CHATBOT SERVICE QUALITY AND CUSTOMER LOYALTY TOWARDS MOBILE FINTECH SERVICE PROVIDERS IN CALABAR, NIGERIA

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Abstract
This study investigated how the quality of chatbot services influences customer loyalty among users of mobile financial technology platforms in Calabar, Cross River State, Nigeria. The research was motivated by the increasing deployment of AI-powered chatbots in the Nigerian FinTech industry and the limited empirical evidence regarding their contribution to customer retention and loyalty. Specifically, the study examined the effects of chatbot reliability, responsiveness, and empathy on customer loyalty. A cross-sectional survey design was adopted. Data were obtained from 316 active users of mobile FinTech applications through structured questionnaires. Descriptive statistics and multiple regression analysis using SPSS version 27 were employed for data analysis and hypothesis testing. Findings revealed that chatbot reliability, prompt responsiveness, and empathetic interaction each exerted a positive and significant influence on customer loyalty. The study therefore concludes that dependable, interactive, and user-oriented chatbot systems are essential for strengthening customer trust, satisfaction, and continued patronage within the Nigerian FinTech environment. It was recommended that FinTech firms should improve chatbot accuracy, speed of response, personalization, and courteous interaction in order to enhance long-term customer relationships and loyalty.

Keywords: Chatbot Service Quality, reliability, responsiveness, empathy, Customer Loyalty, FinTech Services.

1.1. Background to the study

The development and rapid integration of artificial intelligence–driven chatbots into service delivery processes have been largely motivated by the inherent limitations of fully human-mediated service systems (Alhammadi, 2023). Beyond the accelerating pace of digital transformation, persistent inefficiencies within human-dependent service infrastructures have further compelled organisations to adopt chatbot technologies as a more efficient and scalable alternative (Chong et al., 2021). In particular, inconsistent service availability, delayed response times, human fatigue, performance variability, and ineffective handling of customer enquiries have long undermined the efficiency and reliability of service delivery, resulting in

diminished customer satisfaction (Dube, 2024). AI-driven chatbots were therefore introduced to fill these gaps by providing continuous availability, faster response times, consistent performance, and more accurate handling of customer enquiries, thereby enhancing overall service quality (Rawal et al., 2022). In this context, chatbots service quality entails the extent to which AI-driven chatbots deliver accurate, timely, reliable, and user-oriented responses that effectively meet customer needs and enhance their overall service experience (Uzoka et al., 2024). It reflects the ability of the chatbot to consistently provide efficient, dependable, and responsive support that aligns with customer expectations and facilitates seamless service interactions.

In a bid to enhance service interactions, service providers including financial technology (FinTech) companies, are implementing quality-improvement initiatives to improve the reliability, responsiveness and empathy capacity of chatbots (Kediya et al., 2023). While chatbots service reliability focuses on the ability of the system to consistently deliver accurate and dependable responses (El-Shihy et al., 2024), chatbots responsiveness reflects the promptness and timeliness with which customer enquiries are addressed and resolved (Kediya et al., 2023). On the other hand, chatbots service empathy captures the extent to which the system recognizes and appropriately responds to customers' needs and concerns in a user-centred manner (Othayoth & Khanna, 2024). These service quality dimensions are increasingly being intensified for AI chatbots, especially in the financial sector, because customers now expect faster, more reliable, and personalized digital interactions (Hang et al., 2026). In fact, research has shown that enhancing reliability, responsiveness, and empathy in chatbots helps FinTech providers improve user satisfaction, build trust, and strengthen long-term customer loyalty (Tariq et al., 2026; Wahid & Awad, 2025; Graham et al., 2025).

