2.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) continues to be the benchmark for studying the adoption of digital services. Per TAM, those who decide to use a technology do so mainly because they find it easy to use and useful (PEOU and PU, respectively). Here, PEOU is translated into the "Service Quality" components of the Dashen Bank app. But a remarkable trend in the literature indicates that TAM by itself is not enough for the markets that are still developing. This paper postulates that for TAM to result in lasting "Engagement," the user needs to have Perceived Behavioral Control which, in this case, is Digital Financial Literacy.

2.2.2 Social Exchange Theory (SET)

While TAM explains the technical side, Social Exchange Theory explains the relational side of engagement. SET suggests that when a bank provides high-value assets (superior service quality), a "reciprocity norm" is triggered. The customer responds to this high-quality service by offering their "Engagement" (loyalty and frequent usage). This study posits that the "quality" of the exchange is filtered through the user's literacy; if the user cannot navigate the service, the exchange value is lost, and engagement fails to materialize.

2.3 Empirical Review: Direct and Indirect Relationships

This section reviews what other researchers have found regarding these variables across different geographic contexts**.**

2.3.1 The Direct Relationship: Service Quality and Customer Engagement

Global Evidence: Research by Shankar and Roy (2022) across international digital banking platforms confirms that "E-Service Quality" is a multidimensional construct. Their findings indicate that Security and Reliability act as "hygiene factors"—if they are missing, engagement drops immediately. Conversely, Ease of Use acts as a "motivator" that drives emotional engagement.

African Evidence: Research in Kenya (Safaricom/M-Pesa) indicates that "Ease of Use" is more important than "Advanced Features" due to varying levels of digital literacy.

Local Evidence: In the Ethiopian context, Negash (2022) found that Dashen Bank's investment in mobile features often faces a "quality-perception gap." While the technical infrastructure is present, customers often perceive the service quality as low if the interface is not intuitive. This study builds on this by testing how specific quality dimensions (Reliability, Security, UI) directly foster a sense of "belonging" or engagement among Addis Ababa's young professionals.

2.3.2 The Indirect Relationship: The Mediating Role of Digital Financial Literacy (DFL)

A more rigorous analysis reveals that the path from service quality to engagement is not always a straight line.

The Knowledge Gap: Sajuyigbe et al. (2025) argue that in developing economies, "Digital Literacy" acts as a critical mediator. Their empirical evidence shows that even when service quality is high, customers with low literacy levels experience "technostress," which leads to avoidance behavior rather than engagement.

The Ethiopian Perspective: Locally, Shamebo (2024) and Abebaw (2026) suggest that Ethiopian bank customers often rely on "assisted usage" (asking others for help). This study justifies the indirect relationship by proposing that high service quality actually teaches the user. A well-designed, high-quality app increases a user's Digital Financial Literacy, and this newfound confidence, in turn, is what truly secures long-term Customer Engagement.

2.4 Conceptual Framework

This study looks at how mobile service quality and customer trust shape customer satisfaction, and how all of these connect to customer engagement with Dashen Bank's mobile banking. Here, mobile service quality and trust both play a direct role in how satisfied customers feel. That satisfaction then feeds into how engaged those customers are, whether that's coming back to use the app, recommending it to others, or just sticking around longer.

So, when customers think the mobile banking service works well and they trust Dashen Bank, they're much more likely to feel satisfied. And that satisfaction doesn't just stop there — it actually boosts how involved or loyal they become. Satisfaction, in this case, acts as a bridge, linking service quality and trust to things like frequent use, loyalty, and word-of-mouth recommendations.

2.4.1 Theoretical Justification for the Paths:

These connections make sense when we look at the big theories in marketing and information systems. They show how service quality and trust feed into satisfaction and keep people engaged.

The link between mobile service quality and customer satisfaction comes straight out of Expectation–Confirmation Theory. Basically, people judge a service by comparing what they

expected to what they actually got. If Dashen Bank's mobile app is fast, reliable, and easy to use—and does what customers hoped for or even better—they feel a lot more satisfied.

SERVQUAL theory backs this up—reliability, responsiveness, and assurance all play a big role in how satisfied customers feel. When service hits these marks, people notice.

Relationship Marketing Theory digs into trust and customer satisfaction. Trust isn't some bonus; it's what keeps relationships going. If customers see Dashen Bank as safe, honest, and reliable with their mobile transactions, they start feeling more confident. That trust naturally turns into greater satisfaction with the service.

The link between customer satisfaction and customer engagement is supported by the Customer Engagement Theory, which suggests that satisfied customers are more likely to develop emotional, cognitive, and behavioral involvement with a service provider. In the context of Dashen Bank, satisfied mobile banking users are more likely to repeatedly use the service, participate in promotions, and recommend the bank to others.

Lastly, mediation of customer satisfaction is supported using Stimulus–Organism–Response (S–O–R) that depicts mobile service quality and trust as stimuli, customer satisfaction as organism (= internal affective condition), and behavioural response; via customer engagement. This elucidates how engagement is indirectly mediated through satisfaction by both service quality and trust.

Table 1: Customer engagement to Dashen bank platform

Variable Type	Variable	Dimensions / Indicators
Independent Variable (IV1)	Mobile Service Quality	Ease of use, Reliability, Responsiveness, Functionality, Security & privacy
Independent Variable (IV2)	Customer Trust	Security perception, Reliability belief, Honesty/transparency, Competence, Confidence in service
Mediating Variable	Customer Satisfaction	Expectation confirmation, Service experience, Transaction satisfaction, Overall satisfaction

Dependent Variable (DV)	Customer Engagement	Usage frequency, Loyalty behavior, Participation/interaction, Word-of-mouth (recommendation), Emotional attachment

Hence, Figure 1 depicts the conceptual framework showing the relationships among the independent variables, mediating variable, and dependent variable. The framework illustrates the paths from mobile service quality to customer engagement (MSQ → CE), customer trust to customer engagement (CT → CE), mobile service quality to customer satisfaction (MSQ → CS), customer trust to customer satisfaction (CT → CS), and the mediating effect of customer satisfaction between mobile service quality and customer engagement (MSQ → CS → CE) as well as between customer trust and customer engagement (CT → CS → CE).

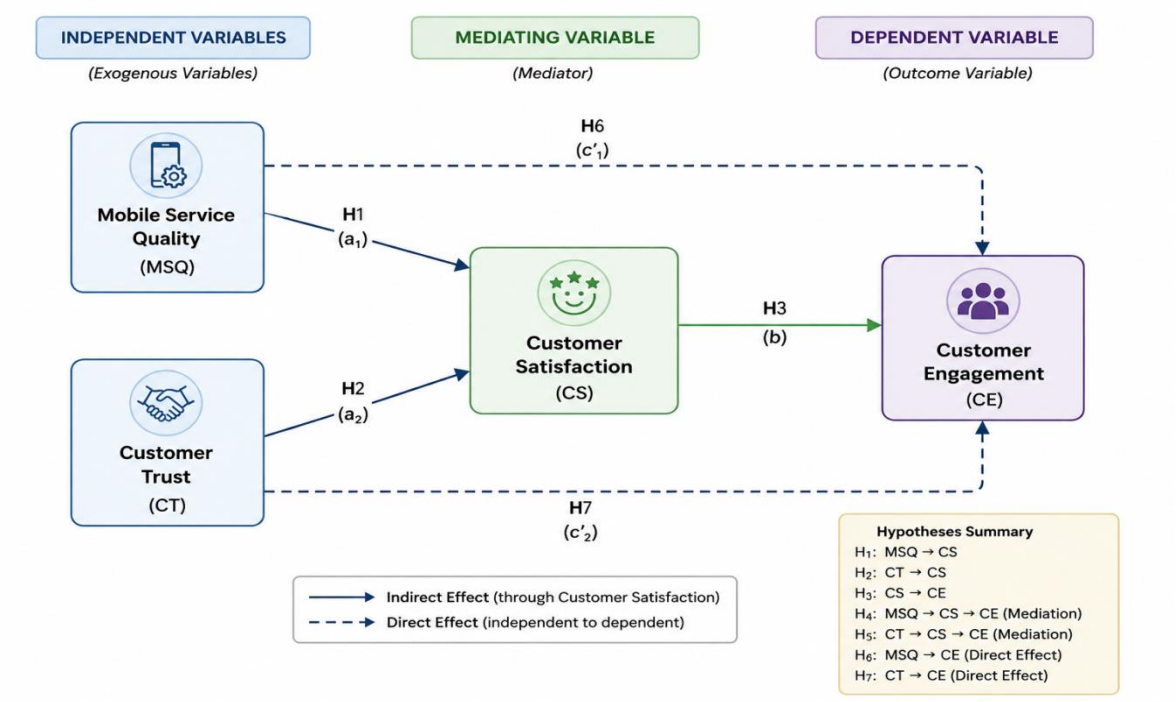


Figure 1: Conceptual Framework of the Study

2.5 Summary and Research Gap

Summary

In the existing literature about mobile banking, mobile service quality and customer trust are considered as main antecedents of a customer-related outcomes such as satisfaction and engagement. Generally speaking, studies indicate that the increase in customer satisfaction is

