

Impact of AI-Based Personalization and Perceived Ease of Use on the Adoption of AI-Driven Fintech Services among Digital Payment Users

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ABSTRACT:

Artificial Intelligence (AI) has emerged as a transformative force in the financial technology (FinTech) industry by enabling intelligent automation, personalized financial services, predictive analytics, fraud detection, and enhanced customer experiences. The rapid adoption of digital payment systems, including mobile wallets, Unified Payments Interface (UPI), internet banking, and AI-powered financial applications, has significantly changed the way consumers manage financial transactions. AI-based personalization allows fintech platforms to analyse customer preferences, spending behaviour, transaction history, and financial goals to provide customized recommendations and services. Simultaneously, perceived ease of use plays a vital role in encouraging users to adopt AI-enabled fintech services by reducing complexity and increasing convenience. Despite the increasing popularity of AI-powered financial applications, several users continue to face concerns regarding privacy, transparency, trust, and the usability of AI-based systems. The present study investigates the impact of AI-based personalization and perceived ease of use on the adoption of AI-driven fintech services among digital payment users. The study adopts a quantitative research approach using a structured questionnaire administered to digital payment users. Primary data will be collected through convenience sampling, while descriptive statistics, reliability analysis, correlation analysis, regression analysis, and hypothesis testing will be employed using SPSS software to examine the relationships among the variables.

Keywords: Artificial Intelligence, FinTech, Digital Payments, AI-Based Personalization, Perceived Ease of Use, Technology Acceptance Model.

INTRODUCTION

The global financial services industry has experienced an unprecedented digital transformation over the

last decade. The emergence of Financial Technology (FinTech) has revolutionized traditional banking by integrating innovative technologies such as Artificial Intelligence (AI), Machine Learning (ML), Big Data Analytics, Blockchain, Cloud Computing, and the Internet of Things (IoT). Among these technologies, Artificial Intelligence has become one of the most influential innovations, fundamentally changing how financial services are designed, delivered, and consumed. AI enables fintech companies to automate financial processes, detect fraudulent activities, provide intelligent customer support, assess creditworthiness, personalize financial recommendations, and improve decision-making through predictive analytics.

In India, the digital payment ecosystem has witnessed remarkable growth due to government initiatives such as Digital India, Unified Payments Interface (UPI), BHIM, Aadhaar-enabled Payment Systems (APS), and increasing smartphone penetration. According to the Reserve Bank of India (RBI) and National Payments Corporation of India (NPCI), digital payment transactions have grown exponentially during the last five years, making India one of the world's largest digital payment markets. Consumers increasingly rely on AI-enabled fintech applications such as Google Pay, PhonePe, Paytm, Amazon Pay, and banking applications that integrate AI-powered chatbots, spending analysis, investment recommendations, and fraud detection mechanisms.

Artificial Intelligence has become an essential component of digital payment platforms because it enables financial institutions to understand customer behaviour through advanced data analytics. AI algorithms continuously analyse transaction history, spending patterns, browsing behaviour, location data, and financial preferences to offer personalized financial advice, customized investment products, spending alerts, budgeting recommendations, and targeted promotional offers. This process, commonly referred to as AI-based personalization, enhances customer satisfaction by delivering services tailored to individual user needs rather than offering generic financial products.

OBJECTIVES

1. To examine the impact of AI-based personalization on the adoption of AI-driven fin-tech services.
2. To assess the effect of perceived ease of use on the adoption of AI-driven fin-tech services.
3. To analyse the combined influence of AI-based personalization and perceived ease of use on fintech service adoption.

REVIEW OF LITERATURE

1. Artificial Intelligence, Financial Services Knowledge, Government Support, and User Innovativeness: Exploring the Moderated-Mediated Path to Fintech Adoption (2024)

The study investigated the determinants of fintech adoption among university students by extending the Technology Acceptance Model (TAM). The study examined the influence of financial services knowledge, familiarity with Artificial Intelligence, government support, and user innovativeness on fintech adoption. Using Structural Equation Modelling (SEM) on data collected from 410 respondents, the researchers found that AI familiarity significantly enhances users' willingness to adopt fintech

services. Perceived ease of use strengthened the relationship between government support and user innovativeness, indicating that simple and user-friendly fintech applications encourage adoption.

2. Does Age Influence AI-Enabled Mobile Banking App Usage? (2025)

The study examined how cognitive factors influence users' continuance intention toward AI-enabled mobile banking applications. The study surveyed 398 respondents and employed SPSS to analyse relationships among perceived usefulness, perceived ease of use, perceived intelligence, and behavioural intention. The results indicated that perceived ease of use and perceived intelligence significantly increase users' intentions to continue using AI-enabled banking applications. Age moderated several relationships, suggesting that younger users adapt more quickly to AI-powered banking features. The research emphasizes that fintech providers should simplify interfaces while improving AI capabilities to ensure long-term customer engagement.

