INSIGHTS (BHALWAL)
INTERNATIONAL JOURNAL OF HUMANITIES, MANAGEMENT, AND SOCIAL SCIENCES (IIJHMSS)
VOLUME 3, ISSUE 4, 2026 p-ISSN: 3104-8722 e-ISSN: 3104-8730

ARTIFICIAL INTELLIGENCE-DRIVEN TRANSFORMATION OF BANKING SERVICES: EXAMINING ITS INFLUENCE ON CUSTOMER TRUST, SATISFACTION, AND LOYALTY

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Abstract

Intelligent chatbots, predictive analytics, automated fraud detection, and personalized financial recommendations are just a few areas of banking services that are being transformed by artificial intelligence (AI). While these technologies are more convenient and efficient to operate, the long-term effectiveness is critically dependent on customer perceptions of service quality, security and institutional reliability. This study explores the links and connections between Artificial Intelligence (AI) banking services, customer trust, customer satisfaction and customer loyalty. The goal is to develop an integrated framework to explain the relationship between technological service characteristics and customer outcomes of the relationship. This study is based on the Technology Acceptance Model (TAM), the Information Systems Success Model (ISSM) and the expectation-disconfirmation theory. The proposed data collection strategy is a quantitative cross-sectional survey design, which will gather data from customers who have used AI banking services. A structured questionnaire and partial least squares structural equation modeling (PLS-SEM) are suggested to evaluate the relationships between the study variables. Five hypotheses are tested: The impact of AI service quality on trust, the role of usefulness and service responsiveness in level of satisfaction, the impact of trust and satisfaction on level of loyalty, and the negative relationship between perceived level of privacy risk and trust. There is recent research on AI-driven banking that corroborates the importance of these relationships, and their intensity is subject to variation in contexts. According to the article, providing convenience of technology is not enough to retain customers. Reliable performance, responsible data management, transparency in automated decisions, and the ability to receive human assistance is also crucial. The framework proposed here can serve as a basis for future empirical study and can also serve as practical guidance to conventional and Islamic banks for the development of safe, trustworthy, and customer oriented AI services.

Keywords: *Artificial Intelligence, AI Service Quality, Customer Loyalty, Customer Satisfaction, Customer Trust, Data Privacy, Digital Banking*

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1. Introduction

Artificial intelligence (AI) has been becoming a consistent enabler for digital revolution & transformation in the banking sector all over the world. The use of AI-powered systems is growing in financial institutions, where it is used for automating repetitive tasks, analyzing customer patterns, identifying fraudulent activity, providing tailored financial advice, and enhancing customer service. The banking landscape is being revolutionized by technologies like machine learning, natural language processing, predictive analytics, and generative AI, transforming the way banks provide services and nurture customer relationships. AI technologies like machine learning, NLP, predictive analytics, and generative AI are increasingly transforming how banks deliver their services and how they interact with their customers. Banks are adopting and customizing AI tools that are changing the way they interact with customers and deliver their services, including machine learning, natural language processing, predictive analytics and generative AI.

Earlier, traditional banking had strong dependence on its physical branches. Digital and mobile banking reduced the need for customers to go to the bank, as they could log securely access banking services from anywhere & perform their transactions. Now the biggest quantum leap in the recent time is AI which transformed digital systems to understand requests, to recognize patterns, to generate responses and to facilitate specific decisions. AI-powered chatbots can answer basic questions, for instance, or predictive systems can detect irregular transaction behavior and alert users. AI can be used to create personalized recommendation systems that guide customers through financial products and automated assistants to advise on digital banking features. The applications can enhance convenience and save the time needed for the regular banking process.

But technology doesn't always lead to a good customer experience. Customers might value quick automated service, but still worry about privacy, data security, incorrect recommendations, and the lack of human support. In banking, it is especially crucial as customers rely on financial institutions with sensitive information and anticipate that they will safeguard their assets. According to Matlala (2026) AI holds significant transformative potential for financial sector by enhancing efficiency, driving innovation, and promoting financial inclusion.

The Bank for International Settlements released a survey-based study that revealed that most respondents were less comfortable with AI than they were with humans, especially when it came to financial and medical services, and that they were worried about data breaches and misuse (Aldasoro et al., 2024). In recent years, the BIS has placed a greater emphasis on data quality, privacy and security, and third-party dependencies in the responsible use of AI in the financial sector (Crisanto et al. 2026).

Customer trust, satisfaction, and loyalty are crucial metrics for the effective implementation of AI transformation. Trust is customers' confidence in a bank and technological systems. Satisfaction relates to the assessment of service and is linked to the intention to continue using the service, preference for the institution and the desire to recommend it, whereas loyalty is the use of the service, the preference for the institution and the willingness to recommend the service.

These relationships have been explored in an empirical study of recent years under varying banking contexts. For instance, Kumar and Rani (2025) aimed to explore the role of AI in neo-banking services' impact on customer trust and loyalty in India. Personalization and responsiveness were also found to be important factors in the service quality in their study. While the impact of AI use could differ among banking systems and among customers, the underlying message is that customers are still

at risk. Therefore, the potential of AI in banking is not limited to the aspect of operational efficiency, but should also be evaluated in terms of customer perception and long-term customer relationships.

