

M. HUDU

THE ROLE OF CHATBOTS IN ENHANCING CUSTOMER EXPERIENCE IN
FIRST BANK, LAGOS, NIGERIA.

THE GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
OF
ATILIM UNIVERSITY



MUSA HUDU

A MASTER OF SCIENCE THESIS
IN
THE DEPARTMENT OF COMPUTER ENGINEERING

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A THESIS SUBMITTED TO
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Approval of the Graduate School of Natural and Applied Sciences, Atilim University.

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ABSTRACT

THE ROLE OF CHATBOTS IN ENHANCING CUSTOMER EXPERIENCE IN FIRST BANK, LAGOS, NIGERIA

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This study examines the impact of Fibani, First Bank Lagos' chatbot, on customer experience using the Technology Acceptance Model (TAM). Key factors analyzed include Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Chatbot Trust (CT), Customer Satisfaction (CS), and Intention to Use. A survey of 400 customers was conducted using a 30-item questionnaire rated on a 5-point Likert scale. Data analysis in SPSS (Version 26) employed descriptive statistics, correlation, and regression. Results show that PU, PEOU, and CT significantly influence CS ($r = 0.75$, $p < .01$), with CT ($\beta = 0.35$, $p < .001$) as the strongest predictor. Findings suggest Fibani enhances customer experience but needs improvements in accuracy, security, and personalization.

Keywords: Chatbot adoption, customer experience, digital banking, Technology Acceptance Model (TAM), chatbot trust, customer satisfaction, First Bank Lagos.

ÖZ

FIRST BANK, LAGOS, NİJERYA'DA MÜŞTERİ DENEYİMİNİ GELİŞTİRMEDE SOHBET ROBOTLARININ ROLÜ

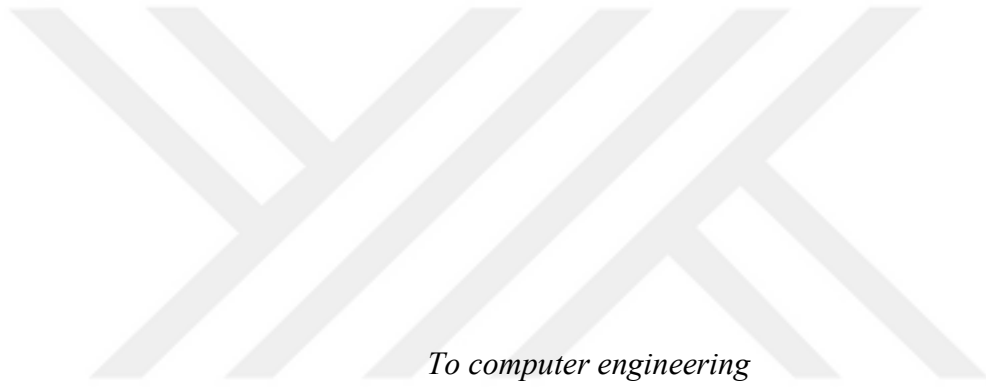
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Bu çalışma, First Bank Lagos'un sohbet robotu Fibani'nin Müşteri Deneyimi üzerindeki etkisini Teknoloji Kabul Modeli (TAM) kullanarak incelemektedir. Analiz edilen temel faktörler arasında Algılanan Kullanışlılık (PU), Algılanan Kullanım Kolaylığı (PEOU), Chatbot Güveni (CT), Müşteri Memnuniyeti (CS) ve Kullanım Niyeti yer alır. 400 müşteri ile yapılan bir anket, 5'li Likert ölçeğinde derecelendirilen 30 maddelik bir anket kullanılarak gerçekleştirilmiştir. SPSS'de (Versiyon 26) veri analizinde tanımlayıcı istatistikler, korelasyon ve regresyon kullanılmıştır. Sonuçlar, PU, PEOU ve BT'nin CS'yi önemli ölçüde etkilediğini ($r = 0.75, p < .01$) ve BT'nin ($\beta = 0.35, p < .001$) en güçlü öngörücü olduğunu göstermektedir. Bulgular, Fibani'nin müşteri deneyimini geliştirdiğini ancak doğruluk, güvenlik ve kişiselleştirme konularında iyileştirmelere ihtiyaç duyduğunu gösteriyor.

Anahtar Kelimeler: Chatbot benimseme, müşteri deneyimi, dijital bankacılık, Teknoloji Kabul Modeli (TAM), chatbot güveni, müşteri memnuniyeti, First Bank Lagos.



To computer engineering

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LIST OF ACRONYMS/ABBREVIATIONS

AI	Artificial Intelligence
AR	Augmented Reality
CBN	Central Bank of Nigeria
CS	Customer Satisfaction
CT	Chatbot Trust
ECT	Expectation-Confirmation Theory
EFA	Exploratory Factor Analysis
FBN	First Bank of Nigeria
ML	Machine Learning
NLP	Natural Language Processing
NLU	Natural Language Understanding
NLG	Natural Language Generation
PEOU	Perceived Ease of Use
PU	Perceived Usefulness
SERVQUAL	Service Quality Model
SME	Small and Medium Enterprises
SPSS	Statistical Package for the Social Sciences
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
VR	Virtual Reality

CHAPTER 1

1. INTRODUCTION

1.1 Background of the Study

The evolution of customer service in the banking industry has seen significant advances in recent years, particularly with the advent of artificial intelligence and chatbots. First Bank of Nigeria, headquartered in Lagos, has integrated chatbots into its customer service channels, aiming to enhance the overall customer experience. The importance of the electronic banking system in any country can never be over emphasized, due to the dramatic transformation in technological advancements that is being experienced by the global financial industry [1]. As the oldest bank in Nigeria (and the first bank in West Africa), FBN comes second with a satisfaction rate of 68%. While also developing a strong digital presence, FBN continues to rely on an extensive branch network to serve its customers. Today, the banking industry has moved into an era of menu-driven ultra robust specialized software programmes called banking applications which includes the banking chatbots for customers. These applications can carry out virtually all banking functions relying heavily on information collection, storage, transfer and processing [2]. Generally, the automation of banks makes transaction and data processing very easily accessible for quick decision making. The main benefit from the bank customers' point of view is significant saving of time by the automation of banking services processing and introduction of easy maintenance tools for managing customers' money. Traditionally, the Nigerian customer service delivery in the bank is one that mostly involves face-to-face contact with bank employees [3]. Through this means, banks aspire to build customer service teams to deliver the utmost customer service to bank users [4]. However, critics have argued that this has not yet yielded better customer satisfaction outcomes [4]. Consequently, it is still noticeable to observe very long queues in banking halls whereby customers are provided with various services and advice in turns [5]. Hence, the inclusion of

chatbots for customers use by First Bank, Nigeria and other electronic measures that will assist to better the services of her customers.

Chatbots are AI-driven software applications designed to simulate human conversations, offering real-time responses to customer inquiries. Unlike traditional customer service channels that rely heavily on human agents, chatbots use natural language processing (NLP) and machine learning algorithms to understand customer queries and provide relevant answers. AI systems like chatbots are only as effective as their implementation and the specific contexts in which they are used [6]. This study aims to fill this research gap by evaluating the effectiveness of First Bank's chatbots in Lagos, a major economic hub where customer expectations are particularly high. In the face of increasing competition and the rise of digital banking, customer experience has become a critical differentiator in the Nigerian banking sector. First Bank, Lagos, as a frontrunner in adopting technological advancements, introduced chatbots to provide immediate responses to routine customer inquiries, including balance checks, transaction statuses, and frequently asked questions. Customer satisfaction is the foundation for any organization to achieve its objective. In other words, the degree of customer satisfaction reflects the rate of achievement of organizational objectives. Customers that are satisfied tend to create favorable and friendly relationships with the organization [7]. Though, the adoption of artificial intelligence (AI) in the banking system has brought major challenges to the banking industry in terms of risk exposure. The volume of deposits has increased as well as the fraudulent practices experienced by Nigerian banks since its adoption in the economy. Another challenge is the ability to adapt global technology to local requirements [8], the ability to strengthen public support for e-finance, the ability to keep the confidentiality, integrity and authentication of the institution [9]. First Bank's chatbots are integrated into various customer touchpoints, including the bank's website, mobile apps, and social media platforms like WhatsApp, Facebook Messenger, and Telegram. First Bank's chatbots, such as "FirstChat," serve as digital customer assistants, capable of handling a wide range of banking activities. They can: provide real-time updates on account balances and transaction histories, assist with fund transfers, bill payments, and airtime purchases, guide customers through the process of opening new accounts or resolving

issues, offer information on current loan rates, account types, and other financial products, assist with blocking lost or stolen cards, a critical feature in an era of heightened digital fraud risks. The 24/7 availability of these chatbots has made banking more convenient, especially for customers who need immediate assistance after business hours or during busy periods when human agents may not be readily available.

One of the most significant impacts of First Bank's chatbots is their ability to reduce the time customers spend waiting for assistance. With the chatbots capable of handling thousands of queries simultaneously, customers no longer need to endure lengthy hold times, especially for routine tasks like checking their account balance or confirming recent transactions. This improvement in response time enhances customer satisfaction and builds trust in the bank's services. In a city as dynamic as Lagos, where time is a scarce resource, traditional banking hours can sometimes be a limitation for customers, particularly those with tight schedules or urgent banking needs outside regular hours. First Bank's chatbots operate around the clock, providing assistance regardless of the time of day. This round-the-clock availability significantly improves the customer experience, especially for customers in different time zones or those needing immediate help in cases like a card theft. By automating routine interactions, First Bank's chatbots reduce the workload on human agents, allowing them to focus on more complex and high-value customer interactions. This shift not only improves operational efficiency for the bank but also lowers the overall cost of customer service. The savings from these efficiencies are often reinvested into improving banking products and services, further enhancing customer satisfaction. Leveraging AI and data analytics, First Bank's chatbots can provide personalized experiences based on a customer's transaction history, behavior, and preferences. For instance, the chatbot can recommend suitable savings plans or loan offers based on a customer's spending habits or suggest budgeting tips based on previous transactions. This level of personalization helps create a more engaging customer experience, making the chatbot feel less robotic and more like a virtual financial advisor. This paper investigates the role of chatbots in First Bank's customer service, focusing on response efficiency, problem resolution, and overall customer satisfaction in Lagos, Nigeria.