However, in the Nigerian context, customer loyalty towards FinTech providers is inconsistent as customers rotate among various service providers for fear of overdependence risks on a single provider (Obananya, 2020). Given the technological and infrastructural challenges in Nigeria, FinTech services sometimes experience network downtime, slow transaction processing, and limited system integration, which disrupts seamless service delivery (Ogbeide & Ikande, 2021). Customers may also encounter frequent errors in mobile applications or delays in automated responses from chatbots, undermining confidence in the service. Additionally, irregular power supply and poor internet connectivity in certain regions further exacerbate these issues, leading users to alternate between multiple providers to ensure their financial needs are consistently met (Sulaiman et al., 2021). In response to this, mobile FinTech service providers, including Opay, PalmPay, MoniePoint, among others, have fully integrated chatbots to assist customers in service delivery. However, due to insufficient research evidence, it is unclear whether or not these AI-driven quality improvements have resulted in improved customer loyalty towards these providers. To this end, this study was therefore conducted to determine the extent to which AI chatbots service quality dimensions (such as reliability, responsiveness and empathy) have influenced customer loyalty towards mobile FinTech service providers in Calabar, Cross River State.

1.2. Statement of the problem

Prior to the integration of AI-powered chatbots into customer service systems, mobile FinTech service providers in Nigeria largely depended on human personnel to manage customer interactions and service delivery. However, this traditional approach was constrained by several operational and behavioural limitations, including staff unavailability, delayed response time, work-related fatigue, and in some cases, unfavourable attitudes towards customers (Owusu & Awunyo-Vitor, 2025). In addition, ineffective communication skills and inadequate understanding of customer enquiries (particularly among users with low

literacy levels) further reduced the quality of service delivery (Bashir et al., 2025). As a result, many customer enquiries and transaction-related issues were either not addressed promptly or remained unresolved, leading to dissatisfaction, increased complaints, and, in extreme situations, customer defection to alternative service providers (Obananya, 2020).

In response to these challenges, mobile FinTech companies have increasingly adopted AI-driven chatbots to enhance service efficiency, provide real-time support, and improve overall customer experience (Abdulquadri et al., 2021). While this technological shift is expected to address the shortcomings associated with human-based service delivery, there remains a lack of empirical clarity regarding its effectiveness in fostering customer loyalty within the Nigerian context. Existing studies by Nigerian scholars have predominantly focused on service quality and customer behaviour in sectors such as conventional banking, hospitality, petroleum retailing, transportation, and telecommunications (Obananya, 2020; Nwankpa et al., 2025, Enemuo & Carim, 2021), with limited attention given to chatbot-driven interactions in mobile FinTech services. Consequently, it is uncertain whether improvements in chatbot service quality (particularly in terms of reliability, responsiveness, and empathy) translate into increased customer loyalty. This study was therefore undertaken to address this gap by examining the relationship between chatbot service quality and customer loyalty among mobile FinTech users in Calabar, Nigeria.

1.3. Objectives of the Study

The general objective of the study was to investigate the relationship between chatbot service quality and customer loyalty towards mobile FinTech providers in Calabar. The specific objectives were to:

1. determine the influence of chatbot reliability on customer loyalty;
2. examine the effect of chatbot responsiveness on customer loyalty; and
3. assess the impact of chatbot empathy on customer loyalty among FinTech users.

1.4. Research Questions

This study was guided by the following research questions:

1. What is the effect of chatbot service reliability on customer loyalty towards mobile FinTech service providers in Calabar?
2. To what extent does chatbot service responsiveness influence on customer loyalty towards mobile FinTech service providers in Calabar?
3. What is the effect of chatbot service empathy on customer loyalty towards mobile FinTech service providers in Calabar?

1.5. Research Hypotheses

This study tested the following null research hypotheses:

1. H_o: Chatbot service reliability has no significant effect on customer loyalty towards mobile FinTech service providers in Calabar.
2. H_o: Chatbot service responsiveness has no significant effect on customer loyalty towards mobile FinTech service providers in Calabar.
3. H_o: Chatbot service empathy has no significant effect on customer loyalty towards mobile FinTech service providers in Calabar.

2. Literature Review

2.1. Theoretical framework

This study was based on the expectancy-disconfirmation theory (EDT) propounded by Oliver (1980). The theory provides a strong foundation for this investigation because it explains how customers form expectations prior to service use and subsequently compare perceived performance with those expectations to determine satisfaction or dissatisfaction.