1.1. Problem statement

Banks have started to invest in AI in order to enhance the service delivery, cut down the operational costs, and boost their competitive edge. However, this success will depend on how useful, reliable, secure and responsive the AI-powered services are to the customers. Though a technological solution may speed up the service, it might not meet the needs of customers. Similarly, suggestions particular to the customer could make life more convenient, but also raise concerns on how the financial information is being gathered and utilized. Mistaken answers, automatic decisions that don't provide an explanation and restricted ability to speak to a human can undermine customers' trust in their banks.

There is also an issue surrounding the link between satisfaction and loyalty. A customer could like an AI chatbot without turning into a loyal client of the institution. A customer may enjoy an AI chatbot without becoming a loyal customer of the institution. At the other end of the spectrum, a customer can remain with a bank even if it doesn't meet his needs because he has a salary agreement with the bank, he has incurred switching costs, or he doesn't have a lot of options. Therefore, the satisfaction and loyalty of the customer should not be confused as the same product.

This study aims to identify how the AI service quality impacts customer trust and satisfaction, the relationship between customer satisfaction and customer loyalty, and how privacy issues can be a threat to the customer's trust. A unified approach is required in order to study these relationships in a systematic way, especially in new banking markets.

1.2. Research Objectives

The study aims to:

1. Examine the relationship between AI-driven banking service quality and customer trust.
2. Investigate how perceived usefulness, personalization, and responsiveness contribute to customer satisfaction.
3. Assess the relationship between customer trust and customer loyalty.
4. Examine the relationship between customer satisfaction and customer loyalty.
5. Investigate the negative association between perceived privacy risk and customer trust.

1.3. Research Questions

The research addresses five questions:

1. How is AI-driven banking service quality associated with customer trust?
2. How do perceived usefulness, personalization, and responsiveness relate to customer satisfaction?
3. What relationship exists between customer trust and customer loyalty?
4. How is customer satisfaction associated with customer loyalty?
5. How does perceived privacy risk relate to customer trust in AI-enabled banking?

1.4. Significance of the Study

The study provides a theoretical and practical contribution. It aims to bring together elements of technology acceptance, information systems quality, customer satisfaction, and trust to a specific and targeted lens on AI-enabled banking. In reality, the framework can assist bank managers in determining the features of their services that are worth considering when using AI. The focus is also on the importance of safeguarding customer’s data and ensuring that they receive the required

information & human assistance at all times. This study will provide implications for the banking sector in Pakistan as well as other digital financial service providers.

2. Literature Review

According to Supriyadi et al., (2026) banking institutions face increasing pressure to transform their business models through digital technologies while advancing sustainability objectives, yet existing research remains fragmented in explaining how digital innovation is translated into sustainable outcomes. Méndez Reyes et al., (2026) studies the impact of digital financial education along with Artificial Intelligence adoption on sustainable economic development in an emerging urban economy. This study explores the impacts and potential of AI to transform banking. AI in almost everything: Customer service, fraud prevention, transaction monitoring, credit scoring, risk assessment, and personalized banking. These applications can enhance information processing speed and aid decisions with a lot of data. Tuge & Msweli (2026) have worked on the similar theme as this study and examined the existing literature on AI's potential to enhance transparency, regulatory compliance, and trust, significant barriers prevent its effective integration into banking workflows. Sadok et al. (2022) teases out the ramifications of artificial intelligence (AI) use in the credit analysis process by banks and other financing institutions. Impact of AI customer facing applications on user experiences is important to this study because they are directly interacting with the customers. Routine queries can be answered 24/7 by chatbots and virtual assistants. Predictive analytics can be utilized to gain insight into customer needs and recommendation systems can display financial products/services relevant to the customer. According to Nguyen & Le (2025) in the digital transformation scenario, banks must strengthen business sustainability through digital technologies, such as artificial intelligence-based chatbots. Crucial evidence illustrates that using chatbots allows banks to enhance business performance and bank–customer relationship.

Ali et al. (2026) challenged that in today's technologically advanced era, the banking sector still faces significant challenges in mitigating security attacks, despite the availability of innovative technologies. Therefore, efficiency of AI applications is dependent on their accuracy, reliability, availability and usability for specific applications, however. If a request is ignored repeatedly, it can make customers angry, despite reducing waiting time, it is considered a self-service touch. Similarly, a recommender system might be considered as a bad system if consumers think the recommended items are not relevant and the system is being intrusive. According to Tran Thi Thu & Nguyen Thanh (2026) digital transformation has become a strategic priority for commercial banks seeking to improve operational efficiency and competitiveness. Assessing the implementation of AI must be done from an organizational and customer perspective. Reducing fees may well be a positive development for banks, but long-term value will also depend on the quality of the service provided to customers and its availability.

2.1. Technology Acceptance Model

Carvache-Franco et al., (2026) used TAM to investigate consumer adoption of AI-powered e-commerce applications in Ecuador through an extended Technology Acceptance Model framework. A model used to predict technology acceptance is called the technology acceptance model (TAM) (Davis, 1989). Perceived usefulness is the extent to which people think a technology will make their jobs easier, perceived ease of use is the amount of effort required to use the technology.

In the banking industry, for instance, AI can be helpful for the customer, as it can quickly and efficiently deliver information to the customer or process transactions or respond to simple inquiries.

