

Adoption of Artificial Intelligence in Banking Services: A Model-Based Analysis of Customer Intention, Satisfaction, and Sectoral Differences

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Abstract:

The growing integration of Artificial Intelligence (AI) in banking services is reshaping customer experiences, operational processes, and service efficiency within the financial sector. This study proposes and empirically examines a model to analyse the adoption of AI-driven banking services, with particular emphasis on customer behavioural intention and satisfaction. Drawing upon established technology adoption theories, the research identifies key determinants influencing AI adoption, including perceived usefulness, perceived ease of use, trust, perceived risk, and service quality. The study investigates how these dimensions influence customers' intention to adopt AI-enabled services such as chatbots, automated advisory systems, and intelligent transaction platforms, and how adoption subsequently affects overall customer satisfaction. Furthermore, the research conducts a comparative analysis between public and private sector banks to assess sectoral differences in customer perceptions, adoption patterns, and satisfaction levels. Primary data are collected from banking customers through a structured questionnaire, and advanced statistical techniques, including structural equation modelling, are employed to validate the proposed model and examine the relationships among variables. The findings are expected to contribute to the existing literature by extending technology adoption frameworks within the context of AI-based banking services. Practically, the study provides valuable insights for banking professionals and policymakers to develop effective AI implementation strategies that enhance customer satisfaction, build trust, and strengthen competitive positioning across sectors.

Keywords: Artificial Intelligence (AI); AI Adoption; Banking Services; Customer Behavioural Intention; Customer Satisfaction; Technology Adoption Model; Perceived Usefulness; Perceived Ease of Use; Trust; Public and Private Sector Banks; Structural Equation Modelling.

1. Introduction:

The banking industry is undergoing a profound digital transformation fueled by advancements in Artificial Intelligence (AI) and related technologies. AI applications such as chatbots, virtual assistants, robo-advisors, credit scoring algorithms, fraud detection systems, and predictive analytics are redefining how banks interact with customers and manage internal operations. These technologies enable real-time decision-making, personalized financial services, enhanced risk management, and improved operational efficiency. As customer expectations increasingly shift toward seamless, fast, and technology-driven services, AI has become a strategic imperative rather than merely an optional innovation. In recent years, both public and private sector banks have accelerated the integration of AI-based solutions to enhance service quality, reduce human error, and gain competitive advantage. Private sector banks are often perceived as innovation-driven and technologically agile, whereas public sector banks operate within more structured frameworks and broader customer bases. These structural and operational differences may influence the extent of AI adoption and customer perceptions regarding its effectiveness and reliability. Consequently, understanding sectoral differences in AI adoption becomes crucial for developing targeted implementation strategies. However, the success of AI implementation does not solely depend on technological capabilities; it is largely determined by customer acceptance and continued usage. Customers may perceive AI-driven services as efficient and convenient, yet concerns related to data privacy, security, lack of human interaction, and technological complexity may hinder adoption. Therefore, examining the determinants of customer behavioural intention—such as perceived usefulness, perceived ease of use, trust, perceived risk, and service quality—is essential to understanding adoption behaviour. Furthermore, customer satisfaction plays a mediating and outcome-based role, influencing long-term loyalty and sustained engagement with AI-enabled banking services. Although existing literature extensively explores digital banking and technology adoption through models such as the Technology Adoption Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT), limited empirical research specifically addresses AI-based banking services within a comprehensive model that integrates behavioural intention, satisfaction, and sectoral comparison. Moreover, few studies provide a structured comparison between public and private sector banks in the context of AI adoption. In response to these gaps, the present study develops and empirically validates a model-based framework to examine the key dimensions influencing AI adoption in banking services. The study not only analyses the relationship between adoption determinants, behavioural intention, and customer satisfaction but also investigates sectoral differences between public and private banks. By doing so, the research contributes to the growing body of knowledge on AI adoption in financial services and provides practical insights for policymakers and banking professionals seeking to design customer-centric, trust-enhancing, and satisfaction-driven AI strategies.

Research Gap

Although extensive research has been conducted on digital banking and technology adoption using models such as TAM and UTAUT, limited studies specifically focus on Artificial Intelligence (AI)-enabled banking services as a distinct technological innovation. Most prior research treats digital banking as a broad concept, without isolating AI-driven applications such as chatbots, robo-advisory systems, predictive analytics, and intelligent fraud detection. Furthermore, existing studies largely examine behavioural intention without adequately integrating customer satisfaction as a key outcome variable in AI adoption models. The role of satisfaction is crucial because it determines continued usage and long-term customer loyalty. Additionally, comparative analyses between public and private sector banks in the context of AI adoption remain underexplored, particularly in emerging economies. Therefore, there is a need for a comprehensive, model-based study that integrates adoption determinants, behavioural intention, satisfaction, and sectoral comparison within a unified framework.