higher if mobile banking services were perceived as reliable, secured, simple to use and responsive. Like-wise, consumer trust towards financial institutes influences positively customer attitude toward service quality and customer loyalty. Customer satisfaction, moreover, has received much attention as a salient precursor of customer engagement outcomes (e.g. usage behavior, loyalty, word-of-mouth). In sum, existing literature supports the notion that service quality and trust are fundamental antecedents of customer satisfaction and commitment in digital banking contexts.

Research Gap

Though there have been many research made on mobile banking, from the review of literatures, we can find many areas where this work can be extended. Firstly, prior studies did not incorporate mobile service quality and trust as one model explaining their joint effect on customer engagement. Second, there have been few studies that have examined customer satisfaction as a mediator specifically between service quality and trust on one side, and customer engagement consequences on the other. Third, as a case in the Ethiopian banking context —for Dashen Bank and similar institutions— evidence on these relationships are scarce. The great majority of studies available are either done in developing countries other than Ethiopia or conducted in technology and customer behaviour context incompatible with the Ethiopian one making their findings less generalisable to the country. Contribution to Knowledge : Therefore, this study fills gaps in the literature by investigating the integrated impact of mobile service quality and customer trust on customer engagement through customer satisfaction as a mediator under the studies context (Dashen bank).

Chapter 3

Research Design and Methodology

3.1 Introduction

This chapter describes the research methods, total design and analysis methods adopted to study the impact of mobile banking. It further describes the advanced scientific approach employed to collect and analyze data so that the results reliability and repeatability are guaranteed.

3.2 Research Approach

This is a quantitative research study. A quantitative approach fits the purpose of this study as it intends to analyze the relationship between mobile service quality, trust of customers, customer satisfaction, and customer engagement by using numerical data. Besides, it helps the researcher to measure variables in an unbiased way and to carry out statistical analyses to identify the strength and significance of relations among the constructs**.**

And, this approach is compatible with the research philosophy of the study, i.e. positivism which believes that social occurrences can be measured and analyzed through the use of a structured method. So, data will be gathered through a structured questionnaire by employing a Likert scale from Dashen Bank mobile banking customers. Next, the gathered data will be examined through statistical methods such as descriptive statistics and inferential analysis (e.g. regression or SEM) to test the hypotheses and validate the conceptual mod**el.**

As a result, the quantitative approach gives not only objectivity and reliability but also the generalizability of the results in explaining the influence of mobile service quality and customer trust on customer satisfaction and engagement.

3.3 Research Design

The study combines descriptive and explanatory (causal) research designs. Descriptive research mainly describes the features of major variables like mobile service quality, customer trust, customer satisfaction, and customer engagement of the Dashen Bank mobile banking users. But, explanatory research reveals the causal relationships between variables and tests the proposed model. In particular, it examines customer satisfaction as a mediator role.

Since the research aims at determining and explaining the relationships of independent variables (mobile service quality and customer trust) with the mediator (customer satisfaction) and

dependent variable (customer engagement), the explanatory research design works well for this kind of study. It is mainly used to support or reject hypotheses and also to establish the strength and significance levels of relationships through statistical analyses like regression or structural equation modeling (SEM). As stated by Saunders et al. (2019), explanatory research is chosen when one wants to find out about causes among the variables.

In the same way, the descriptive part goes well with the idea of thoroughly recording the things in their natural state without trying to change the variables, which Creswell (2014) also points out. And, Kothari (2004) emphasizes that descriptive research is indispensable to gathering precise and systematic data on existing scenarios, which Really is one of the purposes of assessing customer perceptions in this study.

This way, the use of descriptive and explanatory research designs in tandem makes it possible for this paper to not only characterize the present situation of mobile banking service perceptions at Dashen Bank but also produce an explanation of the interrelations of key variables in not only conceptual but also measurable terms.

3.4 Sampling Design

3.4.1. Source of Data and Data Collection Methods

This research makes use of primary and secondary data sources. Mainly, it collects primary data from Dashen Bank mobile banking customers - the key respondents for the study. The data is utilized towards understanding customer's perceptions of mobile service quality, their trust, satisfaction, and engagement with the bank. But, secondary data is used mainly for supporting the literature review, theories, and discussions. The sources of secondary data are journals books published articles, bank reports, and other relevant academic studies.

Primary data collection revolves around the use of a structured questionnaire as the main instrument. A five-point Likert scale ranging from strongly disagree to strongly agree is used in designing the questionnaire. This scale brings the respondents with an opportunity to rate their level of agreement/disagreement with the statements on different study variables. The questionnaire, to facilitate respondents' comprehension and smooth answering, is sectioned based on the main constructs of the study.

This way of data collecting has been chosen due to its advantage of enabling the researcher to collect large amounts of information within a short period of time. Also, because of the identical nature of the questions asked, the answers are more likely to exhibit higher reliability, which is very important when statistical analysis such as regression or structural equation modeling is to be carried out.

3.4.2. Target Population

The sample of this research is mobile banking clients of Dashen Bank living in Addis Ababa who have actively used their service. Dashen Bank's Digital Banking Department recently declared that there are thousands of registered users of the Amole and Dashen Mobile applications. It is impossible to cover the whole population; So, the study selects only those who have used the app at least once within three months as they will be able to tell their experience with the quality of service.

3.4.3. Sampling Frame

The sampling frame is the actual list from which the sample is drawn. Here, the sampling frame is the database of the customers registered in the selected "Grade A" city branches of Dashen Bank in Addis Ababa. This selection is based on In reality these branches have the highest number of digital-savvy customers, This way giving a representative cross-section of the bank's mobile users.

3.4.4. Sampling Technique

This research used a non-probability sampling approach. This means that the researchers chose the respondents from Dashen Bank mobile banking users without dictating the exact size of the target population or using a random number generator. It was basically a mix of purposive and convenience sampling.

The purposive sampling came first as it determined which branches of Dashen Bank that are in Addis Ababa to be sampled. These branches were selected from their being top in digital and mobile banking transactions. The branches chosen had a higher number of active mobile banking users, so they were suitable and information-rich sites for the study.

Within the chosen branches, the convenience sampling technique was used to select respondents as who was available and willing to take part. Customers who came to the selected branches during the data collection period were approached and asked to fill the questionnaire. Besides, digital invitations were sent out via the bank's mobile application community platforms to reach active users efficiently.

Since non-probability sampling was used, the findings are unlikely to be generalizable. But, the combination of approaches made sure that the respondents were first, the right people as study

objectives, and second, the actual users of the Dashen Bank mobile banking services. So, the collected data were valid.

3.4.5 Sample Size Determination

To make certain that the study results are statistically representative, the number of participants was calculated by applying the Yamane (1967) formula, a popular one when the population size is large and known. The equation is written as:

$$n = N/(1 + N(e)^2$$

Where:

- n = required sample size
- N = total population
- e = margin of error

In this study, the total population of Dashen Bank mobile banking users of the selected branch was greater than 10,000. The margin of error (e) was set at 0.05 (5%), corresponding to a 95% confidence level. When the population size is large (N > 10,000), the formula yields an approximate sample size of 400 respondents.

To compensate for possible non-responses, incomplete questionnaires, or invalid responses, a total of 400 questionnaires were distributed. This adjustment helped ensure that the final usable responses met the minimum required sample size for reliable statistical analysis.

3.4.6 Sampling Procedure

The researcher followed a systematic procedure to collect the required data from Dashen Bank mobile banking users. First, four major Dashen Bank branches in Addis Ababa—namely the Main Branch, Casanchis, Bole, and Arat Kilo—were identified based on their high volume of digital banking transactions. These branches were selected to ensure access to a sufficient number of active mobile banking customers.