2.1.1. Expectancy-disconfirmation theory (EDT)

Expectancy–disconfirmation theory (EDT), originally advanced by Oliver (1980), explains how customers evaluate service experiences by comparing pre-consumption expectations with actual performance outcomes. The central argument of the theory is that customer satisfaction is determined by the degree of congruence or discrepancy between expected and perceived service performance, which subsequently shapes behavioural intentions such as continued usage and loyalty (Oliver, 1980; Elkhani et al., 2018). The theory posits that when service performance exceeds prior expectations, positive disconfirmation occurs, leading to satisfaction, whereas performance falling below expectations results in negative disconfirmation and dissatisfaction. In digital service environments, particularly those driven by automated systems, users form expectations regarding speed, accuracy, and interaction quality, and these expectations become critical benchmarks for evaluating service encounters (Bhattacherjee, 2001; Susanto et al., 2022; Alalwan, 2020; Ofori et al., 2021).

In the context of this study, EDT provides a suitable theoretical lens for examining the relationship between chatbot service quality and customer loyalty towards mobile FinTech service providers. The theory suggests that users approach chatbot interactions with predefined expectations regarding reliability, responsiveness, and empathy, and their evaluation of these interactions determines their level of satisfaction and subsequent loyalty. Where chatbot performance meets or surpasses these expectations, users are more likely to develop positive perceptions of the service provider, leading to sustained engagement and loyalty. Conversely, unmet expectations may result in dissatisfaction and switching behaviour. Therefore, EDT offers a structured basis for understanding how chatbot service quality dimensions influence customer loyalty within the mobile FinTech context in Calabar, Nigeria.

2.2. Conceptual framework

This study centred on examining the influence of chatbot service quality on customer loyalty towards mobile FinTech service providers in Calabar, Nigeria. The primary objective was to establish the causal relationship between the independent variable (chatbot service quality) and the dependent variable (customer loyalty) within the context of mobile financial services. Accordingly, the independent variable (chatbot service quality) is operationalised using three key dimensions, namely reliability, responsiveness, and empathy (Pillai & Sivathanu, 2020; Chattaraman et al., 2022; Ashfaq et al., 2020; Nissen et al., 2024). The dependent variable (customer loyalty) is conceptualised in terms of satisfied user experience, customer trust, repeat usage intention and positive recommendation (Wahid & Awad, 2025).

Within the scope of this study, chatbot service reliability is defined as the ability of the system to consistently provide accurate information and perform tasks without errors or breakdowns. Chatbot service responsiveness is considered as the promptness and speed with which the system attends to customer requests and resolves issues. Chatbot service empathy is viewed as the extent to which the chatbot recognises and responds appropriately to users' needs in a manner that enhances their experience. Customer loyalty, on the other hand, is operationalised as the likelihood of users to continue using a particular mobile FinTech platform, engage in repeated transactions, and recommend the service to others. Based on the hypotheses of the study, it was assumed that a functional relationship exists between chatbot service quality and customer loyalty among mobile FinTech users. As depicted in the

conceptual model (Figure 1), each dimension of chatbot service quality (reliability, responsiveness, and empathy) was expected to exert an individual effect on customer loyalty. In addition, the combined effect of these dimensions was anticipated to significantly influence customer loyalty as a unified construct. Consequently, the model suggests that improving chatbot service quality in an integrated manner enhances customer loyalty, thereby highlighting the strategic importance of AI-driven service delivery in the FinTech sector.

2.2.1. Chatbots in FinTech service delivery

Chatbots are automated conversational agents that interact with users through natural language to provide information and perform service tasks (Gnewuch et al., 2019). They are AI-enabled service interfaces capable of delivering consistent and scalable customer interactions (Huang & Rust, 2021). Similarly, Ashfaq et al. (2020) view chatbots as digital assistants embedded within service platforms to facilitate real-time communication and problem resolution. Across these definitions, a common theme is that chatbots function as AI-driven interactive systems that automate customer service processes through natural language communication. Their emergence within the FinTech industry is closely linked to the growing demand for continuous service availability, cost reduction, and enhanced operational efficiency in digital financial services. The rapid advancement of artificial intelligence, increased smartphone penetration, and the need for instant financial transactions further accelerated their adoption in FinTech environments (Jenneboer et al., 2022; El-Shihy et al., 2024).