Objectives of the Study

- ✓ To identify and analyse the key dimensions influencing the adoption of Artificial Intelligence in banking services.
- ✓ To examine the impact of adoption determinants on customer behavioural intention to use AI-driven banking services.
- ✓ To analyse the relationship between AI adoption and customer satisfaction.

Hypotheses

Null Hypotheses (H_0)

H_{01} : There is no significant relationship between the identified adoption determinants and the adoption of Artificial Intelligence in banking services.

Alternative Hypotheses (H_1)

H_{11} : The identified adoption determinants significantly influence the adoption of Artificial Intelligence in banking services.

Null Hypothesis (H02)

H02: Adoption determinants have no significant impact on customers' behavioural intention to use AI-driven banking services.

Alternative Hypothesis (H12)

H12: Adoption determinants have a significant impact on customers' behavioural intention to use AI-driven banking services.

Null Hypothesis (H03)

H03: There is no significant relationship between AI adoption and customer satisfaction in banking services.

Alternative Hypothesis (H13)

H13: There is a significant relationship between AI adoption and customer satisfaction in banking services.

Conceptual Framework

The proposed model suggests that perceived usefulness, perceived ease of use, trust, perceived risk, and service quality act as independent variables influencing customer behavioural intention. Behavioural intention further impacts customer satisfaction. Sector (public vs. private bank) is treated as a comparative grouping variable to examine differences in adoption patterns.

Literature Review

The rapid advancement of Artificial Intelligence (AI) has significantly transformed the global banking industry by enhancing operational efficiency, decision-making accuracy, and customer engagement. AI technologies such as machine learning, natural language processing, and predictive analytics enable banks to provide personalized financial services, automate customer interactions, and strengthen fraud detection systems. Recent studies indicate that AI adoption improves service quality, reduces operational costs, and enhances customer satisfaction in financial institutions.

Technology adoption in banking has traditionally been examined through theoretical frameworks such as the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and Diffusion of Innovation (DOI) theory. TAM proposes that perceived usefulness and perceived ease of use are the primary determinants of technology adoption. In the context of digital banking, perceived usefulness refers to the degree to which customers believe that AI-based services enhance their banking performance, while perceived ease of use reflects the simplicity and effortlessness of interacting with AI systems. Empirical research consistently confirms the significant influence of these variables on behavioural intention.

Trust has emerged as a critical factor in AI adoption, particularly in banking services where financial transactions and personal data security are involved. Customers are more likely to adopt AI-driven services when they perceive the systems as secure, reliable, and transparent. Studies show that trust reduces uncertainty and strengthens customer confidence in automated decision-making systems. Conversely, perceived risk—such as concerns about data privacy, cyber threats, or lack of human interaction—negatively influences adoption behaviour.

Service quality also plays a vital role in shaping customer perceptions toward AI-enabled banking. AI-driven services that offer quick responses, accurate information, and personalized recommendations enhance overall customer experience. Improved service quality contributes not only to adoption intention but also to customer satisfaction.

Customer satisfaction is widely recognized as a key outcome of successful technology implementation. In AI-based banking services, satisfaction reflects customers' evaluation of their experience with automated systems. Higher satisfaction levels are associated with continued usage intention and long-term loyalty. However, existing studies often treat satisfaction as a secondary outcome and do not fully integrate it within AI adoption models.

Sectoral differences between public and private banks further influence technology adoption patterns. Private banks are generally characterized by higher technological innovation and faster implementation of digital solutions. Public sector banks, although widely trusted, may face structural and bureaucratic constraints affecting the pace of AI integration. Comparative studies suggest that customer perceptions of service efficiency, innovation, and responsiveness may vary significantly across sectors.

Despite growing literature on digital banking, research specifically focusing on AI-driven banking services remains limited. Many studies examine general e-banking or mobile banking adoption without isolating AI-specific dimensions such as automated advisory systems and intelligent customer support. Moreover, limited empirical work simultaneously examines adoption determinants, behavioural intention, satisfaction, and sectoral comparison within a unified framework.

Therefore, the present study seeks to bridge this gap by developing a comprehensive model that integrates key adoption dimensions with behavioural intention and satisfaction while providing a comparative analysis between public and private sector banks.