Second, customers were approached in the digital banking service areas of the selected branches, and digital survey links were also distributed to potential respondents through appropriate mobile banking communication channels. Third, respondents were screened to confirm that they were active users of the Dashen Mobile App, ensuring that only relevant participants were included in the study. Finally, the questionnaires were distributed to eligible participants, and a brief explanation regarding the academic purpose of the study was provided to encourage informed and voluntary participation.

3.5 Measurements of Variable

3.5.1. Measurement of independent variables

In this research, the independent factors are mobile service quality and customer trust. These factors were evaluated by structured questionnaire items which were taken from the earlier empirical studies and changed based on the context of Dashen Bank's mobile banking services. The instrument contained 20 measurement items in total, out of which 10 items represented the independent variables. The response for all the items was given on a 5-point Likert scale 1 = Strongly Disagree 5 = Strongly Agree.

3.5.2. Measurement of the Dependent Variable

The dependent variable in this study is customer engagement. Customer engagement was evaluated through a structured questionnaire with items that were derived from literature and then modified to the specific context of mobile banking services at Dashen Bank. Five out of the total 20 questionnaire items were intended to measure customer engagement. All the items were using a five-point Likert scale, from 1=Strongly Disagree to 5=Strongly Agree.

3.6. Pre-Testing Procedures (Validity and Reliability Test)

Before the main data collection, researchers conducted a pre-test (pilot study) to verify the validity and reliability of the research instrument. The questionnaire was first given to a small group of about 30 Dashen Bank mobile banking users who were not part of the final sample. The point of the pre-test was to evaluate the clearness relevance wording, and structuring of the questionnaire items, as well as to discover the areas of ambiguities or misunderstanding.

The items in the questionnaire were critically examined by academic experts and research advisors to ensure content validity. The experts confirmed that the items were representative of the constructs of mobile service quality, customer trust, customer satisfaction, and customer engagement. Their responses were utilized to strengthen the clarity and appropriateness of the measurement items.

To validate the constructs, factor analysis was carried out to check that the items corresponded well to their respective constructs. Items with insufficient factor loadings were either modified or eliminated to enhance the measurement model.

Cronbach's Alpha coefficient was employed to measure reliability by examining the internal consistency of the items within each construct. A Cronbach's Alpha value of 0.70 or above was considered satisfactory, which indicated good reliability. All constructs during the pilot test achieved a minimum reliability level which confirmed that the instrument was appropriate for the primary data collection.

Utilizing the results of the pre-test, the questionnaire's clarity and consistency were enhanced through slight revisions before it was distributed to the complete sample.

3.7. Methods of Data Analysis

The collected data were analyzed using both descriptive and inferential statistical techniques with the aid of statistical software like SPSS. The data were first coded, entered, and cleaned to check for missing values, outliers, and errors in data entry before analysis.

Initially, descriptive statistics like frequency percentage mean, and standard deviation were employed Basically the respondents' demographic features and to illustrate the central tendencies

of the variables under study (mobile service quality, customer trust, customer satisfaction, and customer engagement).

After that, Cronbach's Alpha reliability test was performed to examine the internal consistency of the measurement items. Factor analysis was also carried out to confirm the validity of the constructs and to check that the items were loading properly on their respective variables.

Next, inferential statistical methods were used to test the research hypotheses and to explore the relationships between variables. Correlation analysis was done to establish the magnitude and direction of relationships between variables. Either multiple regression analysis or Structural Equation Modeling (SEM) was used to test the direct impact of mobile service quality and customer trust on customer satisfaction, as well as the impact of customer satisfaction on customer engagement.

Lastly, mediation analysis was carried out to check if customer satisfaction acted as a mediator between the independent variables and customer engagement. The level of statistical significance was set at 95% confidence level ($p < 0.05$).

These analytical approaches gave the researcher an opportunity to make accurate inferences based on the proposed conceptual model and hypotheses.

3.8. Ethical Considerations

Ethical considerations form a key part of this research to safeguard participants' rights and uphold the highest standards of academic integrity. The researcher remains committed to following the ethical codes set by Addis Ababa University without any compromise. These ethical principles will act as a compass for the study during the entire research period:

3.8.1 Informed Consent

Before they can take part, each participant will be given a straightforward and detailed account of what the research is about, what we hope to achieve, and that it is a scholarly work. Plus the questionnaire, at the very beginning, an Informed Consent Form (please see Appendix E) will be provided. The participants will also be told that it is up to them whether or not to participate, and

that, should they choose to, they can stop or leave the survey at any time without any kind of penalty.

3.8.2 Anonymity and Confidentiality

In order to protect Dashen Bank's customers' privacy, what comes next policies will be used:

- Anonymity: The bank will not gather personal identifiers like names, phone numbers, account numbers, or addresses. Instead, a unique code number will be assigned to each questionnaire only for data entry and analysis.
- Confidentiality: The gathered data will be kept in a secure place and protected by a password. The data will be accessible only to the researcher and the academic advisor. The raw data will not be disclosed to any third party, including the management of Dashen Bank. The information will be used only for academic purposes.

3.8.3 Integrity and Honesty

Academic honesty and integrity is the researcher's main priority. Research data won't be manipulated, fabricated, or selectively choosing only those supportive of research hypothesis. All discoveries, even if unexpected or statistically non-significant (e.g. SPSS) are communicated openly in the final dissertation. Any methodological constraints faced during the study are also plainly stated.

3.8.4 Respect for the Organization

Since this research is a case study on Dashen Bank, a formal cooperation letter will be procured from Addis Ababa University to seek the authorization of the bank's management officially. The research results should be tactfully showing to help in the improvement of the bank's digital marketing strategy while making sure that no proprietary, confidential or competitively sensitive information is revealed.

Chapter 4

Data Presentation Analysis and Discussion

4.1. Introduction

In this chapter, the data obtained from mobile banking customers of Dashen Bank are presented, analyzed, and discussed based on the objectives of the study. The chapter first presents the response rate and demographic characteristics of the respondents, then it offers descriptive statistics of the main variables: mobile service quality, customer trust, customer satisfaction, and customer engagement. Besides, it displays the reliability and validity test results to confirm the adequacy of the measurement instruments as well as correlation and regression (or SEM) analysis to investigate the relationships and test hypotheses. At last, the results are compared with relevant theories and empirical studies to interpret how mobile service quality and customer trust impact customer satisfaction and customer engagement in the Dashen Bank context.

4.2. Response Rate

In total, 400 questionnaire forms were distributed for the data collection from Dashen Bank mobile banking customers. 384 questionnaires were returned, 4 were not returned, and 12 were rejected due to incomplete or inconsistent responses. The valid response rate was 384 usable questionnaires, which is statistically sufficient and also meets the minimum sample size requirement of the study. The high rate of response indicates the reliability of the data collected and its appropriateness for further analysis and interpretation.

4.3. Descriptive Analysis

The descriptive analysis depicts that, on average, participants have a positive view of all the main variables. The factors of mobile service quality, customer trust, customer satisfaction, and customer engagement are the major variables in the model of mobile banking services. Per the

analysis, the ease of use, reliability, and security of mobile service are highly rated aspects. The level of customer trust is high too, which shows that there is still a great degree of confidence in the mobile banking services of Dashen Bank. Also, looks like customers are very satisfied with the services provided as their satisfaction scores have been on the high side which implies that their experiences with the SHARE have been good. In addition, there is a strong indication that the customers are not only frequent users of the service but they are also ready to recommend it to others which is supported by their engagement levels. All in all, the findings demonstrate that there is overall harmony and positivity in the way all the variables of the study have been assessed.

4.3.1 Demographic Information of the Respondent

As indicated in Table 2 Demographic profile of respondents reveals that among the entire 384 respondents, 205 (53.4%) were males and 179 (46.6%) were females. This means that males slightly outnumbered the female respondents in the sample. The gender distribution looks quite balanced, so results will fairly represent views of male and female users of Dashen Bank mobile banking service.