Easy usability is also relevant if users can easily use an AI service without needing to know a lot of instructions or technical skills. These perceptions can lead to satisfaction since customers assess services, in part, on the benefits they provide. Usefulness may not be enough, though. If customers feel that the convenient system is not secure or reliable, it may not be satisfactory. In the study on AI adoption in banking (Digital Business, 2025), the perceived trust and perceived risk were added to the TAM. The results reveal the significance of understanding the role of technology features and customer considerations in the context of exploring AI adoption. The current study illuminates the rationale behind why customers might appreciate AI services, whereas banking holds other expectations regarding confidentiality. Banking has other expectations regarding the confidentiality, whilst the present study serves to explain why customers might appreciate the services of AI.

2.2. Customers Trust and AI Service Quality

According to Rage (2026) Artificial intelligence-driven customer service is transforming relationship management through automated interactions, yet its success hinges on trust, service quality, and satisfaction—especially in fragile contexts. Service quality is the customer's evaluation of whether or not a service is satisfying and meeting their expectations. For digital banking, dimensions that are relevant are: Reliability, information accuracy, accessibility, responsiveness, and problem resolution.

DeLone and McLean (2003) provide three aspects of the success of Information Systems: system quality, information quality, and service quality. These dimensions are relevant when evaluating banking solutions with AI as they require a reliable, accurate and effective service.

There are close connections between these service attributes and customer trust. If the AI system provides accurate responses and handles simple requests seamlessly, customers are likely to be more confident in its capabilities. However, if the errors happen repeatedly, there may be a loss of confidence in the system or the system provider.

For the Indian context Kumar and Rani (2025) conducted a study with PLS-SEM on 439 consumers of AI-powered neo-banking services in India. They discovered that service quality was associated to customer trust, personalization and responsiveness were associated to service quality and customer loyalty was associated to service quality.

2.3. Customer Satisfaction in AI Banking

Bajaba et al., (2026) examined how AI-enabled service experiences influence customer engagement in Saudi Arabia’s banking sector. Customer satisfaction is the assessments of customer's service experiences. Based on the theory of expectation disconfirmation, it can be assumed that the relationship between the disconfirmation of expectation and satisfaction is partly caused by when performance is not appropriate or is better than expected (Oliver, 1980). Consumers want to be seen by systems that are responsive in responding—either immediately or with support—to use digital banking capabilities in the absence of a branch.

However, satisfaction can decrease if auto systems respond incorrectly or if they don't address a problem, or if they make it difficult to connect with a person. That is why the overall interaction with the individual is more important than automation. The researchers looked into the attitude of digital banking customers and their satisfaction with the digital banking service, belief in the reliability of AI processes, and their willingness to adopt AI, all in a 2026 survey of 385 digital banking users. As per the findings, among all the factors, the perceived usefulness, behavioral intention, and the acceptance

of AI are factors impacting satisfaction, highlighting the importance of value added by technology, and that of customer involvement (Kumar, 2026).

This study is concerned with three of the more common characteristics that can be related to satisfaction: usefulness, personalization, and responsiveness. These are likely to be critical when customers think that AI is a good option to improve their banking experience.

2.4. Customer Loyalty in Digital Banking

According to Ntt et al., (2026) In rapidly digitizing emerging countries, the enhancement of brand loyalty is essential to drive growth and create a sustainable business. They tested an integrated digital, ethical, and operational framework Customer loyalty is when a customer refuses to use another service, buys from a provider and recommends the provider to others. In the finance sector, loyalty can help to secure customer retention, cross-service engagement, and foster long-term relationships.

The convenience of AI can be leveraged for loyalty and how it can deliver relevant information, in addition to making the delivery of services efficient. But, if there is anything else that is not AI, then the customer can decide to stay with a bank, which may include salary plans, account requirements or switching costs. It is therefore not a measure of true loyalty that is being relied upon if it is based on continued use. Kumar and Rani (2025) found that the trust between customers and customers' banks was positively correlated with customer loyalty, and the service quality was positively correlated with customer loyalty in the context of AI technology in neo-banking. Their research shows that AI-driven customer relationships are not just about implementing automated functionalities. Trust and satisfaction are important constructs which are closely related to customer loyalty, but are not identical perceptions. Satisfaction represents the assessment of customers' experience with services in the past while trust indicates customers' expectations of future services. The analysis of the relationship between trust, satisfaction, and customers' loyalty may then help to better understand the determinants of customers' long-term involvement with and commitment to a bank.

2.5. Perceived Privacy Risk and Customer trust

Geebren & Jabbar (2025) indicated that gender, experience, and frequency of use significantly moderate the relationships between trust in mobile banking and its antecedents. In the banking sector, AI can be applied to evaluate financial information and detect fraud, offer tailored suggestions, and forecast customer actions. They can help to improve service provision, but can also cause problems of security, data over-collection, profiling and misuse. Perceived privacy risk is the fear that customers have of the consequences of the collection, storage and processing of their personal data. If customers think their financial details aren't well-protected, they might lose trust in AI-powered banking. In high-stakes services, consumers' concerns included data breaches and misuse, and they overall trusted AI less than humans, according to Aldasoro et al. (2024). In recent years, BIS has addressed various data governance, privacy, and security challenges concerning the use of AI data in the financial sector (Crisanto et al., 2026).