First Bank integrated its chatbot services into multiple platforms, including its mobile banking app, the official website, and popular messaging apps like WhatsApp and Facebook. With the role that Mobile Banking has played in the modernization of the banking sector, especially in terms of development of new banking products and the payments systems, as well as strategic management in the emerging market economics, there is no doubt that the future of the Nigerian banking industry will be technology driven [10]. The performance of the banking sector is measured not only by the number and variety of services provided but also, more importantly by the speed, efficiency and safety with which these services are provided. Chatbots, driven by artificial intelligence (AI) and natural language processing (NLP), allow banks to provide 24/7 support, thereby reducing pressure on customer service representatives. However, there is little empirical evidence on the effectiveness of these tools in the Nigerian context. In the majority of customer satisfaction literature, satisfaction has been measured based on the suitability of a banking service or product and its ability to meet the needs of the customer [11]. Customer satisfaction could be measured using customers' perception of service efficiency, value, and convenience [12].

However, Customers' satisfaction holds the potential for increasing an organization's customer base, increasing the use of a more volatile customer mix and increasing the firm's reputation. Consequently, obtaining competitive advantage is secured through intelligent identification and satisfaction of customer's needs better and sooner than competitors and sustenance of customer's satisfaction through better products/services. Technology is then essential in providing faster and more efficient services to customers. Technology acquisition must be based on actual needs and the proven ability to deliver customer friendly solutions. But with globalization, Nigerian banks have no choice but to adopt artificial intelligence (AI) in banking services to enhance effective service delivery that transcends to customers.

Despite the many benefits, the use of chatbots in banking is not without challenges. Some customers, especially those less familiar with technology, may find it difficult to navigate chatbot interfaces, especially for more complex queries that require human-

like reasoning. Additionally, while AI technology is advancing rapidly, chatbots can sometimes struggle with understanding nuanced language or context, leading to incorrect responses. These issues can frustrate customers and reduce the overall effectiveness of the service. To mitigate these challenges, First Bank has invested in improving the AI capabilities of its chatbots, focusing on enhancing their language understanding and response accuracy. First Bank's integration of chatbots into its customer service operations has had a profound impact on improving the overall customer experience. From faster query resolution to personalized service and enhanced security, chatbots have become an essential part of the bank's digital transformation strategy. While there are still areas for improvement, particularly in handling more complex customer inquiries, the benefits of AI-powered chatbots are clear. As First Bank continues to refine its chatbot technology, customers can expect even more seamless, personalized, and secure banking experiences in the future.

While there are still some limitations, such as the chatbot's capacity to handle complex queries, ongoing improvements in AI and machine learning are likely to bridge these gaps. As the bank continues to innovate in the digital space, chatbots will play a pivotal role in shaping the future of customer experience in Nigeria's banking sector.

1.2 Theoretical Framework

This research is grounded in theories that solidifies the study:

1.2.1 Chatbots, Banking and Consumers

The implementation of chatbot technology is evolving rapidly in the banking industry, the post covid-19 era inclusively played a major role in technological banking. According to McKinsey (2020), the COVID-19 pandemic has led to rapid shift to digital technologies and banks have transitioned to remote sales and provision at a fast pace. One very popular and impactful form of technological development in the financial sector is the implementation of the AI-based chatbot technology [14]. Technological developments have transformed the way consumers and financial institutions interact with each other. The rise of artificial intelligence (AI) based technology is contributing extensively to this transformation as more and more banks

have begun to implement AI-based applications with the aim of deepening customer relationships, providing more personalized offers, detecting and preventing fraud, improving processes for anti-money laundering, and cost saving.

The application of innovations in the banking industry such as internet banking and Mobile banking, is widely studied and although the studies provide an essential contribution to technology adoption in banking, there is limited knowledge on the acceptance of banking chatbots. In order to extend the knowledge regarding chatbot acceptance in banking, the chatbot relationship to banking has to be investigated to determine chatbot adoption in the banking industry.

According to forecast, the chatbot market size is projected to reach 102.29 billion USD by 2025 (24), and the success rate of bot interactions (queries completed without the interference of a human operator) in the banking sector is expected to be over 90% by 2022 (24). Chatbot is an AI operation that communicates with users and performs basic tasks through chat or speech interfaces. In order for both banks and consumers to exploit the advantages of the banking chatbot technology, it is important for consumers to adopt this technology wholeheartedly.

1.2.2 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis in 1989, posits that perceived usefulness and perceived ease of use are fundamental determinants of users' behavioral intention to adopt technology. In the context of First Bank Lagos, chatbots represent a significant technological innovation aimed at enhancing customer service. In the context of First Bank Lagos, chatbots can enhance customer service by providing quick responses and facilitating transactions, thereby increasing perceived usefulness. Additionally, if users find the chatbot interface intuitive, it positively influences their acceptance. The model suggests that effective communication about chatbot capabilities can further enhance user adoption by addressing concerns about ease of use and usefulness. The model is particularly relevant in evaluating the use of chatbots in various applications, including customer service, education, and e-commerce. TAM suggests that two primary factors—perceived usefulness and

perceived ease of use—influence users' attitudes toward adopting a new technology and their subsequent behavior.

TAM is grounded in the Theory of Reasoned Action (TRA), which posits that individual attitudes and subjective norms drive behavioral intentions. TAM adapts this framework to technology by focusing on how user perceptions influence their decision to accept or reject a technological tool. Recent research has extended TAM by incorporating factors like perceived compatibility and privacy concerns. For instance, awareness of chatbot capabilities can enhance perceived ease of use and usefulness, while privacy risks may deter usage intentions [15]. According to TAM, these perceptions shape users' attitudes towards using technology, which ultimately influences their behavioral intentions and actual usage behavior. In the context of First Bank's chatbot services, customers' acceptance can be analyzed through these dimensions. First Bank, chatbots are integrated into their digital services to facilitate customer interactions. The effectiveness of these chatbots can be evaluated through TAM by examining; Perceived Usefulness (PU) and Perceived Ease of Use (PEOU):

1.2.2.1 Perceived Usefulness

This refers to the degree to which using the chatbot is perceived to improve banking efficiency. Studies indicate that when customers believe chatbots can facilitate transactions and provide timely information, their intention to use the technology increases [15]. Perceived Usefulness: Customers may find chatbots beneficial for performing tasks such as checking account balances, transferring funds, or obtaining information about banking products. If users perceive these tasks as being accomplished more efficiently via chatbots compared to traditional methods, their acceptance is likely to increase. Users are more likely to accept chatbots when they perceive them as useful in achieving specific goals, such as improving efficiency or saving time. For instance: Customer support; Chatbots can provide real-time answers to frequently asked questions, reducing wait times and enhancing user satisfaction [16] and E-Commerce; AI-powered chatbots assist in product recommendations, thereby improving the shopping experience and increasing conversion rates [17].

However, PU can be hindered if chatbots fail to meet user expectations, such as providing irrelevant answers or failing to understand complex queries. Ensuring chatbot utility through advanced natural language processing (NLP) and context-aware responses is critical.

1.2.2.2 Perceived Ease of Use

The design of the chatbot interface plays a crucial role. A user-friendly interface that allows seamless interaction can enhance perceived ease of use. Conversely, if customers encounter difficulties or complexities while using the chatbot, it may lead to frustration and reduced acceptance. Ease of use is a significant determinant of chatbot acceptance, particularly for users with limited technical skills. A chatbot with a simple, conversational interface increases the likelihood of adoption. Key aspects of PEOU include: **Interface Design:** Chatbots with intuitive designs and straightforward interactions reduce cognitive load and foster positive user experiences [18]. **Error Handling:** Chatbots that can gracefully handle user errors and provide clear guidance improve perceived ease of use. & **Language Flexibility:** Multilingual capabilities make chatbots accessible to diverse user groups, addressing concerns about usability. This aspect emphasizes how user-friendly the chatbot interface is. If customers find it easy to navigate and interact with the chatbot, their likelihood of adoption rises [19]. It is the degree to which an individual believes that using the technology will be free of effort. In chatbot interactions, this includes intuitive interfaces, clear communication, and seamless navigation without requiring technical expertise

1.2.3 Expectation-Confirmation Theory (ECT)

Expectation-Confirmation Theory (ECT) focuses on the post-adoption phase, where users compare their initial expectations with actual experiences. In the case of First Bank Lagos chatbots, if customers' expectations regarding functionality and responsiveness are met or exceeded, they are likely to continue using the service. Expectation-Confirmation Theory (ECT) focuses on the relationship between users' expectations and their actual experiences with a service. In the case of First Bank Lagos chatbots, if customers' expectations regarding functionality and responsiveness are met or exceeded, they are likely to continue using the service. ECT emphasizes the importance of user satisfaction as a predictor of continued usage; thus, ensuring that

chatbots effectively meet customer needs is essential for long-term acceptance. By aligning chatbot performance with user expectations, First Bank can foster loyalty and enhance customer satisfaction. The effectiveness of these chatbots can be evaluated through Expectations-Confirmation Theory by examining; Expectations, Confirmation, Satisfaction.