Table 2: Gender distribution of respondents

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	179	46.6	46.6	46.6
	Male	205	53.4	53.4	100.0
	Total	384	100.0	100.0	

Source: researcher's computation, 20226

According to Table 3, the largest segment of the respondents, 245 (63.8%), are in the 25-40 years age bracket, which implies that most Dashen Bank mobile banking users are young and economically active people. Next to them are those under 25 years who make up 62 (16.1%). The 40-55 age group brings together 45 (11.7%) respondents whereas persons aged 55 and above make up 32 (8.3%). Altogether, these results mean that the mobile banking services of Dashen Bank are mainly utilized by the younger and middle-aged customers.

Table 3: Age Distribution of Respondents

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 25	62	16.1	16.1	16.1
	25–40	245	63.8	63.8	79.9
	40–55	45	11.7	11.7	91.7
	55 and above	32	8.3	8.3	100.0
	Total	384	100.0	100.0	

Source: researcher's computation, 20226

Out of the total 384 respondents, the majority (40.6%) hold a Bachelor's Degree, indicating that most participants are well-educated and likely possess sufficient academic background to understand the survey content. Diploma holders constitute 21.4%, followed by those with Master's degree and above at 14.1%, showing a considerable proportion of highly qualified respondents. Secondary school graduates account for 16.7%, while only 7.3% have primary-level education. This distribution suggests that the study sample is largely composed of educated individuals, which enhances the reliability and validity of the responses provided.

Table 4: Education Level Distribution of Respondents

Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary	28	7.3	7.3	7.3
	Secondary	64	16.7	16.7	24.0
	Diploma	82	21.4	21.4	45.3
	Bachelor's Degree	156	40.6	40.6	85.9
	Master's and above	54	14.1	14.1	100.0
	Total	384	100.0	100.0	

Source: researcher's computation, 20226

Out of the 384 respondents, the majority (32.3%) are engaged in trade-related businesses, followed closely by private sector businesses (30.7%). Governmental institutions account for 18.8% of the respondents, while nongovernmental organizations represent 12.0%. A small proportion (6.2%) fall under other business categories. This distribution indicates that most respondents are involved in profit-oriented sectors, particularly trade and private enterprises, suggesting that the study largely reflects perspectives from Dashenly active participants. The presence of governmental and nongovernmental organizations also ensures diversity in institutional representation.

Table 5: Business Distribution of Respondents

Business					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Governmental	72	18.8	18.8	18.8
	Trade	124	32.3	32.3	51.0
	Nongovernmental	46	12.0	12.0	63.0
	Private	118	30.7	30.7	93.8
	Other	24	6.3	6.3	100.0
	Total	384	100.0	100.0	

4.4 Inferential Analysis

This chapter reveals first of all the outcomes of multiple regression analysis about the influence of Mobile Service Quality on Customer Engagement, the role of Customer Trust and Customer Satisfaction as a mediators of the relationship among the customers of selected branches of Dashen Bank in Addis Ababa. Before the analysis, multicollinearity and normality tests were conducted to check the assumptions of regression. The results showed that the assumptions were fulfilled. The mobile service quality and customer trust majorly affects customer engagement, directly and indirectly through customer satisfaction, the findings disclosed.

4.4.1 Correlation Analysis

This part explored the correlations between the different dependent and independent variables to support the proposed hypothesis (hypotheses). One way to find out the degree to which the variables are related is through the correlation coefficient. This number indicates both how strong the relationship is and the direction of the relationship between two random variables. Besides being called the Pearson Correlation Coefficient, it can vary from -1 (indicating a perfect negative correlation) to +1 (indicating a perfect positive correlation) (R-value). Simply put, the closer the correlation coefficient value is to -1, the stronger is a negative linear correlation. When it comes to 0, it means there is no linear correlation. A value between 0 and +1 means that the two variables are positively linearly correlated.

According to Andy (2006), correlation values less than 0.1 are categorized as weak while values in the range of 0.30 to 0.50 are considered as moderate and those over 0.50 are taken to show strong relationships. The criteria outlined in Table 6 were the basis for strength of relationship assessment in this research. As all the variables were at interval level measurement, a Pearson correlation test was carried out to understand the association between the independent variables, Mobile Service Quality and customer trust, the mediating variables, Customer Satisfaction, and the dependent variable, Customer Engagement.

The outcomes from correlation analysis (Table 6) confirmed that all study variables were positively interrelated at a significance level of 99 percent ($p < 0.01$). Results More exactly pointed out that mobile service quality had an extremely strong positive correlation with customer trust ($r = 0.833$), a strong positive correlation with customer engagement ($r = 0.704$) as well as customer satisfaction ($r = 0.725$). However, customer trust had a reasonably strong positive correlation with customer engagement ($r = 0.572$) with customer satisfaction ($r = 0.580$). In addition, customer satisfaction exhibited a moderately positive correlation with customer engagement ($r = 0.451$). In essence, the results imply that increases in mobile service quality and customer trust are linked to elevated levels of both customer satisfaction and customer engagement.

Table 6: Pearson Correlation analysis between continuous variables

Correlations					
		MSQ	CT	CS	CE
MSQ	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	384			
CT	Pearson Correlation	.833**	1		
	Sig. (2-tailed)	.000			
	N	384	384		
CS	Pearson Correlation	.725**	.580**	1	
	Sig. (2-tailed)	.000	.000		
	N	384	384	384	
CE	Pearson Correlation	.704**	.572**	.451**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	384	384	384	384
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: researcher's computation, 2026

4.5 Multiple Linear Regression Analysis

4.5.1 Assumptions of Regression Analysis

The primary focus of this study was to check the validity of the Classical Linear Regression Model CLRM assumptions before proceeding to data analysis with SPSS methods. This step was crucial to detecting any potential data misspecification problems and also to guaranteeing the integrity and correctness of the research outcomes. So, the assumptions of normal distribution linearity heteroscedasticity, and multicollinearity were tested. Since the research used the Ordinary Least Squares OLS linear regression model, it was taken for granted that the parameters were linear by nature. The main goal of the model was to estimate the size and the sign of the association between the dependent and the independent variables. So, fulfilling the basic requirements of the CLRM is very important if one needs to keep the reliability and validity of the regression results. As stated by Hair et al. (2022), conforming to regression assumptions is one of the ways to be sure that the fitted model gives trustworthy, unbiased, and efficient results for statistical inference and hypothesis testing.

4.5.1.1 Normality Test

One of the Classical Linear Regression Model (CLRM) assumptions is that the residuals from the model should follow a normal distribution. Hair et al. (2022) point out that having a normal distribution is crucial for it to be possible to carry out statistical inference and hypothesis testing in regression. Even if the error terms are not normally distributed, Ordinary Least Squares (OLS) estimators are still unbiased and efficient. Also, with a large enough sample size, the estimators can be treated as normally distributed due to the Central Limit Theorem.

Normality is a bell-shaped symmetrical distribution with the highest concentration of values around the mean and lesser at the extremes (Pallant, 2020). In this research, the sample size was large enough so the residuals were treated as normally distributed. Besides that, the DurbinWatson statistic number was 2.032, which is within the range of 1.5 to 2.5 considered acceptable, Because of this, there is no significant autocorrelation issue in the model. Because of this, the normality requirement for the regression analysis was assumed to be met.