There is also the risk that privacy is becoming a determinant of the meaning of personalisation to consumers. If the aim of the recommendations is explained, they can be regarded as helpful, if not, they can be regarded as intrusive; they can be regarded as intrusive if the customers cannot explain how to get the information they need. Good communication, appropriate access control systems and effective complaint handling should therefore be complemented by technical safeguards. These measures can alleviate some of the customer concerns and help maintain customer trust.

3. Research Gap

The adoption of AI, service quality, trust, satisfaction and loyalty in banks has been explored in different studies. The connections between these variables need to be explored, however, as AI applications and customer expectations vary from institution to institution and market to market. The quality of service and usefulness should not be the only metrics used for successful AI adoption; customer trust and satisfaction should be considered alongside these metrics.

Second, privacy risk should be explicitly considered as customers can be looking for convenience, but still want to be mindful of the handling of their financial data. Thirdly, country-specific evidence may not be directly generalizable across markets. Accordingly, the present study provides an appropriate context for examining the proposed relationships within Pakistan's conventional and Islamic banking systems.

This study tackles these gaps with a specific framework developed into five hypotheses. The framework is based around the dimension of service quality and trust, AI service characteristics and satisfaction, trust and loyalty, satisfaction and loyalty, privacy risk and trust.

4. Theoretical Framework

The proposed framework is based on three theoretical perspectives:

The Technology Acceptance Model (TAM) by Davis (1989) explains the acceptance of a technology that takes into consideration perceived usefulness and ease of use. The concepts can also be helpful in comprehending the value customers provide to services geared toward simplifying and streamlining financial transactions, a crucial part of AI in banking.

Delone and McLean (2003) pay attention to system quality, information quality and service quality in their model of success in information systems. These dimensions can be used as a basis for evaluating the trustworthiness and success of services powered by artificial intelligence. The explanation of satisfaction provided by Oliver (1980) is based on the notion of expectation-disconfirmation theory. This view implies that satisfaction is related to the fulfillment of customer expectations regarding AI services.

Many theories can be combined to have a articulate perspective of the relationship between customer perceptions of trust and satisfaction and AI service features and customer loyalty. As privacy issues are likely to impact trust in AI-assisted banking, perceived privacy risk is introduced as an additional construct.

4.1. Conceptual framework



The diagram summarizes the proposed relationships. The arrows represent hypotheses for empirical testing, not confirmed causal effects.

4.2. Research Hypotheses

Five hypotheses are suggested to help maintain the focus and applicability of the model for the empirical investigation.

H1: When the quality of the banking service is improved by AI, customer trust is positively correlated.

The availability of reliable systems, accurate information, and effective support is expected to boost customers' trust in AI-powered banking services.

H2: The perception of the usefulness of AI tools, personalization, and responsiveness are positively related to customer satisfaction with AI banking services.

The more convenient, relevant, and effective AI services are, the more positive the customers will be about the service.

H3: Customer loyalty is positively related to customer trust.

It is expected that customers who trust their banks and trust their AI-powered services will also have greater intentions to continue using and recommending these services.

H4: Customer satisfaction has positive relationship with customer loyalty.

Positive experiences with AI in banking will likely correlate with customer preference and intentions for continued use.

H5: Perceived privacy risk is negatively associated with customer trust.

Users who are concerned with the unauthorized use of their personal information, misuse of personal information, or excessive collection of personal information are more likely to report less trust in AI-enabled banking. These hypotheses are the hypothesized relationships. They should be tested on the basis of empirical data, which is analyzed statistically in the context of a survey.

5. Research Methodology

5.1. Research Design

The study adopts a quantitative, cross-sectional research design to analyze the relationships between the variables of the study; AI-driven banking service quality, customer trust, customer satisfaction, customer loyalty and perceived privacy risk. A quantitative approach is suitable since the research needs the measurement of customer perceptions and testing of relationships between specified variables. Data could be obtained from eligible customers at one specific time from them through a cross-sectional survey. This design can be employed to explore association but not causal relationships and cannot be employed to observe the change in perception over time of the customers.

5.2. Population and Study Setting

The target is adult digital banking customers who have experienced using an AI-powered banking service. These can involve AI chatbots, virtual assistants, customized financial advice, and AI-backed fraud alerts. Data from Lahore, Pakistan, may be obtained from the customers of the conventional and Islamic banks initially with the possibility of sample extension to other cities for wider geographical representation in the future.

Criteria is as follows: Participants must be at least 18 years old, and have an account in a financial institution that provides one or more identifiable banking service that they have used in the past 6 months. Such authentication will not be automatic for ordinary mobile banking users; they would need to be interacting with an AI-based function of the bank, such as an AI-powered chat-bot, virtual assistant, personalized recommendation system, or other obvious AI-based service.

5.3. Sampling Technique and the Sample Size

Responders for the data collection are to be purposively selected from digital banking communities, through university networks and through appropriate permission to conduct customer research via voluntary invitations. A target of some 400 valid responses will be used. A priori statistical power analysis should be used to explain the final sample size for the anticipated effect size(s), number of predictors and planned method of analysis. Attempted to seek responses from the different ages, education, digital banking experience and bank type if possible. Results from purposive sampling are non-representative, therefore the results cannot be generalized for the banking customers in Pakistan in general.