The integration of chatbots into FinTech service delivery was primarily driven by persistent limitations associated with traditional service systems, including slow response time, high operational costs, and inconsistent service quality (Huang & Rust, 2021). As digital financial services expanded, firms required scalable solutions capable of handling large volumes of customer enquiries without compromising efficiency. AI-powered chatbots addressed these challenges by providing 24/7 service access, rapid response capability, and consistent interaction quality, thereby improving overall service delivery (Gnewuch et al., 2019; Ashfaq et al., 2020). Empirical evidence suggests that chatbot service quality (particularly in terms of responsiveness, reliability, and conversational effectiveness) significantly enhances customer satisfaction and contributes to loyalty formation in digital service contexts. Furthermore, in FinTech settings, chatbots have improved service delivery by enabling instant transaction support, reducing waiting time, enhancing customer engagement, and supporting personalised financial interactions (El-Shihy et al., 2024). These improvements have positioned chatbots as a critical component of modern financial service systems.

2.3 Review of Empirical Studies

Empirical evidence shows that chatbot service quality significantly influences customer satisfaction, trust, engagement, and loyalty in digital financial services. In the United Kingdom, Alalwan (2020) found that chatbot responsiveness and perceived usefulness enhance customer satisfaction and loyalty among online banking users. However, the study emphasized adoption factors and paid limited attention to empathy as a service quality dimension.

Similarly, Gnewuch et al. (2019) reported that interaction quality, particularly response accuracy and speed, significantly predicts user satisfaction and continued usage of banking chatbots in European financial institutions. Nevertheless, customer loyalty was not directly examined. Huang and Rust (2021), using data from U.S. financial service firms,

observed that AI reliability and consistency strengthen trust and satisfaction, indirectly supporting loyalty, although loyalty itself was not directly measured.

Studies in emerging markets produced comparable findings. Pillai and Sivathanu (2020) revealed that chatbot reliability and responsiveness positively influence customer satisfaction and continuance intention among Indian FinTech users, while Ashfaq et al. (2020) found that responsiveness and reliability significantly improve customer satisfaction in Pakistan's banking sector. Both studies, however, omitted empathy and gave limited attention to loyalty outcomes.

Further evidence from developed economies highlights the importance of empathy. Chattaraman et al. (2022) demonstrated that chatbots exhibiting higher levels of empathy and responsiveness significantly improve customer trust and loyalty intentions. Likewise, Belanche et al. (2020), McLean and Osei-Frimpong (2019), Adam et al. (2021), and Verhagen et al. (2021) established that chatbot service quality dimensions such as responsiveness, reliability, interaction quality, and perceived intelligence positively affect trust, satisfaction, retention, and future usage. However, these studies either overlooked empathy or failed to assess loyalty comprehensively.

Recent studies provide stronger evidence for the role of empathy in chatbot interactions. Liu-Thompkins et al. (2026), grounded in Social Presence Theory, found that empathetic chatbot responses significantly improve customer satisfaction, reduce frustration, and increase reuse and recommendation intentions. Similarly, Chung et al. (2022) showed that emotional expressions and personalized responses enhance customer satisfaction, repurchase intentions, and positive word-of-mouth. Nissen et al. (2024) further confirmed that empathic chatbots improve customer satisfaction by increasing perceived social presence and information quality, although customer loyalty was not directly tested.

3.0 Methodology

This study adopted a cross-sectional survey research design. This design enabled the collection of data from a large number of mobile FinTech platform users at a single point in time. This facilitated an efficient investigation of the relationship between the study's variables within a limited timeframe. The target population of the study comprised all users of mobile FinTech platforms in Calabar, Cross River State. This population was unknown because there is no official, singular data point for the exact total population of mobile FinTech platform users in Calabar, Cross River State, as of 2026. The Topman sample size determination procedure was therefore applied to arrive at a sample size of 357.

Out of the 357, only 316 responded, hence, primary data were collected from 316 active users of mobile FinTech platforms in Calabar through structured questionnaires. Descriptive statistics were used to summarize demographic characteristics and responses, while multiple regression analysis was employed to test the hypotheses using SPSS version 27.