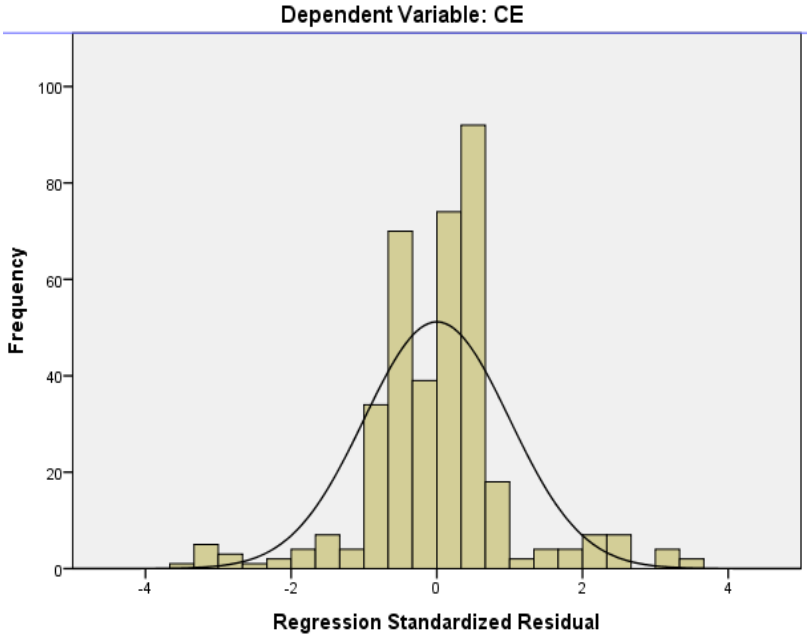


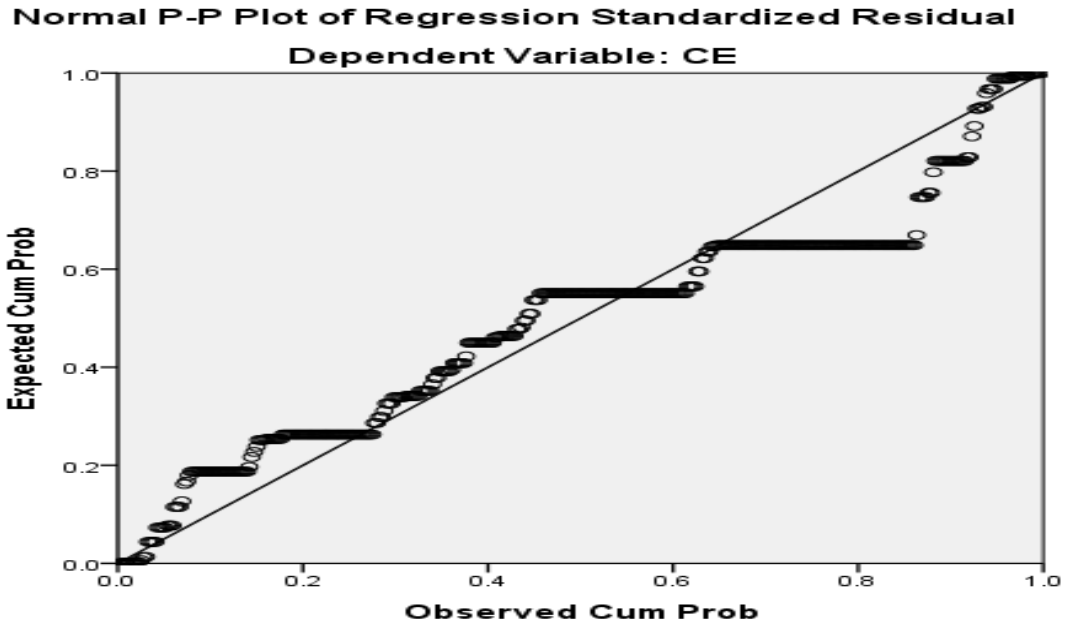
Figure 2: Frequency Distribution histogram with a normal curve to check the normality assumption of linear regression.

Source: researcher's computation, 2026

4.5.1.2 Linearity Test

The linearity assumption of the Classical Linear Regression Model (CLRM) requires a linear relationship between the dependent and independent variables in the population regression function. Gujarati (2004) explains that linearity refers to linearity in parameters rather than variables, while Hair et al. (2022) emphasize that the dependent variable should change proportionally with changes in predictors, holding other factors constant. Violation of this assumption may lead to model misspecification and biased or inefficient estimates. Linearity is typically assessed using scatterplots and residual plots to identify whether the relationship follows a straight-line pattern, as suggested by Pallant (2020). Brooks (2008) further notes that although OLS estimators may remain unbiased under certain conditions, non-linearity can affect the validity of inference and prediction, making the assumption important for reliable regression analysis.

The linearity test results indicated a statistically significant linear relationship ($p = 0.000$); however, the significant deviation from linearity ($p = 0.007$) suggests that the relationship is not perfectly linear and may include some degree of non-linearity. Therefore, caution is required when interpreting the linear regression results.



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Figure 3: Normal point plot of standardized residual

Source: researcher’s computation, 2026

4.5.1.3 Test for Homoscedasticity assumption

The homoscedasticity assumption in the Classical Linear Regression Model (CLRM) means that the disturbance term's probability distribution does not change for different observations; more simply, the variance of the error terms is the same everywhere. If the assumption is true, the model is homoscedastic. On the contrary, when the error terms' variance varies, this situation is called heteroscedasticity (Bedru and Seid, 2005), i.e. non-constant or non-homogeneous variance.

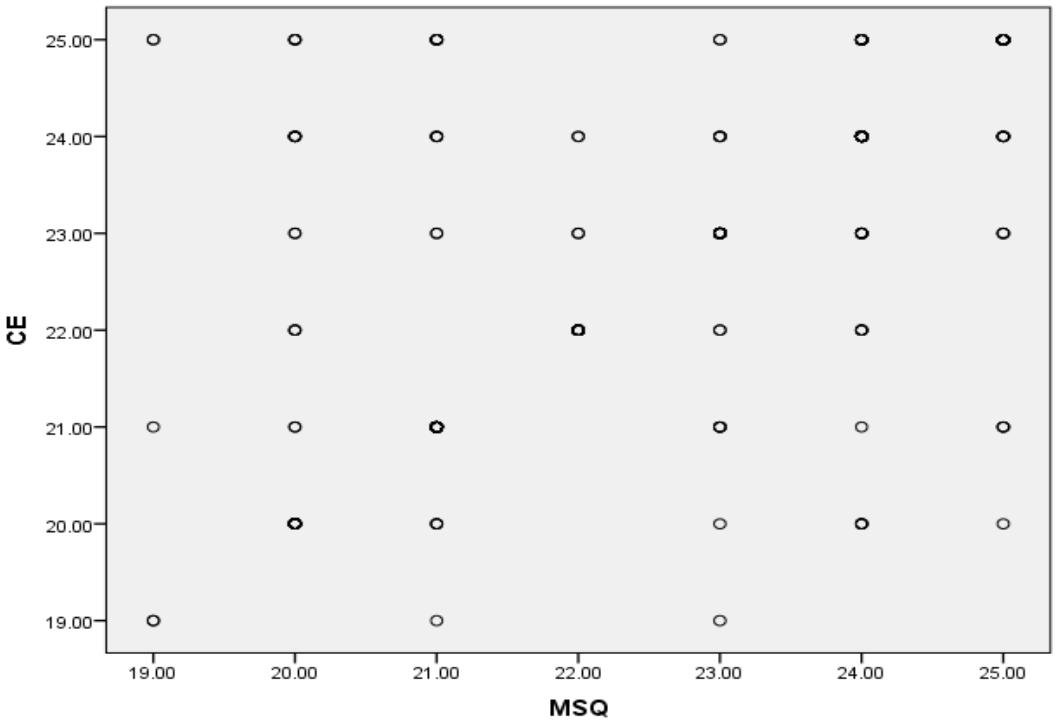


Figure 4: Scatter plot variables

Source: researcher’s computation, 2026

The homoscedasticity assumption was checked by plotting standardized residuals against standardized predicted values, field (2023) method. Figure 4 shows that points are randomly scattered without any funnel-shaped pattern or systematic ups and downs in spread. So, this

suggests there are no signs of heteroscedasticity in the data, and the homoscedasticity assumption is met (Hair et al. 2022).

4.5.1.4. Multicollinearity Test

Multi-collinearity is a problem that arises when there is a strong correlation, though not perfect, among two or more explanatory variables (Cameron and Trivedi, 2009), (Wooldridge, 2006). As noted by (Churchill et al. 2005), the presence of multicollinearity means less information is available about how explanatory variables influence the dependent variable. This assumption addresses the nature of interrelations among explanatory variables. For example, if one independent variable is exactly a linear combination of the others, the situation is referred to as perfect collinearity, and the model cannot be solved by OLS Brooks (2008). So, many explanatory variables might end up looking like they have no association with the dependent variables. Actually, multiple regressions would hardly act as an analysis tool if the researcher neglected to think about any correlations among the independent variables. The variance inflation factor (VIF) and tolerance are diagnostic tools used for the detection of multicollinearity among the independent variables. The presence of multicollinearity is indicated if the VIF for one or several independent variables is Quite a bit large. Per (Murray et al. 2012), a variable becomes highly collinear if its VIF is greater than ten or its tolerance is less than or equal to 0.1. Since no independent variable within the regression model holds a VIF higher than ten and tolerance values are less than 0.1, multicollinearity is not an issue.

The tolerance and variance inflation factor (VIF) scores for each variable were computed from the collinearity statistics and their values are shown in Table 7.