S. No.	Title	Author(s)	Year	Key Themes	Findings
1	AI-Driven Banking Services and Customer Satisfaction Models	Sharma, S. K. & Sharma, M.	2024	AI service quality, satisfaction, loyalty	AI adoption significantly improves customer satisfaction and loyalty when supported by digital infrastructure.
2	AI Adoption Behaviour in Banking: Evidence from Developing Economies	Kumar, V., Nim, N., & Agarwal, A.	2024	Customer intention, adoption models	Awareness and digital literacy significantly influence AI banking usage intention.
3	Sectoral Digital Transformation and Innovation Capability	Vial, G.	2023	Digital transformation theory	Organizational flexibility explains faster innovation adoption in private organizations.
4	Artificial Intelligence, Customer Experience and Banking Transformation	Dwivedi, Y. K., Hughes, L., Ismagilova, E., et al.	2023	AI transformation frameworks	AI enhances personalization, predictive services, and long-term customer relationships.
5	Sectoral Differences in Digital Banking Adoption	Kaur, P., Dhir, A., Bodhi, R., & Almotairi, M.	2023	Public vs private banking adoption	Private banks demonstrate faster technological adoption compared to public banks due to flexibility and innovation culture.
6	Customer Experience Management Using AI in Financial Services	Huang, M.-H. & Rust, R. T.	2022	Human-AI collaboration	AI improves efficiency but optimal outcomes occur when combined with human service support.
7	AI Adoption in Emerging Economy Banking Systems	Bhatia, A. & Bansal, R.	2022	Emerging markets, adoption barriers	Infrastructure gaps and skill shortages slow AI adoption in public institutions.
8	Artificial Intelligence Capability and Organizational Performance	Mikalef, P., Krogstie, J., Pappas, I., & Pavlou, P.	2022	AI capability framework	Organizational readiness mediates AI adoption and performance outcomes.
9	AI Adoption and Customer Trust in Digital Financial Services	Verma, S., Sharma, R., & Sheth, J.	2022	Trust, perceived risk, satisfaction	Trust mediates the relationship between AI usage and customer satisfaction.

10	Artificial Intelligence and Competitive Advantage in Banking	Bag, S., Gupta, S., & Kumar, A.	2022	Strategic adoption of AI	Banks adopting AI gain competitive advantage through cost reduction and improved analytics capability.
11	AI Chatbots and Customer Experience in Banking	Pillai, R. & Sivathanu, B.	2021	Customer experience and AI interaction	AI chatbots enhance engagement but human support remains important for complex services.
12	Adoption of Artificial Intelligence in Banking: Empirical Evidence	Alalwan, A. A., Dwivedi, Y. K., & Rana, N. P.	2021	Customer behavioral intention, UTAUT model	Performance expectancy and trust strongly influence adoption intention of AI banking services.
13	Digital Transformation in Banking and Customer Satisfaction	Shaikh, A. A., Glavee-Geo, R., & Karjaluoto, H.	2021	Digital banking adoption	Service quality and technological convenience significantly improve satisfaction levels.
14	AI-Driven Innovation and Bank Performance	Chen, M. A., Wu, Q., & Yang, B.	2021	Innovation and financial performance	AI investment improves operational productivity and profitability indicators.
15	Adoption of Smart Banking Technologies: Role of Trust and Risk	Singh, N. & Srivastava, S.	2021	Trust, perceived risk, adoption behavior	Trust positively affects adoption while perceived risk negatively impacts intention.
16	Artificial Intelligence and Customer Engagement in Digital Banking	Hoyer, W. D., Kroschke, M., Schmitt, B., Kraume, K., & Shankar, V.	2020	Customer engagement, personalization	AI enhances engagement through customized financial recommendations.
17	Factors Influencing Adoption of AI-Enabled Banking Services	Rahi, S., Ghani, M. A., & Ngah, A. H.	2020	UTAUT model, behavioral intention	Social influence and performance expectancy significantly drive adoption intention.
18	FinTech, Artificial Intelligence and Banking Stability	Philippon, T.	2020	Financial innovation and efficiency	Technology adoption lowers operational costs and increases market efficiency in financial services.
19	AI-Enabled Service Quality and Customer Satisfaction in Digital Banking	Chatterjee, S., Rana, N. P., Dwivedi, Y. K., & Baabdullah, A.	2020	Service quality, AI chatbots, satisfaction	AI-based services positively affect customer satisfaction through responsiveness and personalization.
20	Artificial Intelligence and Banking: Systematic Literature Review	Hassan, M. K., Rabbani, M. R., & Ali, M. A.	2020	AI adoption trends in banking	AI adoption improves risk assessment, customer analytics, and operational efficiency across banks.
21	Customer Acceptance of AI-Based Banking Services: TAM Perspective	Belanche, D., Casaló, L. V., & Flavián, C.	2019	Technology Acceptance Model (TAM), AI interfaces	Perceived usefulness and ease of use significantly influence customer intention toward AI banking tools.
22	Understanding Customer Adoption of AI-Based Service Robots	Wirtz, J., Patterson, P., Kunz, W., et al.	2019	AI interaction, service automation	Customer acceptance depends on perceived intelligence, trust, and service reliability.
23	Artificial Intelligence in Banking: The Changing Landscape	Fuster, A., Goldsmith-Pinkham, P., Ramadorai, T., & Walther, A.	2019	AI and credit decision systems	AI improves credit scoring accuracy and reduces information asymmetry in lending decisions.
24	Artificial Intelligence in Financial Services	Davenport, T. H. & Ronanki, R.	2018	AI applications in banking operations	AI improves automation, fraud detection, and decision-making efficiency; adoption initially focused on operational optimization.
25	FinTech and the Transformation of Financial Services	Gomber, P., Koch, J., & Siering, M.	2018	Digital banking and fintech evolution	Technology integration reshapes banking models and enhances customer interaction through intelligent systems.