5.4. Data collection Instrument

Variables will be measured using a structured questionnaire. It should include the following sections:

1. Personal Data: Age, education, employment status, and other relevant aspects.
2. Digital banking experience: Digital banking frequency, user experience with AI services at the bank, and banking profile.
3. AI-based services' reliability, accuracy, consistency, and effectiveness.
4. Users' perceptions of usefulness, personalization, responsiveness, and general satisfaction with the AI service experience.
5. Trust that the bank is reliable, acts responsibly, and keeps their customers' information safe.
6. Continued use intention, bank preference and willingness to recommend the bank's services.
7. Privacy Risk: Fears about data collection, access, profiling, and uses.

Scale of 1 – strongly disagree to 5 – strongly agree might be used. Items of measurement need to be modified from already existing scales and tailored to fit the context of AI-driven banking.

5.5. Variables chart

Variable	Proposed indicators	Role in the model
AI service quality	Reliability, accuracy, consistency, support	Predictor of trust
Perceived usefulness	Convenience, efficiency, task completion	Predictor of satisfaction
Personalization	Relevance and suitability of recommendations	Predictor of satisfaction
Responsiveness	Speed and effectiveness of responses	Predictor of satisfaction
Customer trust	Confidence in reliability, integrity, and security	Predictor of loyalty
Customer satisfaction	Overall service evaluation and expectation fulfillment	Predictor of loyalty
Customer loyalty	Continued use, preference, recommendation	Outcome variable
Perceived privacy risk	Concerns about data misuse and unauthorized access	Negative predictor of trust

The indicators are proposed for measurement development and are not claimed to constitute validated scales for this particular study. The questionnaire should be pilot-tested and assessed for reliability and validity before hypothesis testing.

5.6. Pilot Testing and Validity

To determine unclear questions and test the time it will take customers to complete a questionnaire, a pilot study might be undertaken with about 25-40 eligible customers. Content validation by experts in banking, information systems and research methodology may contribute to the establishment of content validity. If the questionnaire is translated into Urdu and English, the translation and back translation procedure should be taken into consideration to ensure that the meaning of the questions would not be lost.

Cronbach's alpha and composite reliability could be used for assessing internal consistency. Convergent validity could be measured by factor loadings and AVE. Heterotrait–monotrait ratio may be used to evaluate discriminant validity. All reliability/validity statistics should be computed from the real data set. The use of numerical results must not be placed before the administration of the questionnaire and analysis of the results.

6. Data Analysis

The analysis would be in five steps

Data screening: Responses would be reviewed for missing data, repetition of responses, inconsistent responses, and inappropriate response patterns.

Descriptive statistics: Characteristics and perceptions of the respondents would be summarized using frequencies, percentages, means and standard deviations.

Assessment of the measurement model: Prior to interpreting the relationships between constructs, reliability, convergent validity, and discriminant validity would be explored.

Assessment of structural model: PLS-SEM could be used to estimate the hypothesized relationships. The selection of PLS-SEM should be based on the research objectives, measurement structure, and data characteristics.

Hypothesis testing: Path coefficients and confidence intervals may be estimated by the bootstrapping technique. The direction, size, uncertainty, and statistical significance of the estimated relationships would be used to test the five hypotheses.

The analysis should then report standardized coefficients, confidence intervals, p-values (where applicable), and explanatory power. The researchers should not take statistical significance as an indication that there is a causal relationship.

6.1. Ethical Considerations

The participation must be voluntary, and informed consent before data collection. Do not ask for passwords, PINs, account numbers or any other unnecessary confidential banking information on the questionnaire. The responses should be kept safely, access should be limited and the results presented in overall terms. The study needs to be approved by the relevant institutional ethics committees prior to its commencement.

6.2. Analytical Discussion

AI efficiency and cost-effectiveness

The first hypothesis suggests that there is a positive relationship between AI service quality and customer trust. The relationship is given rational basis in the literature, as users need reliable and secure knowledge, system and support when using financial services. According to Kumar & Rani

(2025), "Quality of the neo-banking service was correlated with customer trust and loyalty which was influenced by Artificial Intelligence (AI)". They conclude that the study of service quality can be considered as key element in the development of customer relationship.

While this might sound idealistic, customers appreciate AI services when they know they can rely on them to provide accurate responses to simple questions and resolve requests without having to do as much work. But speed of response is not enough. A fast, but wrong answer could negatively impact trust more than a timely, correct response. Therefore, banks need to keep an eye out for accuracy, consistency, and successful problem resolutions. They also need to set up mechanisms for rectifying errors and escalating intricate requests to human agents. These measures can show that AI is not being used unchecked, but with institutional accountability. The hypothesis needs to be empirically tested to see if there is a positive relationship between perceived service quality and trust in the selected population.

6.3. Characteristics of AI Services and Customer Satisfaction

Second hypothesis: There is a positive relationship between customer satisfaction and perceived usefulness, personalization and responsiveness. By doing so, AI can help boost customer satisfaction when it comes to customer transactions, information retrieval, or banking. Leaving services more personalised and making services and services more responsive can help to ensure more relevant services and it can help to shorten the waiting time and customers' efforts.