Table 7: Collinearity Statistics

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.146	.864		9.426	.000		
	MSQ	.821	.075	.845	10.912	.000	.218	4.597

	CT	.054	.061	.058	.888	.375	.304	3.287
	CS	.115	.047	.128	2.434	.015	.473	2.114
a. Dependent Variable: CE								

Source: researcher's computation, 2026

4.5.2 Regression Analysis

Using IBM SPSS Statistics multiple regression analysis was aimed at exploring the role of the independent variables in the dependent variable. To put it another way, the research was focused on the direct methods by which Mobile Service Quality (MSQ) and Customer Trust (CT) would increase Customer Engagement (CE), as well as indirect methods via a Customer Satisfaction (CS) mediator, in the first place.

Accessing the regression analysis, among other things, the Ordinary Least Squares (OLS) model necessities like checking normality linearity homoscedasticity, and multicollinearity were the tasks undertaken. The findings showed that the data conformed to the important assumptions of the Classical Linear Regression Model (CLRM) So it could be confidently said that the dataset was appropriate for regression analysis. Actually, Hair et al. (2022) stated that verifying if the assumptions have been met is a prerequisite for getting unbiased, efficient, and valid regression results.

In this research, a regression model was employed to estimate the size and direction of the relationships between variables. The coefficients (values), significance levels (p-values), R-square and adjusted R-square, in this study, were the main statistical tools responsible for assessing the predictive power and the significance of the model. As pointed out by Gujarati (2004), regression analysis is one of the key methods used to study how dependent variables change when independent variables are changed in both ways and sizes.

In general, the regression analysis results using the data from the study titled "Predictive Associations between Variables" gives us the direction and strength of the relationships among variables under study. It also forms the basis for the hypothesis test performed in this study. That means, the work of the overall regression model and the regression coefficient analysis are summarized in this research.

4.5.2.1 Model Summary

The strong positive correlation between the independent variables and the dependent variable is indicated by the correlation coefficient (R = 0.705) in Table 8. Besides, the coefficient of determination (R = 0.496) signifies that 49.6% of the variation in the dependent variable can be attributed to the independent variables in the model, and the remaining 50.4% can be attributed to other factors not included in the study. This means that the model has a fair level of explanatory power regarding the dependent variable

Table 8: Model Summary

Model Summary[b]									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.705[a]	.496	.494	1.26470	.496	187.730	2	381	.000
a. Predictors: (Constant), CT, MSQ									
b. Dependent Variable: CE									

Source: researcher's computation, 2026

4.5.2.2. ANOVA (Analysis of Variance)

The Analysis of Variance (ANOVA) in regression is a statistical technique used to test the overall significance of the model by examining whether the independent variables, as a group, significantly explain the variation in the dependent variable. In the context of regression analysis, ANOVA compares the amount of explained variation (regression sum of squares) with the unexplained variation (residual sum of squares) to determine whether the model provides a better fit than a model with no predictors. According to Hair et al. (2022), the ANOVA F-test is essential because it assesses the joint significance of all predictors in the model, thereby confirming whether the regression model is statistically meaningful. Similarly, Gujarati (2004) notes that the F-statistic in ANOVA is a key indicator used to test the overall validity of the regression equation. Therefore, a significant ANOVA result indicates that the model is suitable for further interpretation and hypothesis testing.

Table 9: ANOVA test (Analysis of variance)

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	600.537	2	300.268	187.730	.000[b]
	Residual	609.398	381	1.599		
	Total	1209.935	383			
a. Dependent Variable: CE						
b. Predictors: (Constant), CT, MSQ						

Source: researcher's computation, 2026

In this study, the ANOVA results from IBM SPSS Statistics showed that the regression model is statistically significant ($F = 187.730$, $p < 0.001$), indicating that the independent variables jointly have a significant effect on the dependent variable. The high F-value reflects strong model explanatory power, while the residual sum of squares (609.398) represents the unexplained variation in the dependent variable. Overall, the results confirm that the regression model is appropriate for further analysis and hypothesis testing.

4.5.2.3 Regression Coefficient Analysis of the Model

Regression Coefficient analysis shows the relationship between independent variables and dependent variables. Mean that, a positive regression coefficient indicates an increase in the value of the dependent variable as the independent variable increases by a unit. Whereas, a negative regression coefficient depicts the magnitude of reduction in the dependent variable when there is a unit increment in the independent variable. Here, from the standardized coefficient in Table 10, a one-unit increase in X_1 (mobile service quality) and X_2 (customer trust), have a 0.723, and 0.045 unit increment in customer engagement in Dashen bank of Ethiopia through mobile banking Addis Ababa city. The value for regression weights could be inferred to further assess the effect of customer engagement components or dimensions (i.e. mobile service quality and customer trust) on customer loyalty by using the following model. Where, X_1 and X_2 are the four independent variables.

$$Y = \beta_o + \beta_1 X_1 + \beta_o X_2 + \varepsilon$$

Where: β0 = the intercept (constant)

β1 = the regression coefficient for variable 1 (X_1).

β2 = the regression coefficient for variable 2 (X_2).

ε = error (residual) value

Y is the dependent variable (customer loyalty)

The regression model is fitted as follows.

$$Customer\ Engagement = \beta_o\ +\ \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Table 10: Regression Coefficient Analysis of the Model

Coefficients[a]										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	7.553	.834		9.051	.000	5.912	9.194		
	MSQ	.723	.064	.744	11.310	.000	.597	.849	.305	3.273
	CT	.045	.061	.048	.729	.466	.165	.076	.305	3.273
a. Dependent Variable: CE										

Source: researcher's computation, 2026

Thus, all coefficients show that explanatory variables have a positive relationship with the dependent variable. Meaning that any incremental change in these variables leads to an increase in firm performance.

4.6. Mediation analysis

A mediator variable explains the how or why of an (observed) relationship between an independent variable and its dependent variable. A variable may mediate the relationship between the independent and dependent variables fully or partially. Full mediation is when the entire relationship between the independent & dependent variables is through the mediator variable. When the mediator is taken away, the relationship disappears. Partial mediation happens when the mediating variable is only responsible for a part of the relationship between independent & dependent variables. If the mediating variable is eliminated, there will still be a relationship between the independent and dependent variables; it just won't be as strong.

In this study, the mediation model was fitted using a regression package called PROCESS macro v4.2 developed by Andrew F. Hayes for SPSS. PROCESS is an observed variable OLS and logistic regression pathu7 analysis modeling tool.

Baron and Kenny (1986), Judd and Kenny (1981), and James and Brett (1984) outlined the following steps to identify the meditational hypothesis. If the steps are met, then variable M is said to completely mediate the X-Y relationship. The steps are

1. Show that the independent variable (X) is correlated with the mediator (M).
2. Demonstrate that the dependent variable (Y) and M are correlated.
3. Demonstrate full mediation on the process. The effect of X on Y, controlling for M should be zero. If the results for this step are anything but zero, then there is partial mediation (Mediator Variable / Mediating Variable: Simple Definition - Statistics How To)

4.6.1. The mediating role of Customer satisfaction between Mobile Service Quality and customer engagement

As shown below in Table 11, that mobile service quality has a strong and significant effect on customer satisfaction ($R = 0.7246$, $R^2 = 0.5251$, $F = 422.3506$, $p < 0.001$). This implies that 52.51% of the variation in customer satisfaction is explained by mobile service quality. The coefficient result further shows that mobile service quality has a significant positive effect on customer satisfaction ($B = 0.7803$, $t = 20.5512$, $p < 0.001$), with a confidence interval that does not include zero (LLCI = 0.7056, ULCI = 0.8549). According to Hair et al. (2022), this confirms that mobile service quality is a strong predictor of customer satisfaction.