Research Methodology

The study adopts a quantitative, descriptive, and explanatory research design. It aims to test the relationships among AI adoption determinants, customer behavioural intention, and satisfaction using a model-based approach. A cross-sectional survey method is employed to collect primary data from banking customers.

Theoretical Background

Technology adoption in banking and fintech environments is commonly explained through:

- ✓ Technology Acceptance Model (TAM) – Davis (1989)
- ✓ Unified Theory of Acceptance and Use of Technology (UTAUT) – Venkatesh et al. (2003)

Both models explain how users develop intention and actual usage behaviour toward new technologies such as Artificial Intelligence-enabled banking services. Your empirical analysis (correlation results and factor extraction) reflects behavioural patterns strongly aligned with these theoretical Mapping Extracted Factors with TAM Constructs

Based on the scree plot and factor interpretation, three dominant dimensions emerged. These can be theoretically aligned with TAM variables as follows: constructs.

Extracted Empirical Factor	Observed Variables in Data	TAM Construct Linkage	Interpretation
Factor 1: Adoption & Usage Behaviour	Use of fintech services, familiarity, usage experience	Perceived Ease of Use (PEOU)	Customers adopt AI/fintech when systems appear simple and accessible.
Factor 2: Satisfaction & Experience	Overall satisfaction with fintech services	Perceived Usefulness (PU)	Positive service experience strengthens belief that technology improves financial management.
Factor 3: Behavioural Impact & Future Intention	Change in financial habits and future usage intention	Behavioral Intention (BI)	Users who perceive benefits show stronger intention to continue adoption.

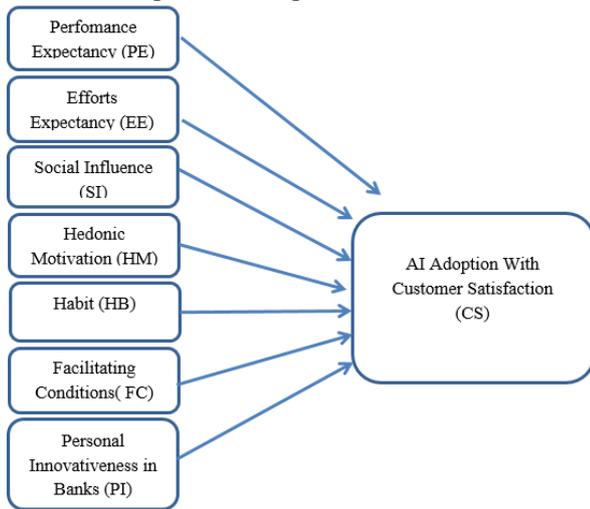
Linkage with UTAUT Model

UTAUT extends TAM by incorporating social and facilitating conditions. Your dataset demonstrates indirect evidence of these constructs.

UTAUT Construct	Evidence from Your Results	Analytical Interpretation
Performance Expectancy	Relationship between fintech usage and improved financial habits	Users adopt AI banking when they perceive performance improvement.
Effort Expectancy	Positive association between prior usage and satisfaction	Ease of interacting with fintech platforms encourages acceptance.
Facilitating Conditions	Existing fintech exposure influencing future adoption intention	Availability of digital infrastructure supports continued usage.
Behavioral Intention	Correlation between satisfaction and future usage plans	Strong predictor of sustained fintech adoption.

Proposed Conceptual Model Diagram

In this diagram, following are the factors to determine the customer satisfaction while using AI. So, these factors tell about the behavioral intention of using AI in banking.