These attributes are also supported by recent studies. Kumar and Rani (2025) found that personalization and responsiveness are important aspects to improve the quality of AI-powered neo-banking services. Likewise, Kumar (2026) reported the relationships between perceived usefulness, AI adoption, and satisfaction for digital banking users. These attributes, however, do not necessarily engender consistent positive experiences. Recommendations that are too intrusive might be rejected by customers, and it might be ineffective to respond quickly if the question is not answered. Therefore, the study should evaluate the usefulness, relevance and effectiveness of the AI services and not automatically expect that personalization or automation of services lead to higher satisfaction.

6.4. Trust and Loyalty of Customers

The third hypothesis was that the customer's trust would be positively correlated with the customer's loyalty.

Trust with customers can help increase retention because they feel that services and information they provide is reliable and trustworthy. This is a critical factor in banking because of the transactions, data security, and automated recommendations that can lead to the customer's confusion. Kumar and Rani (2025) found that customer trust had a relationship with loyalty in the case of neo-banking. This evidence supports the investigation on trust as a means to a continued relationship with customers.

However, loyalty cannot be guaranteed with just trust. They may change banks due to a variety of financial reasons, such as fees, product fit, service availability, etc., or they may not be able to change banks as it is not convenient for them. Therefore, multiple measures should be used to measure loyalty, such as intention of continued use, preference and willingness to recommend the bank. The proposed hypothesis would assist to find out whether there is a relationship between these outcomes and trust of the selected sample.

6.5. Customer Satisfaction and Customer Loyalty

Esagala & Ntale (2026) revealed positive associations among both service quality and satisfaction on loyalty. Therefore, fourth hypothesis states that there will be a positive correlation

between satisfaction and loyalty. If the customers feel that the bank's artificial intelligence services are fulfilling their expectations, then they are more likely to stay loyal to the bank and promote the use of its AI services. Having easy to access and accurate information, combined with a swift and effective solution to the problem, can make a positive assessment of the banking relationship. But just because a person is satisfied with an interaction with an AI system doesn't necessarily mean that translates to overall bank loyalty. Other criteria customers consider include fees, product choices, complaint resolution and the service quality of services not provided online. Banks should thus separate satisfaction with the AI-powered features and satisfaction with the bank itself. Future research could determine whether long-term user retention is related to AI Satisfaction.

6.6. Environmental Health and Safety

5th hypothesis suggests that there is a negative relationship between perceived privacy risk and customer trust. Customers might be reluctant to leave their financial data with AI if they think it will be gathered too much, shared without adequate security, or utilized in a manner that isn't being comprehended. This may be a problem if AI offers specific financial advice or suggestions. Good data governance in financial services (Aldasoro et al., 2024; Crisanto et al., 2026) is as critical as ever as data misuse and privacy concerns have been voiced as major data-related concerns in the public perception of AI.

Banks need to react by implementing adequate security measures, providing privacy notices, using data minimization and offering easy methods to correct inaccuracies. Customers should be aware of the implications of certain data practices and have easy access to support from people. Perception of risk to privacy should be distinguished from security. If a bank doesn't communicate in a secure way, this may be a sign of a weak system with no security; if a bank has a weak system, but is willing to provide the information, this may be a sign of the bank being secure, but it's not. Hence, there is a need for technical security measures and clear communication.

Financial institutions should evaluate the accuracy, consistency and reliability of the AI services, as well as its capacity to solve issues. While operational efficiency is important, it should not take the place of measures of service quality that are related to customers. Routine testing and checking enables the identification of any errors that are likely to reoccur and avoid unnecessary discontent.

6.7. Establish Trust with Customers' Transparency

Communicate with customers about their engagement with AI and offer them explanations in clear and comprehensible terms about important processes powered by AI. There should be appropriate review and grievance procedures for AI support in making consequential financial decisions. Banks must continue to be responsible for their services, and cannot use automated systems as an excuse to hide from responsibility for error.

6.8. Enhance Personalization and Responsiveness

When providing personalized services, it shouldn't be about the quantity of recommendations but the quality of the service provided. It should be possible for users to see what the suggestions are and possibly be able to obtain assistance when the automatic answers are inadequate. Furthermore, AI systems need to offer distinct escalation procedures for intricate queries, transactions which could be subject to dispute, or any monetary issues that could be sensitive.

6.9. Strengthen Data Protection

Banks should limit access to sensitive data, gather only the data that is needed for specific purposes and use adequate protections as part of the data lifecycle. Privacy policies should be clear

and consistent to practices. In addition, there should be procedures established to address the handling of data incidents and to share relevant information with affected customers.

Assess the Outcomes of Customer Relationships

Evaluating AI initiatives should be done by a well-rounded set of metrics, such as:

- Customer trust and satisfaction.
- The accuracy of the service and the percentage of services that are successfully resolved.
- Complaints related to automated interactions.
- Incidents relating to privacy and security.
- Continued use intentions and customer recommendations.
- Accessibility of support from people.

Here are some measures that can help banks assess whether AI can be used to enhance customer relationships or simply to cut down on expenses. The restrictions are explained and future studies are pointed out. There are a number of constraints in the proposed study. The first problem is that the author does not provide any new empirical findings but instead a conceptual framework as well as a research methodology. No new data were gathered for the five hypotheses.