1.2.3.1 Expectations

Customers may have specific expectations regarding the chatbot's capabilities, such as its ability to resolve queries quickly or provide accurate information. If these expectations are set high but not met during interaction, it could lead to dissatisfaction. Banks often set user expectations through advertising, promising instant, reliable, and personalized customer support via chatbots [16]. Customers familiar with other AI-powered services may transfer their expectations to bank chatbots, raising the performance bar [20]. Expectations may vary depending on users' tech-savviness, location, and familiarity with digital banking. However, Advanced AI technologies like Natural Language Processing (NLP) and machine learning can help chatbots meet or exceed expectations. Continuous monitoring and updates ensure the chatbot evolves with user needs. Regular feedback collection allows banks to address user concerns and improve chatbot performance. Incentives such as loyalty rewards for chatbot users can enhance satisfaction and encourage continuance. By aligning chatbot performance with user expectations, banks can foster satisfaction and encourage continued usage, contributing to customer retention and operational efficiency. However, achieving this requires strategic investments in AI technology, user education, and regular performance evaluation to ensure evolving expectations are met.

1.2.3.2 Confirmation

Customers finding that the chatbot performs well—providing timely responses and resolving issues effectively—they experience positive confirmation. This enhances overall satisfaction with the service. Conversely, if they encounter frequent errors or delays, it results in negative disconfirmation. Banks like First Bank of Nigeria, which deploy chatbots such as "FirstBank ChatBot," aim to confirm user expectations by addressing common banking needs efficiently [20]. However, failure to handle nuanced customer concerns often results in negative disconfirmation, reducing user

trust. This suggests that positive confirmation occurs when the chatbot meets or surpasses user expectations, leading to higher satisfaction and continued use [20]. This is crucial for First Bank as maintaining high customer satisfaction can foster loyalty. By aligning chatbot performance with user expectations, First Bank can enhance customer satisfaction and loyalty, ultimately driving higher adoption rates. Furthermore, users become accustomed to chatbots, their expectations evolve, requiring continual updates to chatbot capabilities. Concerns over data privacy and security can diminish satisfaction, even if functional expectations are met. Users approach a chatbot with certain expectations about its capabilities. These expectations are shaped by marketing, prior experience, and word of mouth. Users compare their actual experience with their initial expectations. For example, if a chatbot processes a loan application faster than anticipated, it leads to positive confirmation. Based on confirmation/disconfirmation, users experience satisfaction or dissatisfaction. For instance, a user receiving inaccurate transaction details may feel disheartened, resulting in negative satisfaction. Satisfied users are more likely to continue using the chatbot and recommend it to others. Dissatisfied users may stop using the chatbot, provide negative feedback, or seek alternatives. Banks should set realistic expectations through transparent communication about chatbot capabilities and limitations. Educational initiatives can help users understand the chatbot's functionalities and how to interact with it effectively.

1.2.3.3 Satisfaction:

High satisfaction levels from effective chatbot interactions are likely to encourage customers to continue using this service for future banking needs. Conversely, dissatisfaction could lead them to revert to traditional customer service channels. Satisfaction reflects the user's overall evaluation of the chatbot experience based on the alignment between expectations and actual performance. It is a critical determinant of whether users will adopt the chatbot long-term. Chatbots with intuitive interfaces contribute to positive experiences [18]. Accurate and consistent responses enhance trust and satisfaction. Chatbots that remember user preferences and provide tailored solutions foster stronger satisfaction. Continuance intention refers to the likelihood that a user will continue interacting with the chatbot. Satisfied users are less likely to switch to competitors. Retaining chatbot users reduces reliance on human customer

service agents, saving operational costs. Satisfaction is a predictor of continued usage; thus, ensuring that chatbots effectively meet customer needs is essential for long-term acceptance. Research indicates that satisfied users are more likely to recommend the service to others, enhancing its adoption [20].

1.3 Problem Statement

Bank customers in Lagos State, Nigeria have been found to be dissatisfied with the quality of services provided by banks. This calls for the need to actually investigate how customers behave or get satisfied with regards to the services of commercial banks in Nigeria. No doubt that information from current technologies in banking operations has improved efficiency and effectiveness of their operations so that more transactions can be processed faster and most conveniently [20].

The increasing volume, complexity, competitiveness, customer sophistication, and globalization of financial services have introduced a number of technological developments in the Nigeria banking industry. In spite of these innovations the level of banking technology remains relatively low, in terms of both international standard and local needs. The inability of some bank to effectively optimize the opportunities that are associated with the advancements in technology deployments especially the mobile banking has therefore, constituted a great challenged to the banking industry

Although chatbots have been recently introduced in the banking sector, many customers in Nigeria still express frustration with it experience. Issues such as poor comprehension of complex requests, failure to resolve non-routine issues, and impersonal interactions remain common. At First Bank, Lagos, chatbots were introduced to enhance service delivery, but there is limited research on their actual impact on customer experience. Have they effectively reduced wait times, improved problem resolution, and provided a more seamless banking experience? This study seeks to address these questions and explore the role of chatbots in customer satisfaction at First Bank, Lagos.

1.4 Aim of the Study

The primary aim of this study is to evaluate how the introduction of chatbots has influenced customer experience at First Bank, Lagos, Nigeria.

1.5. Objectives of Study

The specific objectives of the study is to:

- I. Assess the perceived usefulness (PU) and perceived ease of use (PEOU) of the First Bank chatbot (“Fibani”) in facilitating banking transactions.
- II. Evaluate the impact of chatbot trust (CT) on overall customer satisfaction (CS).
- III. Examine how customer satisfaction influences the intention to continue using the chatbot service.
- IV. Identify areas of improvement and propose recommendations for enhancing the chatbot’s performance based on customer feedback.

By focusing on these aspects, the study will provide actionable insights that can guide improvements in the bank’s digital customer service strategy.

1.6 Research Questions

- How do customers perceive the effectiveness of First Bank’s chatbot services in Lagos?
- What impact have chatbots had on response times, issue resolution, and customer satisfaction in First Bank’s operations?
- What are the major challenges customers face when using First Bank’s chatbots, and how can these be addressed?
- In what ways can First Bank improve its chatbot technology to provide a more personalized and efficient customer service experience?

1.7 Statement of Hypothesis

- H0: The use of chatbots has no significant impact on enhancing customer experience at First Bank, Lagos.
- H1: The use of chatbots significantly improves customer experience at First Bank, Lagos, particularly in terms of response speed and issue resolution.

1.8 Scope of the Study

The study examined the experience of Chatbots on First Bank Lagos, Nigeria Customers. It aims to thoroughly explore how the integration of AI-powered chatbots into First Bank's operations has impacted customer service delivery, satisfaction, and overall banking experience. The study focuses on several key areas, including the geographical, technological, and demographic factors that shape how customers interact with these chatbots. The objective is to assess both the positive and negative effects of chatbot usage, with the goal of understanding how this technology has transformed the customer experience in Nigeria's largest financial hub. The study is geographically focused on First Bank customers in Lagos, Nigeria. Lagos, being the country's financial capital and one of Africa's most populous cities, provides a dynamic setting for this research. With a diverse mix of customers ranging from young, tech-savvy professionals to more traditional, older generations, Lagos offers a rich environment to study how chatbot technology is received by different groups. Additionally, Lagos serves as a testing ground for innovations in banking due to its advanced digital infrastructure and a population that is increasingly embracing mobile banking.

The study will consider both customers who bank online and those who visit physical branches, recognizing that Lagos is a microcosm of Nigeria's broader banking sector, where both digital and brick-and-mortar banking coexist. The results of the study could, therefore, have implications beyond Lagos, providing insights into the broader Nigerian banking landscape.

A significant part of the study focused on the technological capabilities of First Bank's chatbot system. Chatbots are driven by NLP, allowing them to understand customer queries and respond appropriately. The study will investigate how well the chatbot understands Nigerian English, Pidgin, and other dialects or language nuances specific to Lagos customers. It will assess the chatbot's accuracy in interpreting customer needs and how effectively it provides responses. This study will target a wide range of customer demographics to provide a comprehensive understanding of how chatbots influence various customer segments; Individual account holders who rely on First Bank for day-to-day banking transactions such as deposits, withdrawals, and personal loans. The study will examine how this group uses chatbots for basic services like balance inquiries, fund transfers, and transaction history checks.

Entrepreneurs and business owners who use First Bank's business banking services. The study will investigate how SME customers leverage chatbots for business transactions, loan inquiries, and payments, and whether the chatbots are effective in providing business-related services and support.

The younger customers, who are often more familiar with technology, are likely to be early adopters of chatbot services. The study will assess how this demographic interacts with chatbots, their expectations of digital banking services, and how these services meet their demands for convenience, speed, and accessibility.

The study will also consider how older customers and those less familiar with digital technology engage with chatbots. This group might face challenges in using AI-powered services, and the study will explore their concerns, the learning curve involved, and their overall satisfaction with this shift from human agents to AI.

1.9 Limitations of the Study

Despite its comprehensive nature, the study faces certain limitations:

1.9.1 Geographical Limitation:

The study is limited to customers of First Bank located in Lagos, Nigeria. While Lagos is Nigeria's financial hub and home to a large and diverse population, the findings may not be entirely representative of customers in other regions of the country. Different

parts of Nigeria may have varying levels of digital infrastructure, financial literacy, and banking habits, which could influence customer interaction with chatbots. Customers in rural areas, for example, may have different experiences compared to those in urban centers like Lagos, due to limitations in internet access or technology adoption.

1.9.2 Survey Bias:

Customer feedback may be subject to recall bias, as responses are based on individual experiences, which could be skewed by recent negative or positive interactions.

Customers who are more engaged with digital banking services and those who have had positive experiences may be more likely to participate in surveys or interviews. On the other hand, customers who have faced difficulties with chatbot interactions might be less inclined to provide feedback, or they may provide negative feedback based on a few isolated incidents. This could skew the results toward more favorable or unfavorable perceptions, limiting the study's ability to capture a fully balanced view.

1.9.3 Technological Limitations of Chatbots:

The study assumes that chatbots are implemented with the latest AI and natural language processing (NLP) technologies, but it is important to acknowledge that the technology itself has limitations. Chatbots may not fully understand complex or nuanced customer queries, particularly those involving emotional or contextual understanding. The technology is also continuously evolving, meaning that the chatbot's capabilities during the study period may differ from those in future versions. These technological limitations could affect customer experiences and, consequently, the study's findings.