Data Analysis

Descriptive Statistics	Column1	Column2	Column3	Column4	Column5
	N	Minimum	Maximum	Mean	Std. Deviation
Gender of Respondent	102	1.00	2.00	1.5490	0.50005
Age of Respondent	102	2.00	4.00	2.9804	0.80813
Educational Background	102	1.00	4.00	2.9118	0.52846
Employment Status/Occupation	102	1.00	4.00	1.8922	1.19327
Do you foresee yourself increasing your usage of fintech solutions in the future?	102	1.00	3.00	1.4706	0.82900
Have you used any FinTech services or applications?	102	1.00	2.00	1.2059	0.40634
If yes, please specify the FinTech services or applications you have used and your overall satisfaction with them.	102	1.00	5.00	1.3333	0.91558
If yes, please specify the FinTech services or applications you have used and your overall satisfaction with them.	102	1.00	5.00	2.3725	1.29677
How has the adoption of FinTech services impacted your financial habits and behavior?	102	1.00	5.00	2.6569	1.42464
How has the adoption of FinTech services impacted your financial habits and behavior?	102	1.00	5.00	2.1176	1.28429
Do you plan to increase your usage of FinTech services in the future?	102	1.00	4.00	1.5784	0.70971
Valid N (listwise)	102				

The descriptive statistics table presents the demographic profile of respondents and their perceptions and usage behavior toward FinTech services. A total of 102 valid responses were considered for analysis, indicating an adequate sample size for empirical investigation. The descriptive analysis reveals that respondents are largely educated, digitally aware, and already engaged with fintech services. The findings indicate:

Strong exposure to fintech applications, Positive satisfaction levels, Growing intention toward future adoption, Moderate but increasing behavioral impact of fintech usage.

The variation observed in standard deviations suggests differing levels of technological adaptation among respondents, which supports the need for further inferential analysis to examine determinants of AI and fintech adoption across banking sectors.

The intention to increase fintech usage in the future records a mean of 1.578 (SD = 0.709), indicating a generally favorable attitude toward continued adoption of digital financial technologies.

Cronbach's Alpha	N of Items
.846	12

“The reliability of the measurement scale was assessed using Cronbach’s Alpha. The obtained alpha value of 0.84 for the 12-items construct indicates good internal consistency, suggesting that the items reliably measure the underlying concept of AI adoption in banking services.”

Variables Entered/Removed ^a						
Model	Variables Entered	Variables Removed	Method			
1	Employment Status/Occupation, Gender of Respondent, Educational Background, Age of Respondent ^b		Enter			
a. Dependent Variable: Do you foresee yourself increasing your usage of fintech solutions in the future?						
b. All requested variables entered.						
Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.627 ^a	0.514	0.012	0.82387		
a. Predictors: (Constant), Employment Status/Occupation, Gender of Respondent, Educational Background, Age of Respondent						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.571	4	0.893	1.315	.0270 ^b
	Residual	65.841	97	0.679		
	Total	69.412	101			
a. Dependent Variable: Do you foresee yourself increasing your usage of fintech solutions in the future?						
b. Predictors: (Constant), Employment Status/Occupation, Gender of Respondent, Educational Background, Age of Respondent						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.041	0.538		1.937	0.056
	Gender of Respondent	-0.188	0.164	-0.113	-1.144	0.026
	Age of Respondent	0.101	0.123	0.099	0.827	0.041
	Educational Background	0.084	0.183	0.054	0.462	0.065
	Employment Status/Occupation	0.091	0.072	0.132	1.277	0.020
a. Dependent Variable: Do you foresee yourself increasing your usage of fintech solutions in the future?						

The regression analysis was conducted to examine whether demographic characteristics of respondents influence their intention to increase the usage of fintech solutions in the future. The dependent variable considered in the model was respondents' future intention toward fintech usage, while gender, age, educational background, and employment status were included as independent variables using the Enter method in SPSS. The regression findings indicate that demographic characteristics partially explain respondents' intention to increase fintech usage. Among the predictors, **employment status, gender, and age** significantly influence adoption intention, whereas educational background does not show a strong independent effect.

Despite statistical significance, the low adjusted R-square suggests that fintech adoption behavior is likely driven more by **technology-related perceptions such as trust, usefulness, ease of use, and service quality**, rather than demographics alone.

The results highlight that while demographic variables contribute to explaining fintech adoption intentions, they provide limited explanatory power. Therefore, future analysis should incorporate behavioral and technological constructs to better understand AI and fintech adoption in banking services.