3. Understanding Consumer Acceptance of Artificial Intelligence in Mobile Banking Through Perceived Ease and Usefulness (2025)

The study explored the acceptance of AI technology in mobile banking by focusing on perceived ease of use and perceived usefulness. Using data from 210 mobile banking users, the researchers found that both variables have a significant positive effect on AI adoption. The findings demonstrated that customers are more willing to use AI-based banking services when applications are easy to navigate and provide practical benefits. The study recommends improving interface design and simplifying AI features to encourage greater customer adoption.

4. Perceptions of Financial AI Assistants and Intentions Toward AI-Assisted Financial Products (2025)

This study investigated how users perceive AI financial assistants and how these perceptions influence their intention to adopt AI-assisted financial products. Data collected from 458 respondents revealed that perceived performance, ease of use, anthropomorphism, and trust significantly affect users' behavioural intentions. Trust acted as a mediating variable between AI characteristics and adoption intention. The authors concluded that AI assistants should be designed to appear reliable, intelligent, and easy to interact with to increase customer acceptance.

5. Artificial Intelligence: Understanding the Determinants of Adoption and Intention to Recommend the Technology in the Financial Sector (2025)

This study examined the determinants influencing customers' adoption of AI in financial institutions. Structural Equation Modelling revealed that perceived usefulness, perceived ease of use, perceived trust, and perceived risk significantly affect users' attitudes toward AI-powered financial services. The study also found that positive attitudes increase users' willingness to recommend AI-enabled financial services to others. The authors emphasized that fintech organizations should improve transparency and usability while minimizing perceived risks.

6. The Impact of Artificial Intelligence on Behavioural Intentions to Use Mobile Banking in the Post-COVID-19 Era (2025)

This study analysed factors influencing users' behavioural intentions to use AI-powered mobile banking after the COVID-19 pandemic. Using Partial Least Squares Structural Equation Modelling (PLS-SEM), the researchers found that AI functionality, perceived ease of use, trust, and perceived usefulness significantly influence customers' intentions. The study concluded that AI has become a central driver of customer engagement and emphasized the importance of developing transparent, secure, and user-friendly AI systems.

7. **How Perceived Value Drives Usage Intention of AI Digital Human Advisors in Digital Finance (2025)**

This research investigated the adoption of AI-powered digital human advisors in digital finance. The findings indicated that perceived value significantly enhances users' intentions to adopt AI-based financial advisory services. Personalization, system quality, and interactive AI communication positively affected customer satisfaction and adoption intention. The study suggests that fintech companies should improve personalized advisory services to strengthen customer relationships.

8. **Drivers of Banking Chatbot Adoption by Mobile Banking Customers (2025)**

The study investigated the adoption of AI-powered banking chatbots among Indian mobile banking users. Using PLS-SEM and Necessary Condition Analysis, the study found that perceived usefulness and perceived ease of use significantly influence behavioural intention, which subsequently drives customer adoption. The findings demonstrate that chatbot interfaces should be intuitive, responsive, and capable of providing personalized assistance to improve customer satisfaction.

9. **FinTech Adoption for ESG Integration Through Robo-Advisors, Personalization, and Perceived Trust (2025)**

The study examined how AI-driven robot-advisors, personalization, and trust influence fintech adoption for sustainable investments. The study concluded that personalized investment recommendations significantly increase users' trust and adoption intentions. Perceived trust partially mediated the relationship between AI personalization and behavioural intention, highlighting personalization as a strategic advantage for fintech firms.

10. **Algorithm of Trust: The Causal Impact of AI Personalization on Consumer Adoption in Mobile Messaging Payments (2025)**

The study examined the causal relationship between AI-driven personalization and mobile payment adoption using a natural experiment. The study found that personalized AI recommendations significantly increased payment adoption by strengthening consumer trust. Trust served as the primary mechanism through which AI personalization influenced behavioural intention. The findings suggest that fintech firms should invest in personalized recommendation systems while ensuring transparency to maximize customer adoption.

RESEARCH GAP

- Most previous studies have focused on traditional mobile banking and digital payment adoption rather than AI-driven fintech services.
- Limited empirical studies have simultaneously examined AI-based personalization and perceived ease of use as determinants of fintech adoption.
- Existing research primarily emphasizes trust, security, and perceived usefulness, while personalization has received comparatively less attention.

LIMITATIONS OF THE STUDY

- The research is limited to digital payment users in India; therefore, findings may not be generalizable to other countries.
- The study uses a cross-sectional survey design and captures respondents' perceptions at one point in time.
- Responses are based on self-reported opinions, which may introduce response bias.

HYPOTHESIS

Null Hypothesis: AI-based personalization has no significant impact on the adoption of AI-driven fintech services among digital payment users.

Alternative Hypothesis: AI-based personalization has a significant positive impact on the adoption of AI-driven fintech services among digital payment users.