Table 11: The regression model for the relationship between Mobile Service Quality (independent variable) scores and customer satisfaction (mediator) scores

CS

Model Summary

R	R-sq	MSE	F	df1	df2	p
.7246	.5251	1.8466	422.3506	1.0000	382.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	4.9007	.8757	5.5963	.0000	3.1789	6.6226
MSQ	.7803	.0380	20.5512	.0000	.7056	.8549

Source: researcher's computation, 2026

The mediation analysis conducted using SPSS PROCESS macro indicates that the regression model is statistically significant ($R = 0.7093$, $R^2 = 0.5030$, $F = 192.8329$, $p < 0.001$), explaining 50.3% of the variation in customer engagement. The results show that mobile service quality has a strong and significant direct effect on customer engagement ($B = 0.7722$, $p < 0.001$), while customer satisfaction also has a positive and significant effect on customer engagement ($B = 0.1127$, $p = 0.0177$). Furthermore, the indirect effect of mobile service quality on customer engagement through customer satisfaction is significant (Effect = 0.0880, BootLLCI = 0.0550, BootULCI = 0.1311), confirming that customer satisfaction mediates this relationship. Since both the direct and indirect effects are significant, the results indicate a partial mediation effect. The effect of Mobile Service Quality is still significant after controlling the effect of the mediator (customer satisfaction) and increases in magnitude. Therefore, customer satisfaction is a partial mediator of the relationship between mobile service quality and customer engagement. The direct and indirect effects of the independent variable are presented in Tables 12 and 13.

Table 12: The effect of mobile service quality controlling the effect of customer satisfaction.

R	R-sq	MSE	F	df1	df2	p
.7093	.5030	1.5782	192.8329	2.0000	381.0000	.0000
Model						
	coeff	se	t	p	LLCI	ULCI
constant	7.9745	.8421	9.4698	.0000	6.3188	9.6303
MSQ	.7722	.0509	15.1605	.0000	.6720	.8723
CS	.1127	.0473	2.3832	.0177	.0197	.2057

Source: researcher's computation, 2026

Table 13: Direct and indirect effect of mobile service quality on customer engagement

Direct effect of X on Y

Effect	se	t	P	LLCI	ULCI
.7722	.0509	15.1605	.0000	.6720	.8723
Indirect effect (s) of X on Y					
	coeff				
constant	Effect	BootSE	BootLLCI	BootULCI	
CS	.0880	.0194	. 0550	. 1311	

Source: researcher's computation, 2026

4.6.2. The mediating role of customer satisfaction between customer trust and customer engagement

As shown below in Table 14, that customer trust has a strong and significant effect on customer satisfaction ($R = 0.5795$, $R^2 = 0.3358$, $F = 193.16$, $p < 0.001$). This implies that 33.58% of the variation in customer satisfaction is explained by customer trust. The coefficient result further shows that customer trust has a significant positive effect on customer satisfaction ($B = 0.5958$, $t = 13.8981$, $p < 0.001$), with a confidence interval that does not include zero (LLCI = 0.5115, ULCI = 0.6801). According to Hair et al. (2022), this confirms that customer trust is a strong predictor of customer satisfaction.

Table 14: The relationship between customer trust and customer satisfaction

CS
Model Summary

R	R-sq	MSE	F	df1	df2	p
.5795	.3358	2.5824	193.1564	1.0000	382.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	9.1352	.9896	9.2314	.0000	7.1895	11.0809
CT	.5958	.0429	13.8981	.0000	.5115	.6801

Source: researcher's computation, 2026

The mediation analysis conducted using SPSS PROCESS macro indicates that the regression model is statistically significant ($R = 0.5905$, $R^2 = 0.3487$, $F = 101.9805$, $p < 0.001$), explaining 34.87% of the variation in customer engagement. The results show that customer trust has a strong and significant direct effect on customer engagement ($B = 0.4342$, $p < 0.001$), while customer satisfaction also has a positive and significant effect on customer engagement ($B = 0.1622$, $p = 0.0004$). Furthermore, the indirect effect of customer trust on customer engagement through customer satisfaction is significant (Effect = 0.0966, BootLLCI = 0.0372, BootULCI = 0.1698), confirming that customer satisfaction mediates this relationship. Since both the direct and indirect effects are significant, the results indicate a partial mediation effect. The effect of customer trust is still significant after controlling the effect of the mediator (customer satisfaction) and increases in magnitude. Therefore, customer satisfaction is a partial mediator of

the relationship between customer trust and customer engagement. The direct and indirect effects of the independent variable are presented in Tables 15 and 16.

Table 15: The effect of customer trust controlling the effect of customer satisfaction**.**

R	R-sq	MSE	F	df1	df2	p
.5905	.3487	2.0684	101.9805	2.0000	381.0000	.0000
Model						
	coeff	se	t	p	LLCI	ULCI
constant	9.4613	.9794	9.6599	.0000	7.5355	11.3871
CT	.4342	.0471	9.2232	.0000	.3417	.5268
CS	.1622	.0458	3.5413	.0004	.0721	.2522

Source: researcher's computation, 2026

Table 16: Direct and indirect effect of customer trust on customer engagement

Direct effect of X on Y

Effect	se	t	P	LLCI	ULCI
.4342	.0471	9.2232	.0000	.3417	.5268
Indirect effect (s) of X on Y					
	coeff				
constant	Effect	BootSE	BootLLCI	BootULCI	
CS	.0966	.0346	.0372	.1698	

Source: researcher's computation, 2026

4.7 Test of Hypothesis

The preceding sections presented the overall results of the study. Thus, this section discusses in detail analyses of the results for each independent variable and their effect on customer engagement by the above regression result. In addition, the discussion analyzes the statistical findings of the study to the previous empirical evidence.

4.7.1. Summary of Hypotheses Testing

In this study linear regression was used to test the research hypotheses. Table 4.17 shows the summarized results of the hypotheses tested.

Table 17: Summary of hypotheses tested

Hypothesis	Alternative Hypothesis	Beta (***B***) or Effect	Sig. Value (***P***)	Decision
H1	Mobile service quality has a significant influence on customer engagement	0.7722	P<0.0001	hypothesis accepted
H2	Customer trust has a significant influence on customer engagement.	0.4342	P<0.0001	hypothesis accepted
H3	Mobile service quality has a significant impact on customer satisfaction.	0.7803	P<0.0001	hypothesis accepted
H4	Customer trust has a significant impact on customer satisfaction.	0.5958	P<0.0001	hypothesis accepted
H5	Customer satisfaction mediates the relationship between mobile service quality and customer engagement.	0.0880	P<0.0001	hypothesis accepted
H6	Customer satisfaction mediates the relationship between customer trust and customer engagement.	0.0966	P<0.0001	hypothesis accepted

Hypothesis 1: Mobile service quality has a positive and statistically significant effect on customer engagement. The results of Multiple Regression, as presented in above Table 12, discloses that mobile service quality has a positive and significant corollary to customer engagement with β= 0.7722, at a 99.999% confidence level (P<0.0001). The Beta value (β= 0.7722) shows that if there is a one-unit increase in mobile service quality, there will be a 0.7722-unit increase in customer engagement. Therefore, the researcher has accepted the hypothesis. This implies that mobile service quality has a positive and statistically significant effect on customer engagement.

Hypothesis 2: Customer trust positively affects customer engagement. The results of Multiple Regression, as presented in above Table 16, states that customer trust has a positive and significant effect on customer engagement with β= 0.4342, at a 99.999% confidence level (P<0.0001). The Beta value (β= 0.4342) shows that if there is a one-unit increase in customer trust, there will be a 0.4342-unit increase in customer engagement. Therefore, the researcher has accepted the hypothesis. This implies that customer trust has a positive and statistically significant relationship with customer engagement.

Hypothesis 3: Mobile service quality has a relationship with customer satisfaction. The results of Multiple Regression, as presented in above Table 11, discloses that mobile service quality has a relationship with customer satisfaction with β= 0.7803, at 99.99% confidence level (P<0.0001). The Beta value (β= 0.7803) shows that if there is a one-unit increase in mobile service quality, then there will be 0.7803 units increase in customer satisfaction. Therefore, the researcher has accepted the hypothesis. This implies that mobile service quality has positively related to customer satisfaction.

Hypothesis 4: Customer trust has a relationship with customer satisfaction. As it has been shown in above Table 15, the results of Multiple Regression states that customer satisfaction has a relationship with customer engagement with β= 0.5958, at a 95% confidence level (P<0.05). The Beta value (β= 0.5958) shows that if there is a one-unit increase in customer trust, then there will be a 0.5958 units increase in customer satisfaction. Therefore, the researcher has accepted the hypothesis. This implies that Customer trust has a relationship with customer satisfaction.

.**Hypothesis 5:** Customer satisfaction mediates the relationship between mobile service quality and customer engagement. After controlling for the effect of customer satisfaction, a unit increase in mobile service quality score results in a 0.0880 (effect=0.0880, 99.999%) improvement in customer engagement.. Therefore, customer satisfaction partially mediates the relationship between mobile service quality and customer engagement.