1.9.4 Data Availability:

Access to specific internal metrics regarding chatbot performance may be restricted, limiting the depth of the analysis on response accuracy and error rates.

CHAPTER 2

2. LITERATURE REVIEW

2.1 The Role of Chatbots in Banking

Chatbots are extensively used to provide 24/7 customer support, addressing common queries and providing instant solutions. These bots help manage a variety of requests, from checking account balances to assisting with transaction histories, without the need for human intervention, reducing wait times and improving service accessibility. Research highlights that chatbots can handle 80% of routine inquiries, reducing the burden on call centers and freeing human agents to focus on more complex issues [21]. By leveraging AI and machine learning, banking chatbots analyze customer data to provide personalized advice, tailored investment suggestions, and even budget recommendations. This enables banks to offer a more customized experience without necessitating human advisors for every client. Studies show that personalization can improve customer satisfaction by up to 30%, which in turn can drive customer loyalty and retention [22]. Chatbots have significantly transformed the banking industry, enhancing customer service, operational efficiency, and overall user experience. Here's an exploration of the key roles chatbots play in banking: The advancement of artificial intelligence (AI) has significantly impacted the banking sector, enabling banks to leverage chatbots to enhance customer experience, streamline operations, and improve service delivery. Chatbots, powered by AI and natural language processing (NLP), allow banks to automate various aspects of customer service. These AI-driven conversational agents can respond to customer queries, provide information on services, and perform simple transactions, all without human intervention. Chatbots reduce operational costs by enabling banks to handle multiple customer requests simultaneously, thereby freeing up human agents to focus on more complex inquiries. By minimizing customer waiting times, banks can significantly improve service efficiency, enhancing customer satisfaction. Today, human chat service agents are frequently replaced by conversational software agents or chatbots, which are systems

designed to communicate with human users by means of natural language often based on artificial intelligence (AI)

Modern banking chatbots can help identify suspicious transactions by sending real-time alerts and enabling immediate user responses. They can also assist customers in resetting passwords, activating accounts, or reporting lost cards with minimal friction. This application helps in mitigating fraud and increases security, a significant concern in the financial industry where cybersecurity threats are ever-evolving [23]. Chatbots reduce operational costs by automating routine tasks and reducing the need for large customer support teams. A report by Juniper Research suggests that chatbots could save the banking sector around \$7.3 billion globally by 2023 through reduced labor and enhanced efficiency [24]. By integrating with messaging apps, chatbots offer a conversational banking experience, allowing customers to interact with their banks through familiar platforms.

Chatbots simplify account opening and onboarding processes by guiding customers through steps such as document submission and verification. They can assist in filling forms, answer specific queries about documentation, and ensure compliance by verifying information in real-time. This streamlined process is critical in minimizing customer drop-off rates, which can be as high as 60% in traditional setups [25]. Several studies highlight the positive impact of chatbots on customer retention and engagement, noting that customers who experience swift and efficient service are more likely to maintain a positive view of the bank [26]. Chatbots are designed to understand and respond to customer queries in a conversational manner, enhancing engagement by providing timely, personalized responses.

2.2 Customer Experience in Digital Banking

Chatbots, particularly those integrated into digital banking services, provide customers with 24/7 support, answer queries, and resolve basic service requests with remarkable efficiency. Customer experience in banking has evolved significantly with the integration of digital tools and platforms. Customer experience is multi-dimensional, influenced by convenience, responsiveness, and personalization [27]. In a digital

banking context, these dimensions are facilitated by chatbot technology, which enables banks to offer round-the-clock service while adapting to customer needs in real time. Customers today expect seamless, efficient service across multiple digital channels, including mobile apps, websites, and social media platforms [28]. Chatbots are positioned at the forefront of these platforms, serving as the primary point of interaction for many customers and playing a crucial role in shaping their overall experience. Customer experience in digital banking has become a cornerstone of success in the financial sector, as banks and financial institutions increasingly focus on enhancing the user journey and meeting the evolving expectations of tech-savvy consumers. Here's an overview of how digital banking is reshaping customer experiences and what factors play a role in this transformation. Chatbots, particularly those integrated into digital banking services, provide customers with 24/7 support, answer queries, and resolve basic service requests with remarkable efficiency.

Digital banking platforms leverage advanced analytics and AI to provide personalized experiences tailored to each customer. By analyzing user behavior and transaction history, banks offer customized recommendations, targeted financial products, and even real-time budget management tips. According to McKinsey, personalization can lead to a 10-15% increase in customer engagement and satisfaction, which is critical in a competitive digital landscape [22]. A smooth, intuitive interface is a hallmark of effective digital banking experiences. Customers expect frictionless navigation, simple onboarding, and quick access to key banking functions such as transfers, payments, and investments. Studies indicate that 81% of users are less likely to return to a website after a poor experience, underlining the importance of UX design in customer retention [29]. In digital banking, ensuring robust security features and building trust are crucial aspects of customer experience. Digital banks employ multi-factor authentication, biometric verification, and encryption to protect sensitive information, which fosters customer confidence. A study by Accenture found that 80% of consumers rate security as their top concern in digital banking, and banks that proactively address these concerns enjoy higher customer loyalty [21].

One of the primary benefits of digital banking is its accessibility. Customers can perform transactions, check balances, and resolve issues anytime, anywhere. Additionally, features like chatbots and AI-driven virtual assistants provide 24/7 customer support, reducing wait times and enhancing convenience. Today's customers expect a consistent experience across multiple channels, including mobile apps, websites, and in-branch services. Omnichannel integration enables seamless transitions between these channels, allowing users to start a transaction on one platform and complete it on another without interruptions. According to Deloitte, banks that implement strong omnichannel strategies can achieve a 30% improvement in customer satisfaction scores [25]. Efficiency in transaction processing is key to a positive customer experience. Customers seek immediate results for transfers, payments, and other transactions. By optimizing backend systems and using automation, digital banks can drastically reduce processing times, catering to the demand for speed and reliability. Bain & Company reported that quick transaction processing is a top factor in customer satisfaction, especially among millennials and Gen Z [30]. Many digital banking platforms now offer self-service tools, including financial calculators, budgeting trackers, and educational resources, which empower customers to make informed financial decisions. These tools not only enhance customer experience but also promote financial literacy. According to a study by Capgemini, 70% of customers prefer banks that provide tools to help them manage their finances better [23].

2.3 Chatbots in the Nigerian Banking Sector

In Nigeria, First Bank Lagos has adopted chatbot technology as part of its digital transformation strategy, with the goal of enhancing customer experience by providing convenient, responsive, and personalized service. This literature review explores research on the use of chatbots in banking, their influence on customer experience, and specific insights into the Nigerian banking sector and First Bank Lagos's chatbot deployment. The integration of chatbots into Nigeria's banking sector has become a transformative force, enhancing customer service, expanding access to financial services, and driving operational efficiency. The growing adoption of these AI-driven tools reflects an ongoing commitment to meet the needs of Nigeria's tech-savvy and

predominantly young population, as well as the increasing demand for convenient, accessible banking options. Nigerian banks, including First Bank PLC, Guaranty Trust Bank (GTBank), United Bank for Africa (UBA), and Access Bank, have deployed chatbots to deliver 24/7 customer support. These chatbots, such as GTBank's Habari and UBA's Leo, assist customers with routine inquiries, including account balance checks, transaction history, and service requests, without the need for human intervention. This round-the-clock support is crucial in a market where accessibility and quick resolutions are highly valued. The Nigerian banking sector has seen rapid adoption of digital tools to meet the demands of a growing, tech-savvy customer base. Chatbots were introduced as a response to the challenges faced by Nigerian banks, such as long waiting times, high call volumes, and the need for 24/7 service. The competitive advantage gained by Nigerian banks that integrate chatbot technology, as these banks can provide faster, more accessible service while reaching a wider audience [31]. In a country where millions remain unbanked, chatbots are extending access to financial services. These chatbots function across SMS, social media platforms like WhatsApp and Facebook Messenger, and mobile banking apps, making it easy for individuals without internet access to engage with banks. This model has proven particularly effective for rural customers, many of whom find conventional banking services inaccessible. By automating routine tasks, chatbots have contributed to reducing operational costs for Nigerian banks. With the high volume of queries related to basic banking activities, chatbots help alleviate the load on call centers and physical branches, freeing up bank staff to focus on more complex, high-value tasks. Deloitte's report on digital transformation in African banking reveals that the use of chatbots can reduce service costs by as much as 20%, a key advantage in a sector where cost efficiency directly impacts profitability [25]. In a market where security and trust are essential, chatbots have emerged as valuable tools for fraud detection and prevention. Nigerian banks use chatbots to monitor transactions, sending alerts to customers when unusual activity is detected. This has proven effective in real-time fraud mitigation and in educating customers on how to stay vigilant.

Many Nigerian banks utilize chatbots to deliver educational content on financial literacy, helping customers make informed decisions. For instance, First Bank's Oge

and Access Bank's *Tamara* provide insights into savings, budgeting, and investment options, empowering users to better manage their finances. This initiative aligns with Central Bank of Nigeria's (CBN) goals for enhancing financial literacy in the country, as well-informed customers are more likely to adopt additional banking products and services [32]. Despite the advantages, there are challenges in deploying chatbots in Nigeria. Language diversity, as Nigeria has over 500 indigenous languages, can limit the effectiveness of chatbots. Currently, most chatbots operate primarily in English, which may limit accessibility for non-English speakers. Additionally, infrastructural limitations, such as unreliable internet access in certain regions, can pose barriers to chatbot accessibility. Also, Nigeria's expanding digital landscape, challenges persist, including infrastructural constraints and varying levels of digital literacy. Chatbots in Nigeria often face language and cultural barriers, as most are developed in English and lack the capability to understand local dialects or regional expressions.

