Article

The Role Of Ai-Driven Personalisation In Shaping Customer Empowerment, And Trust In Digital Financial Services: An Empirical Study

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Abstract: The present research will let us understand how Artificial Intelligence (AI) driven personalisation continues to reshape the financial industry, enabling digital financial services to develop customised products and services tailored to customers' needs. Besides leveraging advanced data analytics, machine learning (ML) and natural learning processing (NLP), banks,and financial institutions canre a deeper insight into their customer actions and preferences to empower them. Financial institutions can deliver more targeted services by applying machine learning algorithms and predictive analytics to pin downtrends and anticipate customer behaviour. However, implementing hyper-personalisation thus brings several challenges like data privacy concerns, ethical considerations, and the need for robust cybersecurity measures to protect sensitive customer information, which will be discussed briefly. Despite many challenges, such advancement is vital in today's financial landscape to boost efficiency and performance and shape customer empowerment. The research findings also aim to demonstrate that AI can personalise customer experiences and drive engagement across a wide range of financial services. A sample of 231 was collected from different sectors. The factors that identify the purpose of AI-Driven Personalisation in Shaping Customer Empowerment, and Trust in Digital Financial Services are AI-driven personalisation, Customer Empowerment, Trust in Digital Financial Services and Customer Engagement.

Keywords: Artificial Intelligence, Financial industry, Predictive analytics, Customer empowerment, Machine learning.

INTRODUCTION

Financial institutions in today's rapidly progressive business environment constantly seek new strategies to enhance customer experiences and stay competitive. In recent years, it has been observed that, as customers become more selective, demanding and tech-savvy, financial institutions must deliver better personalised, seamless experiences that meet their expectations to gain trust in their financial services. Depending on the factors like transparency, data privacy practices and content accuracy, AI-driven personalisation in financial digital services can either strengthen or weaken customer trust. Thus, when personalisation aligns with user preferences, it could boost satisfaction and loyalty amongst customers. However, many customers do have huge concerns about privacy, such as risk related to inaccurate or intrusive content, and the absence of human authenticity could create distrust. Digital financial services need to balance innovation with clear data practices and the responsible use of ethical AI to strengthen customer satisfaction, build loyalty, and preserve their trust. According to

Mahalakshmi et.al. (2022), the financial services sector is rapidly adopting artificial Intelligence (AI) to reshape their customer experiences as well as improve operational efficiency towards digital financial services. With the integration of AI technologies, banks are building dynamic, data-driven ecosystems that deliver highly personalised services. AI tools and technologies can examine tremendous volumes of data within seconds to strengthen fraud detection in financial services, thereby automating complex decisions, enhancing customer experience (CX) and increasing overall efficiency. These innovations enable financial organisations to assess customer details in real-time and create customised financial solutions that provide personalised suggestions that improve engagement as well as satisfaction. In addition, Ashrafuzzaman et.al. (2025) mentioned that AI-driven personalisation is firmly based on customer behaviour analytics, which involves gathering, analysing, and putting insights from their customer interactions to provide customers with personalised financial services. For example, in financial services, factors like transactional frequency, device usage habits, and customer preferences are also examined to predict user needs and enable proactive service delivery. The research work also indicated that customer remain more empowered and more loyal towards financial organisations that recognise their

LITERATURE REVIEW

According to Agur et al. (2020), the growth of online banking services, mobile payments, and other digital platforms has resulted in a massive surge of financial data. Conventional systems of financial services have found it difficult to handle such unstructured, complex information and extract insights from it. AI in banking or its growth has gone through different stages, beginning with simple automation and advancing to smart, personalised services. Several key factors, including the above-mentioned, have driven the adoption of artificial Intelligence (AI) in digital financial services, such as the growing volume of digital data, the need for greater efficiency, and the rising expectations of consumers for personalised services. To enhance customer experiences and improve operational efficiency in digital banking services, financial sector services have increased the integration of artificial intelligence. Both academic and industry research are placing a greater emphasis on how AI is able to study customer behaviour, anticipate their preferences, and provide personalised experiences as the banking sector experiences rapid digital transformation. Kodali. (2022) mentioned that personalisation in digital banking services is achieved while using different AI methods such as natural language processing (NLP), deep learning (DL), machine learning (ML), recommendation systems, as well as sentiment analysis. Each of them plays a unique and major role in understanding customer behaviour and tailoring services. Kothandapani. (2019), mentioned that Machine learning (ML), a branch of AI, enables financial institutions to examine the vast amounts of data sets and uncover patterns and trends that would be impossible for humans to detect. This ability has paved the way for AI applications in essential areas such as fraud detection and risk management. Natural language processing is another type of AI method, mainly used in chatbots, virtual assistants, and voice-based banking services. AI-driven chatbots and virtual assistants provide round-the-clock,