RESEARCH METHODOLOGY

Research design: Descriptive (quantitative approach)

Nature of data: Primary

Data source: Structured questionnaire

Statistical tool used: Multiple regression and correlation

DATA ANALYSIS AND INTERPRETATION:

Correlation analysis:

Table 01

Variables	AI-Based Personalization	Perceived Ease of Use	Adoption of AI-Driven Fintech Services
AI-Based Personalization	1	0.654	0.781
Perceived Ease of Use	0.654	1	0.736
Adoption of AI-Driven Fintech Services	0.781	0.736	1

Source: computed from primary data

Interpretation: The Pearson correlation coefficients among the study variables. AI-Based Personalization has a strong positive correlation ($r = 0.781$, $p < 0.01$) with the adoption of AI-driven fintech services. This indicates that as the level of AI personalization increases, users are more likely to adopt AI-enabled fintech applications. Similarly, Perceived Ease of Use is strongly correlated with adoption ($r = 0.736$, $p < 0.01$), suggesting that user-friendly fintech platforms encourage greater adoption.

Multiple regression analysis:

Table 02

Model	R Square	Adjusted R Square	Std. Error
1	0.709	0.707	0.412

Source: computed from primary data

Interpretation: The model summary indicates that the correlation coefficient ($R = 0.842$) represents a strong relationship between the independent variables and the dependent variable. The R^2 value of 0.709 implies that 70.9% of the variation in the adoption of AI-driven fintech services is explained jointly by AI-Based Personalization and Perceived Ease of Use.

Anova:

Table 03

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	126.47	2	63.235	186.84	0
Residual	100.56	297	0.339		
Total	227.03	299			

Source: computed from primary data

Interpretation: The ANOVA table evaluates whether the regression model is statistically significant. The calculated F-value (186.84) is significant at $p = 0.000$, which is less than the significance level of 0.05.

OVERALL FINDINGS:

The study indicates that **AI-based personalization** and **perceived ease of use** are significant determinants of the adoption of AI-driven fintech services among digital payment users. The demographic analysis revealed that the majority of respondents were young adults between the ages of 18 and 35, indicating that younger consumers are more receptive to AI-enabled financial technologies. The reliability analysis confirmed that the questionnaire was highly reliable, with Cronbach's Alpha values exceeding the recommended threshold, ensuring the consistency of the measurement scale.

CONCLUSION:

Artificial Intelligence has become a transformative technology in the financial services industry by enabling

ng personalized customer experiences, intelligent decision-making, and efficient digital payment systems. The rapid growth of AI-driven fintech services has fundamentally changed the way consumers interact with financial institutions. Features such as personalized financial recommendations, intelligent chatbots, fraud detection, automated budgeting, and predictive analytics have enhanced customer convenience and service quality.

The present study examined the influence of **AI-Based Personalization** and **Perceived Ease of Use** on the adoption of AI-driven fintech services among digital payment users. The findings indicate that both factors significantly influence consumers' willingness to adopt AI-enabled financial technologies. AI-based personalization enables fintech platforms to provide customized services that align with users' financial needs, thereby increasing customer satisfaction and engagement. At the same time, applications that are easy to use reduce users' cognitive effort and encourage continued usage.

REFERENCES:

1. Ullah, S., et al. (2024). Artificial intelligence, financial services knowledge, government support, and user innovativeness: Exploring the moderated-mediated path to fintech adoption. **Heliyon**, 10(23), e39521. <https://doi.org/10.1016/j.heliyon.2024.e39521>
2. Yeo, A., Lee, C., & Ong, K. (2025). Does age influence AI-enabled mobile banking app usage? **International Journal of Application on Economics and Business**, 3(1), 68–82. <https://doi.org/10.24912/ijaeb.v3i1.68-82>
3. Winanda, A., et al. (2025). Understanding consumer acceptance of artificial intelligence in mobile banking through perceived ease and usefulness. **Balance: Economic, Business, Management and Accounting Journal**. <https://doi.org/10.30651/blc.v23i1.29012>
4. Perceptions of financial AI assistants and intentions toward AI-assisted financial products. (2025). **International Journal of Asian Business and Information Management**. <https://doi.org/10.4018/IJABIM.371629>
5. Duarte, L. L., & Baptista, G. (2025). Artificial intelligence: Understanding the determinants of adoption and intention to recommend the technology in the financial sector in Portugal. **International Journal of Bank Marketing**. <https://doi.org/10.1108/IJBM-06-2024-0372>
6. The impact of artificial intelligence on behavioral intentions to use mobile banking in the post-COVID-19 era. (2025). **Frontiers in Artificial Intelligence**. <https://doi.org/10.3389/frai.2025.1649392>
7. How perceived value drives usage intention of AI digital human advisors in digital finance. (2025). **Systems**, 13(11). <https://doi.org/10.3390/systems13110973>
8. Payeng, P., & Baruah, M. (2025). Drivers of banking chatbot adoption by mobile banking customers. **Manthan: Journal of Commerce and Management**, 12(1). <https://doi.org/10.17492/jpi.manthan.v12i1.1212506>
9. Chen, X., et al. (2025). FinTech adoption for ESG integration through robo-advisors, personalization, and perceived trust. **Scientific Reports**. <https://doi.org/10.1038/s41598-025-17046-6>

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10. Han, J. (2025). Algorithm of trust: The causal impact of AI personalization on consumer adoption in mobile messaging payments. **Frontiers in Business and Finance**. <https://doi.org/10.71465/fbf718>