4.0 Data Presentation and Analysis

4.1Respondents' Demographic Characteristics

The study involved 316 mobile FinTech users in Calabar. Most respondents were aged 25–31 years (44.6%), followed by those aged 32–38 years (28.8%), indicating that the sample was largely composed of active young and middle-aged adults. Females constituted 53.2% of the respondents, while males accounted for 46.8%. More than half were single (53.5%), and the majority (63.9%) had used mobile FinTech services for 2–4 years. These characteristics suggest that respondents possessed adequate experience to provide reliable information on chatbot services.

4.2 Descriptive Statistics

All study variables recorded mean scores above the benchmark of 3.0, indicating positive perceptions of chatbot service quality and customer loyalty. Chatbot service reliability had the highest mean (M = 3.7996), followed by responsiveness (M = 3.5696), empathy (M = 3.5671), and customer loyalty (M = 3.5182). Standard deviations ranged from 1.12644 to 1.27681, showing moderate variation in respondents' opinions. Overall, respondents perceived chatbot services as reliable, responsive, and empathetic, although loyalty levels remained moderate.

4.2 Test of Hypotheses

Multiple regression analysis was used to examine the effects of chatbot service reliability, responsiveness, and empathy on customer loyalty.

The model summary revealed a strong relationship between the predictors and customer loyalty ($R = 0.964$), with an explanatory power of 92.9% ($R^2 = 0.929$). The ANOVA result confirmed that the model was statistically significant ($F = 1366.776$, $p < 0.05$).

The coefficient results showed that: Chatbot service reliability significantly influenced customer loyalty ($\beta = 0.573$, $p = 0.000$). Again, that Chatbot service responsiveness significantly influenced customer loyalty ($\beta = 0.113$, $p = 0.008$). Finally, that Chatbot service empathy significantly influenced customer loyalty ($\beta = 0.319$, $p = 0.000$).

Since all the p-values were below 0.05, the three null hypotheses were rejected, while the three alternative hypotheses were accepted. Results show that reliability emerged as the strongest predictor of customer loyalty, followed by empathy and responsiveness.

4.3 Discussion of Findings

The findings indicate that chatbot service reliability significantly enhances customer loyalty. This supports Huang and Rust (2021) and Pillai and Sivathanu (2020), who reported that reliable AI services improve customer trust, satisfaction, and continued usage.

Chatbot responsiveness was also found to positively affect loyalty, supporting Alalwan (2020) and Gnewuch et al. (2019). Quick and accurate responses improve user experience and encourage continued patronage.

Similarly, chatbot empathy significantly influenced customer loyalty. This aligns with Liu-Thompkins et al. (2026) and Chung et al. (2022), who found that empathetic and personalized chatbot interactions increase satisfaction, trust, and positive behavioural intentions.

5.1 Summary of Findings

The study established that:

1. Chatbot service reliability significantly and positively affects customer loyalty.
2. Chatbot service responsiveness significantly and positively affects customer loyalty.
3. Chatbot service empathy significantly and positively affects customer loyalty.

The findings demonstrate that both functional qualities (reliability and responsiveness) and relational qualities (empathy) are important determinants of loyalty among mobile FinTech users.

5.2 Conclusion

The study examined the effect of chatbot service quality on customer loyalty towards mobile FinTech providers in Calabar. Findings revealed that reliability, responsiveness, and empathy

all exert significant positive effects on customer loyalty. The study concludes that effective chatbot deployment enhances customer satisfaction, trust, and long-term commitment to FinTech platforms. Therefore, high-quality chatbot services are essential for sustaining competitiveness and customer retention in the digital financial sector.

5.3 Recommendations

1. FinTech providers should improve chatbot reliability through continuous monitoring, error detection, and transaction verification systems.
2. Chatbot responsiveness should be enhanced through faster processing, real-time support, and proactive communication features.
3. Providers should strengthen chatbot empathy by incorporating personalized responses, emotion recognition, and user-centred interaction capabilities.

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