Second, a cross sectional survey would only show associations at a particular time; it would not investigate how they are cause each other. There can be longitudinal studies to assess whether AI service quality improvements lead to service quality-related gains in trust, satisfaction, and loyalty. Thirdly, the findings of the purposive sampling technique may not be generalizable. For instance a Lahore based sample may not be representative of the customers across Pakistan. More study needs to be done across a broader geographical area and using a range of banking institutions.

Fourth, there are multiple use cases of AI in the financial industry. A chatbot can be used to assess a customer's value unlike a fraud detection system or an AI credit decision. Different studies in the future should consider separating these services. Finally, there could be comparative studies between traditional and Islamic banks as well as between the difference in the traditional bank and Islamic bank in terms of digital literacy and availability of human support. This type of research would help to identify whether the proposed relationships are true across the different customer segments and banking environments.

7. Conclusion

Enormous amount of studies have established that the AI is transforming the banking sector with its improvements in customer service, predictive analytics, fraud detection, and personalized experiences. Continuous researches have examined that AI is shaping the banking sector by improving customer service, predicting customer needs, fighting fraud, and providing personalized experiences. Artificial Intelligence linked technologies can be used to improve convenience and responsiveness, but will only be effective over the long run if the customers believe they are reliable, useful, secure and held accountable by institutions.

This research tried to examine the linkage model between service quality perceived from AI and customer trust and satisfaction, and customer loyalty, based on the above service quality perceptions. It also recognizes that risk of privacy is an obstacle to trust. A set of five hypotheses gives a specific set of focus to empirical investigation. They discuss the effect of AI service quality and trust, usefulness and personalization/responsiveness on satisfaction, the relationship between trust and satisfaction and the relationship between privacy risk and trust.

These relationships between AI-driven banking experiences and customers are proposed to be tested using a structured survey and PLS-SEM. The hypotheses are not tested until data is collected and analyzed. The message is that it's not just about cutting-edge technology; more is required to revolutionize AI. Technology-based systems, services relevant to customers, transparency in data handling, adequate protection measures and human assistance by banks, are needed. The incorporation of these elements into the banking operations can enable banks to foster customer trust, enhance customer satisfaction, and strengthen customer relationships.

References

Aldasoro, I., Armantier, O., Doerr, S., Gambacorta, L., & Oliviero, T. (2024). Survey evidence on gen AI and households: Job prospects amid trust concerns. Bank for International Settlements. https://www.bis.org/publications/bulletin-86-survey-evidence-gen-ai-and-households-job-prospects-amid-trust-concerns

Crisanto, J. C., Currat, A., Ehrentraud, J., & Wu, W. (2026). In data we trust? Emerging policy and supervisory approaches to AI data use in financial services (FSI Insights No. 73). Bank for International Settlements. https://www.bis.org/publications/fsi-insight-73-data-we-trust-emerging-policy-and-supervisory-approaches-ai-data-use-financial-services

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–340. https://doi.org/10.2307/249008

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. Journal of Management Information Systems, 19(4), 9–30. https://doi.org/10.1080/07421222.2003.11045748

Ikhsan, R. B., Fernando, Y., Prabowo, H., Yuniarty, Gui, A., & Kuncoro, E. A. (2025). An empirical study on the use of artificial intelligence in the banking sector of Indonesia by extending the TAM model and the moderating effect of perceived trust. Digital Business, 5(1), Article 100103. https://doi.org/10.1016/j.digbus.2024.100103

Kumar, J., & Rani, V. (2025). What attracts me or prevents me from using AI-enabled neo-banking services? Unveiling the nexus between service quality and customer loyalty. International Journal of Quality & Reliability Management, 42(10), 2793–2814. https://doi.org/10.1108/IJQRM-11-2024-0421

Kumar, N. R., Janani, M., & Rajendran, P. (2026). Assessing the influence of AI adoption and trust on customer satisfaction in digital banking services. SAM Advanced Management Journal, 91(2), 165–183. https://doi.org/10.1108/SAMAMJ-12-2024-0100

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. Journal of Marketing Research, 17(4), 460–469. https://doi.org/10.1177/002224378001700405

Alnaser, F. M., Rahi, S., Alghizzawi, M., & Ngah, A. H. (2023). Does artificial intelligence (AI) boost digital banking user satisfaction? Integration of expectation confirmation model and antecedents of artificial intelligence enabled digital banking. Heliyon, 9(8), Article e18930. https://doi.org/10.1016/j.heliyon.2023.e18930

Graham, G., Nisar, T. M., Prabhakar, G., Meriton, R., & Malik, S. (2025). Chatbots in customer service within banking and finance: Do chatbots herald the start of an AI revolution in the corporate world? Computers in Human Behavior, 165, Article 108570. https://doi.org/10.1016/j.chb.2025.108570

Organisation for Economic Co-operation and Development. (2024). Regulatory approaches to artificial intelligence in finance (OECD Artificial Intelligence Papers No. 24). OECD Publishing. https://doi.org/10.1787/f1498c02-en

Financial Stability Board. (2024). The financial stability implications of artificial intelligence. https://www.fsb.org/2024/11/the-financial-stability-implications-of-artificial-intelligence/