Hypothesis 6: Customer satisfaction mediates the relationship between customer trust and customer engagement. After controlling the effect of satisfaction, customer satisfaction has a positive effect on customer engagement. A unit increase in customer trust score increases the customer engagement score by 0.0966 (Effect = 0.0966, 99.999%). This implies that

satisfaction has a partial mediating effect on the relationship between customer trust and customer engagement.

Chapter 5

Summary, Conclusion, and Recommendations

5.1 Introduction

In this chapter summary, conclusions and recommendations of the research findings that have been analyzed and discussed in the previous chapter were briefly presented.

5.2 Summary

The primary objective of this study was to investigate the effect of mobile banking on customer engagement through the mediating role of customer satisfaction: the case of Dashen Bank in Addis Ababa. Maintaining effective and efficient mobile banking services is essential for improving customer engagement and achieving organizational objectives. In this study, a quantitative research approach was employed along with simple random and stratified random sampling techniques. The target population of the study consisted of customers of Dashen Bank branches located in Addis Ababa. Both primary and secondary data sources were utilized. English and Amharic versions of the questionnaire were prepared based on the research objectives. A total of 400 questionnaires were distributed to respondents. Out of these, 396 questionnaires were completed and returned, representing a response rate of 99%. However, during data analysis, 12 questionnaires were rejected due to incomplete responses. Therefore, 384 valid responses were used for the final analysis, resulting in an effective response rate of 96%.

All questionnaire items were found to be reliable and acceptable, with Cronbach's Alpha values greater than 0.7. In the descriptive analysis, the results revealed that 342 (88.1%) of the respondents were male. The majority of the respondents were young and middle-aged, particularly between 26–35 years old, accounting for 40.7% of the total respondents. In terms of educational background, 250 (64.4%) respondents had secondary-level education.

Furthermore, Pearson correlation analysis shows that, at a 95 percent confidence level, all of the independent variables are positively and significantly correlated with the mediating variable

as well as the dependent variable.

Findings from the multiple regression analysis of the two explanatory variables depict that, the model tested is significant ($p<0.05$). The R square (R^2) = 0.496 in this study indicates that the two independent variables entered into the regression account for 49.6% of the variance in customer engagement. In one unit change, the independent variable has a relation with an increased dependent variable customer engagement. These findings are significant at a 5% level of precision. Generally, all the independent variables affect customer engagement. Moreover, customer satisfaction partially mediates the relationship between the dimensions of mobile banking and customer engagement.

5.3 Conclusion

The researcher draws the following conclusions based on the following findings. Mobile service quality and customer trust are among the mobile banking variable factors with mediating role of customer satisfaction on customer engagement in the Dashen Bank of Ethiopia in Addis Ababa city under consideration. So, mobile banking is critical to the improvement of customer handling and, consequently, the effectiveness of customer engagement. A long-term relationship with Banks is a pillar to sustaining a competitive business environment by mitigating customer engagement to meet the Bank's objectives.

Descriptive and inferential statically tools were used to specifically address the central debate of the research. So far, the predictor's attributes of mobile banking had been analyzed in the study on whether or not they have a direct two-tailed effect on customer engagement. The mean and SD for each item in each variable were checked and measured for the principal designed questionnaires for both independent and dependent variables.

Inferentially, the problem of the study was also projected by testing the multiple correlation coefficients (Pearson's correlation coefficient) and multiple regression analysis. Concerning this, the pre-test assumptions like normality, linearity, and collinearity had been checked for better output of regression analysis. Based on the analysis, the two dimensions of CSR were moderately related to customer engagement. Mediated regression analyses were carried out using Hayes's process macro v4.1 within the SPSS.

The results obtained illustrate that mobile banking activities that were carried out by Dashen banks positively affect customer engagement. This is consistent with the theory of many academicians which had been mentioned in the literature part of this paper. Additionally, it was found that customer satisfaction partially mediates the relationship between mobile banking dimensions and customer engagement. Therefore, mobile banking initiatives had a positive impact on customer satisfaction, which in turn had a positive impact on customer engagement.

5.4 Recommendations

Based on the major findings and the conclusion drawn, the researcher forwarded the following basic recommendations. Mobile service quality is the best dimension of industries' corporate social responsibilities in firm performance. As a result, the Dashen Bank of Ethiopia must strengthen its mobile banking activities by developing a mobile banking strategic plan and regularly supervising and monitoring the functionality. In this regard, it should create a reward system that can inspire or motivate customers to improve their engagement. Banks should be aware of their mobile service quality and customer trust to sustain customer engagement. Mobile service quality and customer trust have a positive and significant effect on customer engagement. As a result, through organizational research and development, the Banks should have strengthened mobile service quality, which can increase mobile banking and career development and make societies more satisfied. Thus, it enables banks to achieve their objectives successfully.

Banks must investigate community issues and concerns and respond with financial or other assistance to improve their customer engagement. Finally, it is suggested that the Bank continue to focus on the areas where it excels and look for ways to improve these areas by soliciting community feedback and encouraging open and honest feedback that allows communities to support Banks and motivate their support in the community in a more effective manner than before.

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Appendix A: Questioner

QUESTIONNAIRE

Title: The Effect of Mobile Banking Service Quality on Customer Engagement.

Dear Respondent,

You are cordially invited to participate in an academic research study conducted as part of a Master's degree program. The purpose of this study is to assess the impact of digital service quality—particularly mobile banking services—on customer engagement.

All information you provide will be used strictly for academic purposes and will be kept confidential. Your participation is entirely voluntary, and you may choose not to answer any question if you prefer. There are no right or wrong answers; we are interested only in your genuine opinions and experiences with mobile banking services in your business activities.

The questionnaire will take approximately 10–15 minutes to complete. Your thoughtful and honest responses will make a meaningful contribution to this research.

Thank you very much for your valuable time and participation.

Section I: Demographic Information

Please tick (✔) the appropriate option.

1. **Gender:**
   - ☐ Male
   - ☐ Female
2. **Age Group:**
   - ☐ Below 25
   - ☐ 25–40
   - ☐ 40–55
   - ☐ 55 and above
3. **Educational Level:**
   - ☐ Primary
   - ☐ Secondary
   - ☐ Diploma
   - ☐ Bachelor's Degree
   - ☐ Master's and above
4. **Type of Business:**
   - ☐ Governmental
   - ☐ Trade
   - ☐ Nongovernmental
   - ☐ Private
   - ☐ Other (specify): _____

PART-II: Main Research Questions

Instructions: Please indicate your level of agreement with each statement by ticking (✔) the appropriate option. Scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree and 5 = Strongly Agree

A. Mobile Service Quality (Independent variable1)

No	Statement	1	2	3	4	5
MSQ1	The mobile banking application is easy to use and navigate.					
MSQ2	The mobile banking service performs transactions quickly.					
MSQ3	The mobile banking application operates reliably without technical problems.					
MSQ4	The mobile banking system ensures the security of my personal and financial information.					
MSQ5	The information provided by the mobile banking service is accurate and clear.					

B. Customer Trust (Independent variable 2)

No	Statement	1	2	3	4	5
DFL1	I trust this mobile banking service to handle my transactions properly.					
DFL2	I believe this mobile banking service is dependable.					
DFL3	I feel confident that this mobile banking service protects my financial interests.					
DFL4	This mobile banking provider is honest in its dealings with customers.					
DFL5	I feel safe conducting financial transactions through this mobile banking service.					

C. Customer Satisfaction (Mediating Variable)

No	Statement	1	2	3	4	5
CS1	I am satisfied with the overall performance of the mobile banking service.					
CS2	The mobile banking service meets my expectations.					
CS3	My experience with the mobile banking service has been pleasant.					
CS4	I am satisfied with the speed and convenience of the mobile banking service.					
CS5	Choosing this mobile banking service was a wise decision.					

D. Customer Engagement (Dependent Variable)

No	Statement	1	2	3	4	5
CE1	I frequently use this mobile banking service for my transactions.					
CE2	I intend to continue using this mobile banking service in the future.					
CE3	I would recommend this mobile banking service to others.					
CE4	I feel positively connected to this mobile banking service.					
CE5	I am interested in exploring new features offered by this mobile banking application.					