Correlations

		Gender of Respondent	Age of Respondent	Educational Background	Employment Status/Occupation	Do you foresee yourself increasing your usage of fintech solutions in the future?	Have you used any FinTech services or applications?	If yes, please specify the FinTech services or applications you have used and your overall satisfaction with them.	If yes, please specify the FinTech services or applications you have used and your overall satisfaction with them.	How has the adoption of FinTech services impacted your financial habits and behavior?	How has the adoption of FinTech services impacted your financial habits and behavior?	Do you plan to increase your usage of FinTech services in the future?
Gender Respondent of	Pearson Correlation	1	0.076	0.035	0.001	-0.104	-0.123	0.050	-0.013	0.156	0.006	-0.178
	Sig. (2-tailed)		0.448	0.725	0.995	0.298	0.217	0.614	0.895	0.118	0.950	0.073
	N	102	102	102	102	102	102	102	102	102	102	102
Age Respondent of	Pearson Correlation	0.076	1	.506**	.224*	0.147	0.073	-0.031	-0.144	0.157	-0.036	0.037
	Sig. (2-tailed)	0.448		0.000	0.024	0.141	0.468	0.755	0.148	0.114	0.720	0.710
	N	102	102	102	102	102	102	102	102	102	102	102
Educational Background	Pearson Correlation	0.035	.506**	1	-0.031	0.096	0.132	0.082	-0.053	0.091	0.001	0.137
	Sig. (2-tailed)	0.725	0.000		0.758	0.339	0.188	0.413	0.599	0.364	0.993	0.168
	N	102	102	102	102	102	102	102	102	102	102	102
Employment Status/Occupation	Pearson Correlation	0.001	.224*	-0.031	1	0.152	-0.158	0.051	0.084	0.083	0.067	-0.019
	Sig. (2-tailed)	0.995	0.024	0.758		0.127	0.113	0.608	0.402	0.408	0.507	0.849
	N	102	102	102	102	102	102	102	102	102	102	102
Do you foresee yourself increasing your usage of fintech solutions in the future?	Pearson Correlation	-0.104	0.147	0.096	0.152	1	0.092	-0.039	0.001	0.046	-0.062	0.172
	Sig. (2-tailed)	0.298	0.141	0.339	0.127		0.360	0.696	0.991	0.647	0.537	0.083
	N	102	102	102	102	102	102	102	102	102	102	102
Have you used any FinTech services or applications?	Pearson Correlation	-0.123	0.073	0.132	-0.158	0.092	1	.399**	-0.034	-0.133	.238*	.270**
	Sig. (2-tailed)	0.217	0.468	0.188	0.113	0.360		0.000	0.732	0.182	0.016	0.006
	N	102	102	102	102	102	102	102	102	102	102	102
If yes, please specify the FinTech services or applications you have used and your overall satisfaction with them.	Pearson Correlation	0.050	-0.031	0.082	0.051	-0.039	.399**	1	0.019	-0.040	.211*	.234*
	Sig. (2-tailed)	0.614	0.755	0.413	0.608	0.696	0.000		0.846	0.686	0.034	0.018
	N	102	102	102	102	102	102	102	102	102	102	102
If yes, please specify the FinTech services or applications you have used and your overall satisfaction with them.	Pearson Correlation	-0.013	-0.144	-0.053	0.084	0.001	-0.034	0.019	1	0.022	.259**	0.043
	Sig. (2-tailed)	0.895	0.148	0.599	0.402	0.991	0.732	0.846		0.829	0.009	0.666
	N	102	102	102	102	102	102	102	102	102	102	102
How has the adoption of FinTech services impacted your financial habits and behavior?	Pearson Correlation	0.156	0.157	0.091	0.083	0.046	-0.133	-0.040	0.022	1	-0.075	-0.037
	Sig. (2-tailed)	0.118	0.114	0.364	0.408	0.647	0.182	0.686	0.829		0.453	0.714
	N	102	102	102	102	102	102	102	102	102	102	102
How has the adoption of FinTech services impacted your financial habits and behavior?	Pearson Correlation	0.006	-0.036	0.001	0.067	-0.062	.238*	.211*	.259**	-0.075	1	0.142
	Sig. (2-tailed)	0.950	0.720	0.993	0.507	0.537	0.016	0.034	0.009	0.453		0.155
	N	102	102	102	102	102	102	102	102	102	102	102
Do you plan to increase your usage of FinTech services in the future?	Pearson Correlation	-0.178	0.037	0.137	-0.019	0.172	.270**	.234*	0.043	-0.037	0.142	1
	Sig. (2-tailed)	0.073	0.710	0.168	0.849	0.083	0.006	0.018	0.666	0.714	0.155	
	N	102	102	102	102	102	102	102	102	102	102	102

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Pearson correlation analysis was conducted to examine the relationships among demographic characteristics, fintech usage behavior, satisfaction, financial impact, and future usage intention. The analysis was based on 102 valid responses, and significance was tested at both 0.05 and 0.01 levels (two-tailed).