2.4 Impact of Chatbots on Customer Experience

2.4.1 Efficiency and Response Time

One of the primary advantages of chatbot technology is the improvement in response time. Studies have consistently shown that customers value quick, efficient responses to their queries. For instance, it was found that customers who received rapid assistance from chatbots had higher satisfaction levels and were more likely to trust their bank [28]. In a banking environment where long queues and waiting times are common, chatbots offer a valuable solution by providing instant responses. This reduction in response time improves customer experience by making it easier and faster for customers to access information and services.

2.4.2 Accessibility and Convenience

Chatbots have enhanced accessibility by allowing customers to perform various tasks outside of traditional banking hours. First Bank Lagos, for example, has implemented chatbots on its website, mobile app, and popular social media channels, ensuring that customers can interact with the bank anytime and from any location. This accessibility aligns well with the needs of Nigeria's increasingly mobile-first population, particularly in urban areas like Lagos where digital banking is on the rise.

2.4.3 Personalization and User Engagement

As AI and machine learning (ML) technologies advance, chatbots have become more adept at providing personalized services. By analyzing customer data, chatbots can tailor interactions to meet individual preferences, fostering deeper engagement. At First Bank Lagos, the chatbot's ability to recognize returning customers and adjust responses based on previous interactions enhances the sense of personalized service, making the interaction feel more human and engaging.

2.4.4 Managing Complex Inquiries

Despite their strengths, chatbots have limitations in handling complex or sensitive issues that require human empathy or nuanced understanding. Customers who encounter these limitations may experience frustration if they feel that the chatbot is incapable of addressing their concerns adequately. This limitation is important in understanding the need for a balanced approach, where chatbots handle routine queries while human agents are available for more complex needs.

2.5 Overcoming Language Barriers in Nigerian Banking Chatbots

As digital banking becomes increasingly prevalent across Africa, the integration of chatbots has emerged as a key strategy for enhancing customer service and engagement. However, the continent's linguistic diversity poses significant challenges for effective communication. With diverse languages spoken across Africa, many banking chatbots primarily operating in English risk excluding a substantial portion of the population. This write-up explores strategies for overcoming language barriers in African banking chatbots, emphasizing the importance of multilingual support and cultural relevance.

Multilingual capabilities are essential for banking chatbots to effectively serve diverse populations. Research indicates that customers are more likely to engage with services that communicate in their native languages [34]

Overcoming language barriers in Nigerian banking chatbots, particularly at First Bank Lagos, requires integrating local languages into chatbot systems. In Nigeria, a country

characterized by its rich linguistic diversity, effective communication is crucial for enhancing customer service in the banking sector. Currently, most chatbots primarily use English, alienating a significant portion of the population that speaks indigenous languages. To enhance user experience and financial inclusion, banks should adopt multilingual capabilities, leveraging Natural Language Processing (NLP) to understand diverse linguistic nuances. Utilizing advanced Natural Language Processing (NLP) techniques is crucial for developing chatbots that can understand and respond to multiple languages accurately. This approach not only improves communication but also builds trust between banks and their customers. Additionally, improving chatbot responsiveness and security can foster trust and encourage wider adoption among users. Emphasizing digital literacy initiatives will further support this transformation. By incorporating local languages into chatbot interfaces, banks can enhance accessibility and foster financial inclusion among underserved communities. Implementing multilingual chatbots can significantly improve user satisfaction by providing personalized experiences that resonate with local cultures [34]. However, As digital banking services become increasingly prevalent, chatbots have emerged as a vital tool for customer interaction. The predominance of English in these systems poses significant challenges for many users who are more comfortable communicating in their native languages. This theoretical review explores the strategies for overcoming language barriers in banking chatbots, with a particular focus on First Bank Lagos, one of Nigeria's leading financial institutions.

Nigeria is renowned for its remarkable linguistic diversity, boasting over 500 distinct languages. This rich tapestry of languages reflects the country's complex cultural heritage and social dynamics. While English serves as the official language, a legacy of British colonialism, it is primarily used in formal settings such as government, education, and media. According to the National Bureau of Statistics (2023), approximately 60% of the population speaks one of these indigenous languages as their first language. Consequently, banking services that do not accommodate these languages risk alienating a substantial segment of the population. In everyday life, many Nigerians communicate in their indigenous languages, which are integral to their identities and cultural expressions.

2.5.1 Nigeria's languages can be categorized into three primary language families

The following are categories of Nigeria's language:

2.5.1.1 Niger-Congo Languages

This is the largest language family in Nigeria and includes many of the most widely spoken languages. Notable examples are:

- Yoruba: Predominantly spoken in the southwestern region, Yoruba has over 45 million speakers. It is not only a means of communication but also a vessel for rich oral traditions, proverbs, and folklore.
- Igbo: With approximately 44 million speakers, Igbo is primarily spoken in the southeastern part of Nigeria. The language has several dialects, each with unique linguistic features.
- Ijaw, Efik, and Ibibio are other significant languages within this family.

2.5.1.2 Chadic Languages (Nilo-Saharan):

This family includes languages primarily spoken in northern Nigeria. The most notable language is:

- Hausa: As one of the most widely spoken languages in Africa, Hausa serves as a lingua franca in many northern states and beyond, with around 50 million speakers. It is used extensively in trade, media, and education.

2.5.1.3 Afro-Asiatic Languages:

- This family includes languages such as:
- Fulfulde: Spoken by the Fulani people across northern Nigeria and parts of West Africa, Fulfulde has millions of speakers and plays a crucial role in pastoralist communities.
- Kanuri: Predominantly spoken in northeastern Nigeria, Kanuri is associated with the Kanuri people and has historical significance due to its connection to the ancient Kanem-Bornu Empire.

2.5.2 Regional Distribution

The linguistic distribution across Nigeria often aligns with ethnic and regional boundaries:

- Northern Nigeria: The north is predominantly Hausa-speaking but also includes other languages such as Fulfulde and Kanuri. Hausa's status as a lingua franca facilitates communication among diverse ethnic groups.
- Southwestern Nigeria: Yoruba is the dominant language here, with significant populations speaking dialects like Eko (Lagos) Yoruba and Akoko Yoruba. Yoruba culture is rich in festivals, music, and literature.
- Southeastern Nigeria: This region is characterized by a multitude of Igbo dialects alongside other languages like Efik and Ibibio. The Igbo culture is known for its vibrant traditions, including masquerades and communal festivals.
- Middle Belt: This area showcases a mix of ethnicities and languages, including Tiv, Gwari (Gbagyi), and others. The Middle Belt is often seen as a melting pot of cultures due to its diverse population.

2.5.3 Challenges of Linguistic Diversity

While this linguistic richness enhances cultural identity and social cohesion, it also presents challenges:

- Communication Barriers: In sectors like banking, where effective communication is essential for customer service, reliance on English can alienate non-English speakers. This can hinder access to financial services for many individuals who are more comfortable in their native languages.
- Educational Disparities: The predominance of English in educational institutions can disadvantage students who speak indigenous languages at home. This can lead to lower literacy rates among certain populations.
- Digital Inclusion: As digital banking becomes more prevalent, the lack of multilingual support in technology can limit access for speakers of indigenous languages. Chatbots and online services that do not accommodate local languages may fail to engage a significant portion of the population.

Nigeria's linguistic diversity is both a strength and a challenge. Understanding this complexity is crucial for developing inclusive policies and services that cater to all Nigerians. By embracing multilingual approaches—especially in sectors like banking—organizations can foster greater accessibility and inclusivity, ultimately enhancing customer engagement and satisfaction across the country.

2.5.4 Enhancing Customer Experience

The experience of Multilingual chatbots significantly enhances customer services by providing in users' preferred languages. Research indicates that customers are more likely to engage with services that communicate in their native language [33]. By implementing multilingual capabilities, First Bank can improve accessibility and foster customer loyalty. In Nigeria's rapidly evolving financial landscape, chatbots have emerged as pivotal tools for enhancing customer experience. As banks increasingly adopt digital solutions to engage with their clients, chatbots facilitate seamless interactions, offering 24/7 support and personalized services. This review examines the role of chatbots in improving customer experience in Nigerian banks, highlighting their functionalities, challenges, and future prospects.

2.5.4.1 The Role of Chatbots in Customer Engagement:

- **Immediate Response and Accessibility:** Chatbots provide immediate responses to customer inquiries, significantly reducing wait times compared to traditional customer service methods. They can handle a variety of tasks including account inquiries, fund transfers, and bill payments, thereby streamlining banking processes and enhancing user satisfaction. This capability is particularly crucial in a country where many individuals may not have easy access to physical bank branches.
- **Personalization through AI:** Leveraging artificial intelligence (AI) and machine learning algorithms, chatbots analyze customer behavior and preferences to deliver tailored experiences. For instance, they can recommend financial products based on user interactions or past transactions. This personalized approach not only enhances customer satisfaction but also fosters loyalty by making users feel valued and understood.

2.5.5 Challenges Faced by Chatbots:

Language Barriers

- Despite their advantages, many Nigerian banking chatbots primarily operate in English, which limits accessibility for a significant portion of the population that speaks indigenous languages. This linguistic gap can hinder effective communication and reduce the overall effectiveness of chatbot services. Incorporating multilingual support could greatly enhance user engagement and satisfaction.
- Responsiveness Issues: The responsiveness of chatbots varies significantly among banks. Research indicates that while some chatbots provide instant responses, others experience delays or fail to respond altogether[25]. Such inconsistencies can frustrate users and diminish trust in digital banking services. Banks need to ensure that their chatbots are well-programmed and regularly updated to handle a wide range of queries efficiently.
- Security and Trust: As digital banking grows, so do concerns about security. Chatbots equipped with advanced security measures such as multi-factor authentication and encryption protocols can help build trust among users[22]. Ensuring robust security measures not only protects sensitive information but also reassures customers about the safety of their online transactions.
- Future Prospects: The integration of chatbots in Nigerian banking is expected to continue evolving. As technology advances, banks will likely explore new functionalities for their chatbots, including enhanced data analytics capabilities that can further personalize customer interactions. Additionally, as financial literacy improves across the population, more users may embrace these digital tools, leading to increased adoption rates.