financial behaviours and respond to them with personalised services. Vandanapu. (2024), asserted that personalisation also includes the tailoring of financial products and services to match their user profiles, risk appetite, and spending patterns in digital banking services. The above-mentioned approaches have therefore helped banks improve conversion rates and strengthen customer relationships by aligning their offerings with individual requirements. Virtual assistants and chatbots offer customers 24*7 support, while handling everything from basic queries to customised advice. Faisal et.al. (2024) stated that AI-based personalisation methods are enhanced with real-time fraud detection by monitoring behavioural patterns to spot and flag unusual or suspicious activities. Artificial Intelligence-powered tools and technologies also tend to provide tailored insights and alerts, which help customers manage budgets, save effectively, and strengthen their overall financial well-being. The future of AI in the financial sector or banking is set to be very transformative, with the innovations that are likely to redefine the industry in significant ways. Financial institutions are expected to harness AI to provide even more customised and efficient services as technology advances. Therefore, the financial sector will grow more flexible, customer-focused and secure as AI becomes more embedded in digital financial services.

personalised assistance, thereby handling inquiries and offering recommendations to enhance overall customer satisfaction and empower them. Natural Language Processing (NLP) is also used, while supervised learning methods are often used to predict customer churn and assess credit scores; therefore, unsupervised learning helps group customers into segments based on their behaviour patterns. Deep learning builds on these abilities by processing unstructured data like social media posts and voice interactions in multiple layers, providing a more complete understanding of customer behaviour. These tools enhance users' interactions by recognising customers' intent, understanding the situation, and responding in a human-like manner, making digital experiences more natural and easier to use. According to Sipos, D. (2025), while highlighting both the advantages and the obstacles towards the implementation of such a system, AI-powered personalisation influences customer satisfaction, loyalty, trust, and perceived value. Issues like ethical data usage, privacy risks, algorithmic bias, and adherence towards regulatory compliance have also gained significant areas of focus. Financial institutions have greatly increased their digital touchpoints, making services more accessible and convenient over the years, with the expansion of mobile applications, web platforms, and automated customer support channels. "AI-powered personalised systems are able to analyse complex behavioural patterns and provide timely interventions like credit alerts, spending suggestions, or fraud detection measures." These innovations help to minimise friction across customer touchpoints, enhance decision-making accuracy, and build greater trust in digital financial services. Artificial intelligence tools and technologies have emerged as a key driver in modernising financial services and empowering customers by providing capabilities that range from automation to advanced personalisation. While empowering customers, the adoption of AI in digital banking practices brings innovative solutions that improve