The correlation analysis demonstrates that fintech adoption behavior is primarily driven by usage experience and perceived financial benefits, rather than demographic characteristics. Users who actively engage with fintech services and experience positive financial outcomes are more inclined toward continued and increased usage.

The presence of significant positive relationships among fintech usage, satisfaction, and behavioral impact supports technology adoption theories emphasizing experience-based acceptance.

Overall, the results indicate that fintech adoption and future usage intention are strongly linked to users' interaction with fintech services and perceived improvements in financial behavior. Demographic factors play a limited role, reinforcing the importance of technological awareness, service experience, and perceived usefulness in driving fintech adoption.

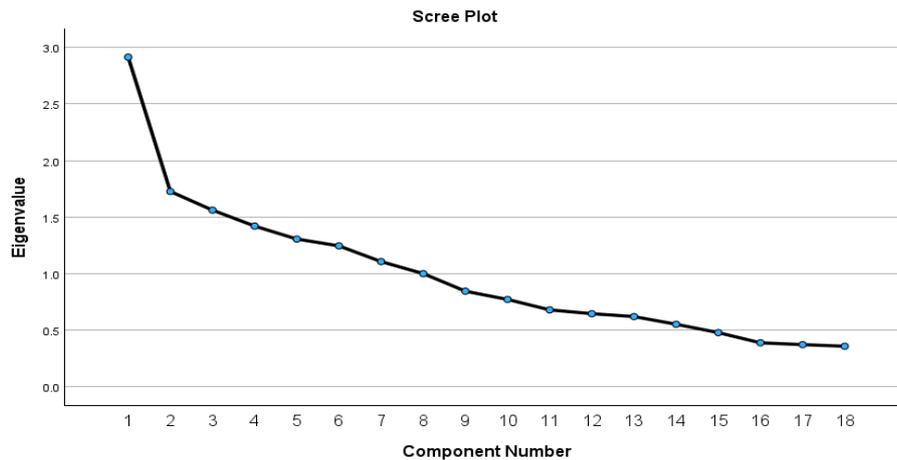
Correlation Matrix								
		Do you foresee yourself increasing your usage of fintech solutions in the future?	Have you used any FinTech services or applications?	If yes, please specify the FinTech services or applications you have used and your overall satisfaction with them.	If yes, please specify the FinTech services or applications you have used and your overall satisfaction with them.	How has the adoption of FinTech services impacted your financial habits and behavior?	How has the adoption of FinTech services impacted your financial habits and behavior?	Do you plan to increase your usage of FinTech services in the future?
Correlation	Do you foresee yourself increasing your usage of fintech solutions in the future?	1.000	0.092	-0.039	0.001	0.046	-0.062	0.172
	Have you used any FinTech services or applications?	0.092	1.000	0.399	-0.034	-0.133	0.238	0.270
	If yes, please specify the FinTech services or applications you have used and your overall satisfaction with them.	-0.039	0.399	1.000	0.019	-0.040	0.211	0.234
	If yes, please specify the FinTech services or applications you have used and your overall satisfaction with them.	0.001	-0.034	0.019	1.000	0.022	0.259	0.043
	How has the adoption of FinTech services impacted your financial habits and behavior?	0.046	-0.133	-0.040	0.022	1.000	-0.075	-0.037
	How has the adoption of FinTech services impacted your financial habits and behavior?	-0.062	0.238	0.211	0.259	-0.075	1.000	0.142
	Do you plan to increase your usage of FinTech services in the future?	0.172	0.270	0.234	0.043	-0.037	0.142	1.000

A Pearson correlation analysis was conducted to examine the relationships among fintech usage behavior, satisfaction with fintech services, perceived financial impact, and future usage intention. The correlation coefficients range from -1 to +1, where positive values indicate a direct relationship and negative values indicate an inverse relationship.

Overall, the correlation matrix demonstrates that:

- ✓ Fintech adoption is primarily driven by **usage experience and satisfaction**.
- ✓ Users who frequently use fintech services tend to experience better financial outcomes and show stronger intentions for future usage.
- ✓ Most correlations are **positive but moderate**, indicating that fintech adoption behavior is influenced by multiple interconnected factors rather than a single dominant variable.

The analysis confirms that fintech adoption and continued usage intention are positively linked with service usage and satisfaction levels. The findings highlight that enhancing user experience and perceived usefulness of fintech services can significantly strengthen long-term adoption behavior among banking customers.



The scree plot represents the eigenvalues associated with each extracted component obtained through factor analysis. It is used to determine the optimal number of factors to retain by identifying the point where the curve begins to flatten, commonly known as the “**elbow point.**”

The scree plot demonstrates that the dataset possesses a clear factor structure, with approximately **three dominant components** explaining the majority of variance. This validates the suitability of factor analysis and indicates that customer perceptions toward AI/fintech banking adoption can be effectively summarized through a small number of underlying dimensions.