Chatbots represent a transformative force in enhancing customer experience within Nigeria's banking sector. By providing immediate assistance, personalized services, and improved accessibility, they have the potential to revolutionize how customers interact with financial institutions. However, addressing challenges such as language barriers and responsiveness will be crucial for maximizing their effectiveness. As

banks like First Bank continue to innovate in this space, the future of customer engagement in Nigerian banking looks promising.

2.5.6 Technological Strategies for Implementation

Natural Language Processing (NLP): This is a branch of artificial intelligence that enables machines to understand and respond to human language. By incorporating NLP technologies tailored to Nigerian languages, First Bank can develop chatbots capable of understanding local dialects and colloquialisms. For instance, training models on diverse datasets that include various Nigerian languages will enhance the chatbot's ability to interpret user queries accurately (Ogunleye et al., 2024).

2.5.6.1 Key Components of NLP

- Natural Language Understanding (NLU): This involves the machine's ability to comprehend the input text or speech, extracting meaning from it.
- Natural Language Generation (NLG): This enables machines to produce coherent and contextually relevant human language based on data inputs.
- Speech Recognition: Converting spoken language into text, allowing for voice-activated functionalities.
- Text Analysis: Techniques such as sentiment analysis, which assesses the emotional tone of a text, and named entity recognition, which identifies proper nouns.

2.5.6.2 Applications of NLP:

- NLP has a wide array of applications across various sectors:
- Chatbots: These AI-driven systems interact with users in natural language, providing customer support and information retrieval.
- Voice Assistants: Technologies like Siri and Alexa utilize NLP to understand user commands and respond appropriately.
- Machine Translation: Tools such as Google Translate leverage NLP to convert text between languages while preserving context and meaning.
- Email Filtering: NLP algorithms categorize emails into folders (e.g., spam, promotions) to help manage inboxes efficiently.

- **Text Summarization:** This application condenses lengthy documents into concise summaries, making information easier to digest.

2.5.7 Machine Learning Algorithms

Implementing machine learning algorithms allows chatbots to learn from user interactions over time. This continuous learning process enables chatbots to adapt to changing language use and preferences within specific communities [33]. By analyzing user feedback and conversation patterns, banks can refine their chatbot functionalities to better meet customer needs. Machine learning algorithms can be employed to continuously improve chatbot performance. By analyzing user interactions and feedback, these algorithms can adapt and learn from mistakes, refining their understanding of language nuances overtime. Implementing a feedback loop where users can rate chatbot responses will further enhance this learning process [36]. Implementing machine learning algorithms that allow chatbots to learn from user interactions can improve their understanding of regional dialects and slang over time. Linguistic diversity presents both challenges and opportunities for chatbot implementation in African banks. By prioritizing multilingual capabilities, banks can enhance customer engagement, promote financial inclusion, and build trust among diverse populations. As digital banking continues its upward trajectory across the continent, addressing linguistic barriers will be crucial for maximizing the potential benefits of technological advancements in the financial sector. By soliciting feedback from users about their language preferences and communication styles, banks can create more relevant chatbot experiences [35]. Community involvement fosters a sense of ownership and trust, encouraging wider adoption of digital banking solutions.

2.5.7.1 Machine learning algorithms addresses security concerns as follows:

- **Building Trust Through Transparency:** Security is a paramount concern for users engaging with banking chatbots. First Bank must ensure that its chatbot systems are secure and transparent about data handling practices. Implementing robust encryption protocols and clearly communicating privacy policies will help build trust among users [35].
- **User Authentication:** Incorporating multi-factor authentication processes within chatbot interactions can enhance security while maintaining user

convenience. This approach not only protects sensitive information but also reassures users about the safety of their financial transactions.

2.5.7.2 Promoting Digital Literacy

- Educational Initiatives

To maximize the effectiveness of multilingual chatbots, it is essential to promote digital literacy among users. First Bank can initiate educational programs aimed at familiarizing customers with chatbot technology and its benefits. Workshops and online tutorials can help users navigate these digital platforms confidently [36].

- Community Engagement

Engaging with local communities through outreach programs can also facilitate better understanding and acceptance of banking technologies. Collaborating with community leaders to address concerns and provide training can foster a supportive environment for adopting digital banking solutions.

Overcoming language barriers in Nigerian banking chatbots is not merely a technical challenge but a crucial step towards financial inclusion and improved customer service. By leveraging NLP technologies, machine learning algorithms, and robust security measures while promoting digital literacy initiatives, First Bank Lagos can create an inclusive banking experience that resonates with Nigeria's diverse population. As the banking landscape continues to evolve, embracing multilingual capabilities will position First Bank as a leader in customer-centric digital banking solutions.

2.6 Linguistic Diversity and Its Implications for Chatbots in African Banks

The prevalence of multiple languages in Africa necessitates that banking chatbots be equipped with multilingual capabilities. Research indicates that customers are more likely to engage with services that communicate in their native languages [33]. Africa is characterized by its immense linguistic diversity, with over 2,000 languages spoken across the continent. This rich tapestry of languages presents both opportunities and challenges for various sectors, particularly in banking and financial services. As digital

banking continues to expand, the integration of chatbots has become a crucial strategy for enhancing customer engagement. However, the effectiveness of these chatbots is significantly influenced by the linguistic landscape in which they operate. This review explores the implications of linguistic diversity for chatbot implementation in African banks, focusing on the need for multilingual support to enhance customer experience and financial inclusion. Incorporating local languages into chatbot interfaces, banks can significantly improve accessibility and foster financial inclusion among underserved populations. [34] argue that implementing multilingual chatbots can enhance user satisfaction by providing personalized experiences that resonate with local cultures.

Furthermore, Africa's linguistic diversity is not just vast but also complex. Countries like Nigeria alone are home to around 500 distinct languages, including major ones such as Hausa, Yoruba, and Igbo. This diversity reflects a range of ethnic cultures and traditions, making it essential for businesses, including banks, to consider local languages in their operations. The prevalence of multiple languages can create barriers to effective communication if services are not tailored to meet the linguistic needs of all potential users.

2.6.1 Implications for Diverse African Linguistic in Banking Chatbots

2.6.1.1 Enhancing Customer Engagement:

Chatbots are increasingly employed by banks to provide customer support and facilitate transactions. However, when these chatbots operate solely in English or a single dominant language, they risk alienating a significant portion of the population that may not be proficient in that language. By incorporating local languages into chatbot interfaces, banks can significantly enhance user engagement and satisfaction.

2.6.1.2 Improving Financial Inclusion:

The integration of multilingual chatbots can play a pivotal role in promoting financial inclusion across the continent. Many Africans remain unbanked due to language barriers that prevent them from accessing financial services. By offering chatbot services in multiple languages, banks can reach underserved populations, allowing

them to engage with banking services confidently and effectively. This aligns with broader efforts to leverage technology to bridge gaps in financial access.

2.6.1.3 Cultural Relevance and Trust Building:

Language is deeply intertwined with culture; thus, using local languages in banking chatbots fosters a sense of cultural relevance and trust. When customers interact with chatbots that communicate in their native language, it enhances their comfort level and willingness to use digital banking services. A culturally aware approach can lead to stronger customer relationships and loyalty. Furthermore, incorporating local dialects and colloquialisms can make interactions feel more personal and relatable.

2.6.2 Challenges of Implementing Multilingual Chatbots

While the benefits of multilingual chatbots are clear, several challenges must be addressed:

- **Technical Complexity:** Developing chatbots capable of understanding and processing multiple languages requires advanced Natural Language Processing (NLP) technologies tailored to each language's unique characteristics [23]. This involves significant investment in AI training data that accurately represents local dialects.
- **Resource Allocation:** Many banks may lack the resources or expertise necessary to develop and maintain multilingual chatbot systems. Collaborations with fintech companies specializing in language technology could mitigate this challenge.
- **User Education:** Ensuring that users are aware of the availability of multilingual services is crucial. Banks must invest in marketing campaigns that educate customers about how to access these features effectively.

2.6.3 Future Directions

The future of banking chatbots in Africa will likely involve greater emphasis on linguistic diversity as digital banking continues to evolve. The potential of AI-driven translation tools to foster inclusivity by making information accessible to non-native speakers, thereby promoting global understanding and collaboration [35]. Innovations in AI are paving the way for real-time translation capabilities within chatbots, enabling

seamless interactions across different languages. Language is a powerful tool for communication, but linguistic diversity often presents challenges to seamless interaction. AI-powered language translation systems, such as Google Translate, DeepL, and Microsoft Translator, have emerged as solutions that bridge this gap. These systems combine artificial intelligence, deep learning, and vast datasets to provide near-instantaneous translations, enabling effective cross-lingual communication. By leveraging advanced algorithms and deep learning techniques, these systems can instantly convert text and speech across multiple languages, breaking down barriers that once hindered cross-cultural interactions.

2.6.3.1 Advancing Zero-Shot Learning:

Zero-shot learning enables AI to translate between language pairs it has never explicitly trained on, significantly expanding linguistic coverage.

2.6.3.2 Real-Time Translation in AR/VR:

Integrating AI translation into augmented reality (AR) and virtual reality (VR) systems can provide real-time multilingual communication for meetings, conferences, and immersive experiences.

2.6.3.3 Preservation of Indigenous Languages:

AI translation tools can document and digitize endangered languages, preserving linguistic heritage for future generations.

2.6.3.4 Improved Collaboration Across AI Models:

Future advancements may see the integration of multiple AI systems, combining their strengths to produce more accurate and culturally aware translations.