Crisanto, J. C., Prenio, J., & Yong, J. (2024). Regulating AI in the financial sector: Recent developments and main challenges (FSI Insights No. 63). Bank for International Settlements. https://www.bis.org/fsi/publ/insights63.htm

Financial Stability Board. (2025). Monitoring adoption of artificial intelligence and related vulnerabilities in the financial sector. https://www.fsb.org/2025/10/monitoring-adoption-of-artificial-intelligence-and-related-vulnerabilities-in-the-financial-sector/

Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. MIS Quarterly, 25(3), 351–370. https://doi.org/10.2307/3250921

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. MIS Quarterly, 27(1), 51–90. https://doi.org/10.2307/30036519

McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and validating trust measures for e-commerce: An integrative typology. Information Systems Research, 13(3), 334–359. https://doi.org/10.1287/isre.13.3.334.81

Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. Journal of Marketing, 58(3), 20–38. https://doi.org/10.1177/002224299405800302

Parasuraman, A., Zeithaml, V. A., & Malhotra, A. (2005). E-S-QUAL: A multiple-item scale for assessing electronic service quality. Journal of Service Research, 7(3), 213–233. https://doi.org/10.1177/1094670504271156

Ali, A., Shah, M. H., Foster, M., & Alraja, M. N. (2026). Artificial Intelligence for Cybersecurity in Banking: A Taxonomy of Barriers and Possible Mitigation Strategies. *Cybernetics and Systems*, *57*(7), 1702–1743. https://doi.org/10.1080/01969722.2026.2626804

Bajaba, S., Alghamdi, F. H., Bajaba, A., Alarifi, A., Althnayan, S., & Basahel, S. (2026). How AI Shapes Customer Engagement in Banking: The Roles of Satisfaction and Proactive Personality. *Services Marketing Quarterly*, 1–21. https://doi.org/10.1080/15332969.2026.2630549

Carvache-Franco, M., Martin-Moreno, O., Carvache-Franco, O., Moran-Cedeño, V., & Carvache-Franco, W. (2026). Adoption of AI-powered E-commerce applications: Insights from the Technology Acceptance Model. *Cogent Social Sciences*, *12*(1), 2692162. https://doi.org/10.1080/23311886.2026.2692162

Esagala, S., & Ntale, P. D. (2026). Perception as a mediator between service quality, customer satisfaction, and customer loyalty: Evidence from savings and credit cooperatives (SACCOs) in Uganda. *Cogent Business & Management*, *13*(1), 2613583. https://doi.org/10.1080/23311975.2026.2613583

Geebren, A., & Jabbar, A. (2025). Antecedents of Trust in Mobile Banking: Do They Differ Across Gender, Customer Experience and Frequency of Use? *Information Systems Management*, *42*(4), 598–621. https://doi.org/10.1080/10580530.2025.2506365

Matlala, N. P. (2026). Generative artificial intelligence transformation in African financial institutions: An evaluation of the benefits and risks. *Development Southern Africa*, *43*(1), 149–163. https://doi.org/10.1080/0376835X.2026.2632039

Méndez Reyes, J., Benites-Medina, R., Moran Burgos, N., & López-Chila, R. (2026). Impact of digital financial education and artificial intelligence on sustainable economic development. *Cogent Business & Management*, *13*(1), 2726605. https://doi.org/10.1080/23311975.2026.2726605

Nguyen, T. H., & Le, X. C. (2025). Artificial intelligence-based chatbots – a motivation underlying sustainable development in banking: Standpoint of customer experience and behavioral outcomes. *Cogent Business & Management*, *12*(1), 2443570. https://doi.org/10.1080/23311975.2024.2443570

Ntt, N., Nguyen, T. U., & Nguyen, P. L. (2026). Integrated model of brand trust and brand loyalty from digital, ethical, and operational perspectives: An empirical study in the Vietnamese commercial bank sector. *Cogent Business & Management*, *13*(1), 2700128. https://doi.org/10.1080/23311975.2026.2700128

Rage, A. N. (2026). Customer perceptions of AI-driven customer service: Evidence from Somalia. *Cogent Business & Management*, *13*(1), 2710502. https://doi.org/10.1080/23311975.2026.2710502

Sadok, H., Sakka, F., & El Maknouzi, M. E. H. (2022). Artificial intelligence and bank credit analysis: A review. *Cogent Economics & Finance*, *10*(1), 2023262. https://doi.org/10.1080/23322039.2021.2023262

Supriyadi, S., Hamsal, M., Furinto, A., & Heriyati, P. (2026). Digital innovation enablers in sustainable banking and insurance: A systematic review of business model transformation factors. *Cogent Business & Management*, *13*(1), 2732543. https://doi.org/10.1080/23311975.2026.2732543

Tran Thi Thu, T., & Nguyen Thanh, H. (2026). Enhancing digital transformation at Vietnamese commercial banks. *Cogent Economics & Finance*, *14*(1), 2722882. https://doi.org/10.1080/23322039.2026.2722882

Tuge, N. B., & Msweli, N. T. (2026). Explainable Artificial Intelligence in the Banking Sector: A Systematic Literature Review. *Applied Artificial Intelligence*, *40*(1), 2676353. https://doi.org/10.1080/08839514.2026.2676353

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. Journal of Marketing, 60(2), 31–46. https://doi.org/10.1177/002224299606000203