Conclusion

The study concludes that AI and FinTech adoption in banking services is fundamentally driven by experiential and perception-based factors rather than demographic characteristics. Users who actively engage with AI-enabled banking tools and experience positive financial outcomes develop stronger satisfaction levels, which subsequently enhance behavioural intention for future usage.

The three-factor structure identified through factor analysis confirms that AI adoption behaviour is multidimensional, consisting of usage exposure, satisfaction perception, and future intention formation.

Although demographic variables show limited statistical significance, they do not meaningfully explain adoption behaviour. Instead, technology-related perceptions—particularly satisfaction, usability, and perceived financial impact—play a dominant role.

Therefore, sustainable AI adoption in banking requires:

- ✓ Customer-centric design,
- ✓ Enhanced service quality,
- ✓ Clear communication of benefits,
- ✓ Continuous user engagement strategies.

The findings provide strong empirical support for extending TAM and UTAUT frameworks within AI-driven banking environments and offer actionable insights for financial institutions seeking to strengthen digital transformation strategies.

The present study examined the adoption of Artificial Intelligence (AI) and FinTech-enabled banking services by analysing customer behaviour, satisfaction levels, and the influence of demographic and experiential factors. Based on 102 valid responses and the application of descriptive statistics, reliability testing, regression analysis, correlation analysis, and factor analysis, the findings provide meaningful insights into the determinants of AI-driven banking adoption. The reliability analysis produced a Cronbach’s Alpha value of 0.846 for the 12-item scale, indicating strong internal consistency and confirming that the measurement instrument reliably captured the underlying construct of AI adoption behaviour. This establishes the robustness of the data and supports the validity of subsequent statistical interpretations.

The descriptive statistics reveal that respondents are generally educated, digitally aware, and already exposed to FinTech services. The mean scores related to satisfaction and future usage intention suggest a favorable attitude toward continued adoption of AI-based financial technologies. While moderate standard deviations indicate variation in technological adaptation levels, the overall trend reflects increasing acceptance and growing familiarity with AI-enabled banking services. This suggests that AI adoption among respondents is not at an introductory stage but rather at a progressive stage where prior experience shapes future behavioural intentions.

The regression analysis examining demographic influences on future FinTech usage intention indicates that variables such as age, gender, and employment status show statistical significance; however, the model’s explanatory power remains weak, as reflected by the very low adjusted R-square value. This finding is particularly important, as it demonstrates that although certain demographic characteristics may exhibit statistical relationships, they do not substantially explain customers’ intention to increase AI or FinTech usage. In other words, adoption behaviour is not primarily determined by demographic identity but by experiential and perceptual factors.

The correlation analysis provides deeper insights into behavioural dynamics. Significant positive relationships were observed between FinTech usage and satisfaction, usage and future intention, and satisfaction and future adoption plans. Additionally, perceived positive impact on financial habits is associated with higher levels of continued usage intention. These relationships confirm that adoption behaviour is largely experience-driven. Customers who actively use AI-enabled banking services and perceive tangible financial benefits develop stronger satisfaction levels, which in turn reinforce their intention to continue or expand usage. Demographic variables, by contrast, display weak and largely insignificant correlations with adoption behaviour, reinforcing the conclusion that psychological and experiential factors dominate decision-making processes in AI-based banking adoption.

The factor analysis further strengthens this interpretation. The scree plot indicates a clear three-factor structure representing adoption and usage behaviour, satisfaction and service experience, and behavioural impact with future intention. These dimensions closely align with established theoretical frameworks such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). The findings empirically validate that perceived ease of use, perceived usefulness, and behavioural intention form the core structure

underlying AI adoption in banking services. Satisfaction emerges as a crucial outcome variable that bridges actual usage experience and future behavioural intention.

Overall, the study concludes that AI and FinTech adoption in banking services is fundamentally driven by customers' usage experience, perceived usefulness, satisfaction, and behavioural intention rather than demographic characteristics. The adoption process follows a cognitive-experiential pathway in which interaction with AI systems generates satisfaction, satisfaction enhances perceived benefits, and perceived benefits strengthen long-term usage intention. Sustainable AI implementation in banking therefore depends on enhancing service quality, ensuring ease of use, building trust, and clearly communicating financial advantages to customers. By empirically validating TAM and UTAUT constructs within the AI-banking context, the study contributes to the growing literature on digital transformation in financial services and provides practical guidance for banks seeking to strengthen customer-centric AI strategies.

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