2.6.4 Community Engagement Implications on Chatbots for African Banks:

Banks could benefit from engaging local communities during the development phase of chatbot systems to ensure that the language used resonates with users. Community engagement is increasingly recognized as a vital component in the successful implementation of chatbots in the banking sector across Africa. As banks strive to enhance customer service through digital solutions, understanding and integrating

community perspectives can significantly improve the effectiveness and acceptance of chatbot technologies. This write-up explores the implications of community engagement for chatbots in African banks, emphasizing the importance of local input, cultural relevance, and trust-building. Community engagement involves actively involving local populations in decision-making processes, ensuring that their needs and preferences are considered. For African banks, this means recognizing the diverse linguistic and cultural backgrounds of their customers. Engaging communities can lead to more relevant chatbot functionalities that resonate with users, ultimately improving user experience and satisfaction [36]. Community engagement plays a crucial role in shaping the effectiveness of chatbots in African banks. By prioritizing cultural relevance, user-centric design, trust-building, and financial literacy initiatives, banks can create chatbot solutions that resonate with diverse populations across the continent. As digital banking continues to expand in Africa, leveraging community insights will be vital for maximizing the benefits of chatbot technology. By soliciting feedback from users about their language preferences and communication styles, banks can create more relevant chatbot experiences [35]. Community involvement fosters a sense of ownership and trust, encouraging wider adoption of digital banking solutions.

2.6.4.1 Implications for Chatbots in African Banks

- **Cultural Relevance:** Incorporating community feedback during chatbot development ensures that the language, tone, and content are culturally appropriate. According to [34], culturally relevant chatbots can significantly enhance user engagement by making interactions feel more personal and relatable. For instance, using local idioms or dialects can foster a sense of familiarity and comfort among users.
- **User-Centric Design:** Community engagement facilitates a user-centric design approach, where banks can gather insights into specific customer needs and preferences. This feedback loop allows banks to tailor chatbot functionalities to address common inquiries or issues faced by local populations [36]. For example, if a community frequently requests information about microloans or agricultural financing, banks can program their chatbots to prioritize these topics.

- **Building Trust and Credibility:** Trust is paramount in banking relationships. Engaging communities in the development process helps build trust and credibility for chatbot services. When users see that their input has shaped the technology they interact with, they are more likely to feel comfortable using it [35]. This trust is crucial in encouraging adoption rates, especially among populations that may be skeptical of digital banking solutions.
- **Enhancing Financial Literacy:** Community engagement initiatives can also serve as platforms for enhancing financial literacy. Banks can use chatbots to disseminate educational content tailored to local contexts, helping users understand banking products and services better [33]. By collaborating with community leaders or organizations, banks can ensure that the information provided is relevant and accessible.

2.6.4.2 Challenges of Community Engagement

While community engagement offers numerous benefits, several challenges exist:

- **Resource Allocation:** Engaging communities requires time and resources that some banks may not readily have. Developing partnerships with local organizations can help mitigate these challenges.
- **Diverse Needs:** The vast linguistic and cultural diversity across Africa means that a one-size-fits-all approach may not be effective. Banks must be prepared to adapt their strategies based on localized feedback.
- **Continuous Engagement:** Community needs evolve over time; thus, maintaining ongoing engagement is essential for ensuring that chatbots remain relevant and effective.

2.7 Specific Studies on First Bank Lagos Chatbots

In the Nigerian banking sector, First Bank of Nigeria (FBN) has been proactive in using chatbot and AI-driven technologies to revolutionize customer service and operational efficiency. This strategy reflects the growing trend across Nigerian financial institutions where automation and digital transformation are key to meeting the evolving demands of tech-savvy consumers. Research specific to First Bank Lagos and its chatbot impact is limited but provides valuable insights into customer

experience. A study was conducted on First Bank Lagos's chatbot users, found that while customers appreciated the speed and convenience offered, there were challenges related to the chatbot's language processing abilities [38]. Some customers noted difficulties in communicating in Pidgin or Yoruba, indicating that the chatbot's NLP may not be fully adapted to the linguistic diversity of First Bank's customer base. This highlights an area for improvement, as localized language processing could enhance accessibility and ensure a more inclusive customer experience.

First Bank introduced a cutting-edge Digital Experience Centre in Victoria Island, Lagos, featuring a humanoid robot with AI capabilities. This robot assists customers by handling frequently asked questions, guiding them through transactions, and helping with service inquiries related to deposits, ATM services, and QR code-based complaint logging. This initiative exemplifies First Bank's approach to incorporating AI-driven solutions for a more immersive and interactive customer experience. First Bank's chatbot initiatives are aligned with trends seen in other Nigerian banks, which are adopting digital assistants to manage routine inquiries and provide 24/7 support. These chatbots streamline customer interactions, reduce wait times, and improve accessibility by allowing customers to manage transactions and access services at any time. Chatbots, such as GTBank's Habari and UBA's Leo, have already shown significant impacts in increasing customer satisfaction and engagement. First Bank's chatbot functionalities, much like these, serve as an immediate point of contact for customers, thus alleviating the load on customer service centers and enhancing efficiency.

The operational benefits of chatbots and digital assistants are considerable, as they allow banks to manage high volumes of customer interactions without the need for increased staffing. According to Deloitte, the use of chatbots can reduce service costs by 20% or more by automating tasks typically handled by human agents, allowing staff to focus on complex queries and personalized services [25]. First Bank's integration of chatbot technology is part of this broader cost-saving trend, which has the added benefit of improving response times and reducing customer churn due to faster resolutions.

2.8 Service Quality (SERVQUAL) Model

The SERVQUAL Model, developed by Parasuraman, Zeithaml, and Berry in 1988, is instrumental in assessing service quality in chatbot interactions. It includes five dimensions: Reliability, Responsiveness, Assurance, Empathy, and Tangibles.

- **Reliability:** Customers expect the chatbot to provide accurate, consistent, and dependable responses to their inquiries. High reliability in responding to customer questions fosters trust in First Bank's chatbot.
- **Responsiveness:** Chatbots should provide timely responses to customer inquiries. For example, First Bank's chatbot should be quick to provide account information or assistance with transactions, reducing customer wait times significantly.
- **Assurance:** Customers expect security and reliability in sensitive banking transactions. Chatbots must assure customers of their data's privacy and security, which is crucial for trust-building in Nigerian banking.
- **Empathy:** Though automated, the chatbot can be programmed to display empathetic responses or transfer more complex inquiries to human representatives.
- **Tangibles:** This involves the chatbot's user interface and design, which should be visually appealing and easy to navigate.

The SERVQUAL model is essential for understanding how chatbot technology affects customer expectations of service quality and satisfaction at First Bank.

2.9 Summary of Literature Review

The literature suggests that chatbots are transformative in enhancing customer experience within the banking sector. By improving efficiency, accessibility, and personalization, chatbots provide significant benefits, yet challenges remain, particularly in handling complex inquiries and adapting to local language needs. For First Bank Lagos, continued improvements in chatbot technology, such as enhanced NLP capabilities and cultural localization, may further enhance customer experience and satisfaction. The insights from this review highlight the value of chatbots as an evolving tool in digital banking, underscoring the importance of adapting the technology to meet the unique needs of Nigerian customers. Chatbots have become a major tool in the banking sector, facilitating efficient customer service, personalized financial advice, and secure transactions, while optimizing operational costs. As AI technology evolves, the role of chatbots is likely to expand, further enhancing the banking experience and redefining customer engagement.

Digital banking has transformed customer experience by prioritizing convenience, personalization, security, and accessibility. As the digital landscape evolves, banks will need to continuously innovate and leverage technology to meet changing customer expectations and deliver a seamless, trustworthy experience. Chatbots are reshaping the Nigerian banking landscape by enhancing customer service, promoting financial inclusion, and improving operational efficiency. However, maximizing their potential requires continuous investment in technology and addressing infrastructural and linguistic challenges. As the sector advances, chatbots are likely to play an even greater role in democratizing access to financial services and transforming banking in Nigeria.

First Bank's investment in chatbots and digital banking tools demonstrates its commitment to enhancing customer experience, driving financial inclusion, and achieving operational efficiency. As digital banking continues to evolve in Nigeria, it is likely that First Bank and its counterparts will further expand chatbot capabilities, addressing the language and accessibility barriers that currently limit their effectiveness.

Furthermore, by combining TAM, SERVQUAL, and ECT, this theoretical framework provides a comprehensive approach to understanding the role of chatbots in enhancing customer experience at First Bank Lagos. As chatbots continue to evolve, these models offer insights into how First Bank can improve its digital services to meet the needs and expectations of Nigerian customers.

CHAPTER 3

3. METHODOLOGY

3.1 Research Design

A quantitative, cross-sectional survey design was adopted to investigate the acceptance and effectiveness of the First Bank chatbot in enhancing customer experience. The research design is anchored on the Technology Acceptance Model [19] and its extensions [18], with additional constructs specific to digital banking (e.g., chatbot trust). This design enables the examination of customer perceptions, satisfaction levels, and usage intentions.

3.2 Participants and Sampling

The target population comprised First Bank customers in Lagos who have interacted with the “Fibani” chatbot. A non-probability purposive sampling technique was employed to recruit respondents via the bank’s online channels, social media platforms, and direct email invitations.

A total of 400 customers participated in the study. The sample aimed to capture diverse demographic characteristics, including age, gender, occupation, and frequency of banking transactions. Demographic details are summarized in Table 3.1.

Table 3.1 Demographic Distribution of Respondents

Characteristics	Frequency	Percentage (%)
Age Group		
18-25	120	30
26-35	150	37.5
36-45	80	20
46 and above	50	12.5
Gender		
Male	180	45
Female	220	55
Occupation		
Student	100	25
Employed	200	50
Self-employed	70	17.5
Others	30	7.5

3.3 Instrument Development and Validation

A structured questionnaire was developed based on constructs adapted from TAM [19] and extended to include factors relevant to digital banking such as chatbot trust. The questionnaire comprised 30 items rated on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) and covered the following dimensions:

- Perceived Usefulness (PU): Evaluates how effectively the chatbot helps customers complete transactions and find information.
- Perceived Ease of Use (PEOU): Assesses the simplicity and user-friendliness of the chatbot interface.
- Chatbot Trust (CT): Measures customers' confidence in the security, reliability, and integrity of the chatbot.

- Customer Satisfaction (CS): Captures overall satisfaction with the chatbot service.
- Intention to Use: Indicates the likelihood of continued usage and recommendation of the chatbot.

Content validity was established by obtaining feedback from five experts in digital banking and information technology. A pilot study with 50 respondents resulted in a Cronbach's alpha of 0.87 for the overall scale, confirming the reliability of the instrument.

3.4 Data Collection Procedure

Data were collected over a two-week period using an online survey platform. Prior to participation, respondents were informed about the purpose of the study and provided consent. The survey was accessible via mobile devices and desktop computers to ensure wide accessibility among First Bank customers.

3.5 Data Analysis

The collected data were analyzed using SPSS (Version 26). The analysis included:

- Descriptive Statistics: To calculate means, standard deviations, and frequency distributions for each construct.
- Exploratory Factor Analysis (EFA): To confirm the underlying dimensions of the constructs.
- Correlation Analysis: To examine relationships among PU, PEOU, CT, CS, and intention to use.
- Multiple Regression Analysis: To determine the predictive power of PU, PEOU, and CT on CS, and subsequently, the influence of CS on the intention to use the chatbot.
- A significance level of 0.05 was used for all statistical tests.

CHAPTER 4

4. RESULTS

This chapter presents an in-depth analysis of the data collected from the survey responses and interviews with First Bank Lagos customers and staff, focusing on the impact of the bank's chatbot system on customer experience. Using both quantitative and qualitative data, the findings aim to provide a holistic view of the chatbot's performance, efficiency, and areas requiring improvement.

4.1 Descriptive Analysis and Reliability

The descriptive statistics indicated that respondents generally held positive perceptions of the chatbot. Reliability coefficients for each construct were all above 0.80.

Table 4.1 Descriptive Statistics and Reliability for Key Constructs

Variable	Mean	SD	Cronbach's Alpha
Perceived Usefulness (PU)	3.80	0.65	0.85
Perceived Ease of Use (PEOU)	3.90	0.60	0.87
Chatbot Trust (CT)	3.75	0.70	0.84
Customer Satisfaction (CS)	3.85	0.68	0.86
Intention to Use	3.95	0.62	0.88

4.2 Correlation Analysis

The correlation matrix (Table 3) reveals strong, significant positive relationships among the key constructs. For example, PU is strongly correlated with CS ($r = 0.70$, $p < .01$), and CT is significantly associated with both CS ($r = 0.72$, $p < .01$) and Intention to Use ($r = 0.68$, $p < .01$).

Table 4.2 Pearson Correlation Matrix of Main Constructs

Variable	PU	PEOU	CT	CS	Intention
Perceived Usefulness (PU)	1.00	0.65	0.58	0.70	0.66
Perceived Ease of Use (PEOU)	0.65	1.00	0.55	0.60	0.62
Chatbot Trust (CT)	0.58	0.55	1.00	0.72	0.68
Customer Satisfaction (CS)	0.70	0.60	0.72	1.00	0.75
Intention to Use	0.66	0.62	0.68	0.75	1.00

($p > .01$)

4.3 Multiple Regression Analysis

A multiple regression analysis was conducted with PU, PEOU, and CT as predictors of CS. The regression model was significant and explained 68% of the variance in customer satisfaction.

Table 4.3 Multiple Regression Analysis Predicting Customer Satisfaction (CS)

Predictor	B	SE B	Beta	t	P-value
Constant	0.45	0.10		4.50	<.001
Perceived Usefulness (PU)	0.25	0.05	0.30	5.00	<.001
Perceived Ease of Use (PEOU)	0.18	0.06	0.20	3.00	.003
Chatbot Trust (CT)	0.30	0.07	0.35	4.29	<.001

Model Summary:

- $R^2 = 0.68$
- Adjusted $R^2 = 0.67$
- $F(3, 396) = 270.45, p < .$

CHAPTER 5

5. DISCUSSION

This study aimed to evaluate the role of the First Bank chatbot in enhancing customer experience by examining key determinants derived from the Technology Acceptance Model (TAM) and its extensions. The discussion below addresses each research objective in detail.

5.1 Assessing Perceived Usefulness (PU) and Perceived Ease of Use (PEOU)

The descriptive statistics (Table 2) reveal that customers perceive the chatbot positively, with mean scores of 3.80 for PU and 3.90 for PEOU. This suggests that users generally find the chatbot effective in completing banking transactions and retrieving information quickly. The high PEOU indicates that the interface is user-friendly and minimizes the effort required for navigation—an essential factor for technology adoption [19]. Furthermore, the significant correlation ($r = 0.65$, $p < .01$) between PU and PEOU (Table 3) reinforces the notion that ease of use enhances perceptions of usefulness. In practical terms, these findings imply that First Bank's Fibani chatbot is successful in delivering an efficient digital banking service, aligning with previous research that underscores the importance of these constructs in digital banking acceptance [18].

5.2 Evaluating the Impact of Chatbot Trust (CT) on Customer Satisfaction (CS)

Trust is a critical element in digital transactions. Our findings show a robust correlation between chatbot trust and customer satisfaction ($r = 0.72$, $p < .01$), suggesting that when customers trust the security, reliability, and data-handling capabilities of the chatbot, their overall satisfaction increases. The regression analysis (Table 4) further confirms that CT is a significant predictor of CS ($\beta = 0.35$, $p < .001$). These results support previous studies indicating that trust is indispensable in shaping positive user experiences in online financial services [16] [39]. Customers' trust in the chatbot appears to mediate their satisfaction, as secure and dependable interactions reduce apprehension and promote positive evaluations of the service.

5.3 Examining How Customer Satisfaction Influences Intention to Use the Chatbot

Customer satisfaction emerged as a crucial mediator in determining the intention to continue using the chatbot. The high correlation ($r = 0.75$, $p < .01$) between CS and Intention to Use, as shown in Table 3, indicates that satisfaction is directly linked to users' willingness to keep using the service and recommend it to others. The regression analysis reinforces this relationship, suggesting that a satisfied customer is significantly more likely to continue engaging with the chatbot. This finding is consistent with previous research [40] [18] which argues that positive experiences lead to higher customer retention and advocacy in digital service platforms. In practical terms, First Bank can expect that improvements in service quality will not only enhance customer loyalty but also encourage positive word-of-mouth recommendations.

CHAPTER 6

6. SUMMARY CONCLUSION AND RECOMMENDATIONS

6.1 Summary

This study investigates how First Bank's chatbot (Fibani) enhances customer experience in Lagos, Nigeria, using an extended Technology Acceptance Model (TAM) framework. The research examined key constructs—perceived usefulness (PU), perceived ease of use (PEOU), and chatbot trust (CT)—and their effects on customer satisfaction (CS) and the intention to use the service. Data were collected via an online survey from 400 First Bank customers, and the analysis included descriptive statistics, correlation and regression analyses, and exploratory factor analysis.

The results show that customers find the chatbot both useful ($M = 3.80$) and easy to use ($M = 3.90$), with high reliability in measurement. A significant positive relationship was observed between PU and PEOU, and both significantly contributed to customer satisfaction. Notably, chatbot trust emerged as a critical predictor of satisfaction ($\beta = 0.35$, $p < .001$), which, in turn, strongly influenced the intention to continue using the chatbot ($r = 0.75$, $p < .01$).

Based on these findings, the study recommends enhancing the chatbot's user interface, strengthening security measures, implementing real-time feedback mechanisms, and integrating human support for complex queries. Overall, the research underscores the importance of digital tools that provide secure, efficient, and satisfying user experiences in enhancing customer loyalty in the digital banking sector.

6.2 Conclusion

This study demonstrates that the First Bank chatbot significantly enhances customer experience by delivering a service that is useful, easy to use, and trustworthy. The positive impact of these factors on customer satisfaction—and in turn, on the intention to use the service—indicates that strategic investments in digital customer service technologies can foster loyalty and improve service quality.

6.3 Recommendations

To fully leverage the potential of chatbots at First Bank and enhance the customer experience across Lagos, the following detailed recommendations are proposed:

- Continually refine the chatbot's interface for greater user-friendliness across multiple devices.
- Upgrade encryption and authentication protocols, and transparently communicate these measures to users.
- Establish real-time feedback channels for users to report issues and suggest improvements.
- Develop seamless escalation protocols for complex queries to ensure that customers can access human assistance when needed.

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APPENDIX

QUESTIONNAIRE

Questionnaire for Research on Chatbots and Customer Experience at First Bank
Lagos

Section A: Demographic Information

Age: _____

Gender:

Male Female Prefer not to say

Occupation: _____

Frequency of Bank Visits:

Daily Weekly Monthly Rarely

Section B: Chatbot Usage

How frequently do you use the First Bank chatbot (Fibani)?

Never Rarely Sometimes Often Always

Which services have you used via the chatbot? (e.g., account balance inquiries, funds transfer, bill payments):

Section C: Perceived Usefulness (PU)

Rate the following statements on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree):

- The chatbot helps me complete banking transactions quickly.
- The information provided by the chatbot is accurate and reliable.
- Using the chatbot improves my overall banking experience.

Section D: Perceived Ease of Use (PEOU)

- The chatbot interface is easy to navigate.
- It is simple to find the information I need through the chatbot.
- I find it effortless to use the chatbot for routine banking tasks.

Section E: Chatbot Trust (CT)

- I trust the chatbot to handle my banking inquiries securely.
- The chatbot demonstrates reliability in its responses.
- I feel confident in the data protection measures employed by the chatbot.

Section F: Customer Satisfaction (CS)

- Overall, I am satisfied with the chatbot service provided by First Bank.
- The chatbot meets my expectations in addressing my banking needs.
- I am pleased with the quality of service provided by the chatbot.

Section G: Intention to Use

- I intend to continue using the chatbot in the future.
- I would recommend the chatbot service to other First Bank customers.
- I believe the chatbot will be an integral part of my future banking interactions