efficiency, strengthen security, and improve customer satisfaction. According to Sheth et.al. (2022), Integration of AI towards personalisation has become an essential resource for banks as competition intensifies. From the optimisation of operations to delivering personalised customer experiences, AI is reshaping multiple dimensions of the financial sector. AI allows financial institutions and banks to provide personalised investment guidance, customised product suggestions, and unique financial planning advice that are tailored to each customer's unique behaviour and objectives. Therefore, this, in turn, drives higher customer satisfaction, stronger loyalty with the financial institution, and deeper engagement. AI-powered personalisation also builds customer trust by delivering them with more relevant, meaningful, and customised experiences that make all individuals feel recognised and valued. This approach of AI-powered personalisation has also contributed towards greater financial inclusion amongst underserved populations, as integration of AI extends beyond traditional financial records, to examine a broader set of data, such as spending behaviours, social media activity, and payment trends, offering a more precise evaluation of a borrower's creditworthiness. Modern AI algorithms can protect sensitive data and customer assets while quickly detecting and addressing fraudulent activity. As cyber threats grow more complex, "artificial intelligence is expected to play a significant role towards bolstering security." Customers are supposed to receive tailored notifications about their account's activity, investment options, and bill payments thanks to AI-based personalised services, which encourage better money management and increased customer engagement. AI-powered personalisation looks at consumers' spending habits and financial goals to recommend the best goods and services, like credit cards and loans, at the best times. Bhattacharya & Sinha (2022) mentioned that Artificial Intelligence (AI) allows banks to offer tailored support by processing large volumes of customer data, prompt notifications, and proactive guidance, making customers' financial experiences more convenient and secure. With the help of AI-integrated tools, they can spot unusual customer behaviour to enhance fraud detection and provide them with tailored security advice, making customers feel more secure and safer. Financial institutions are able to earn and retain the trust and loyalty of their customers by providing individualised and proactive services, which boost engagement and improve cross-selling results. They allow faster and more accurate credit assessments by using alternative data, helping lower loan defaults and enhance risk management. Kannan, S. (2022) stated that the usage of AI-driven predictive analytics and personalised approaches helps different financial institutions to stay competitive by providing them excellent customer experiences and supporting business growth. Routine tasks such as KYC verification, loan approvals, compliance checks, and many more are taken care of by AI, which lowers costs and keeps processes consistent. Strengthens their relationships with customers by predicting their needs and providing them with useful, timely advice. AI personalisation helps financial institutions, from digital banking services, to move from just being service providers to becoming trusted financial partners. According to some reports by McKinsey, the integration of generative AI could bring an extra $200 to $350 billion each year in the financial sector's revenue. Such growth is mainly encouraged by the better use of resources, which include enhancing customer experience and improving problem-solving capabilities. Banks are able to boost their earnings by reducing the extra time spent collecting and analysing data. With the help of AI, bank managers are able to handle more tasks without the need for extra resources. In simple terms, with the integration of AI, businesses in every field are able to understand each customer better to empower them. Helps financial institutions to learn what their users care about, the right time to connect with them, which offers to show, and the best way to do it. According to Egbuhuzor et.al. (2021), it allows financial organisations and their working staff to offer better services without the need to put in extra effort, by giving more detailed and accurate information. Still, cybersecurity remains a major issue, as about 345 million people across the world were affected by cybercrimes in the year 2023. Banks are able to protect their customers by using AI-automated systems, which spot unusual activities and act in advance. Sheth et al. (2022) asserted that despite the many roles played in customer empowerment, they still trust AI, depending on the financial task. Customers are less confident when it comes to making big decisions such as taking loans or planning for retirement. Several studies also show that banks using AI for real-time and context-based personalisation observe better customer retention and satisfaction than those following traditional service methods. Onabowale. (2024), mentioned similarly, AI is a fast, relatable, growing field of research and development, which can be used in digital financial services to empower customers by creating personalised portfolio investments, assessing risks in real-time forex trading, strengthening business relationships, and designing better health insurance products. Financial institutions and banks are expected to invest in frameworks and policies that ensure the responsible use of AI, helping to build trust among customers and stakeholders. The present study also showed that AI-based personalisation improves satisfaction among customers, keeping customers for longer, and boosting their overall lifetime value.

Objective

To ascertain the Role of AI-driven personalisation in Shaping Customer Empowerment and Trust in Digital Financial Services.

Methodology

A sample of 231 participants was collected from entrepreneurs of different sectors. The method of sampling was "Random sampling" for the collection of data, and the examination was done using an "Explanatory factor analysis" for the results.

Findings

Table 1 demonstrates demographic details, which show that 51.51% are male, and 48.49% are female. Looking at the age, 33.33% are between 30 and 40 years of age, 35.06% are between 40 and 50 years of age, and 31.61% are above 50 years of age. With regards to the type of sector, 29.87% are in banking, 35.93% are in insurance, and 34.20% are in other sectors.

Table 1 Respondents' Details

Variables	Participants	Percentage
Gender		
Male	119	51.51%
Female	112	48.49%
Total	**231**	**100**
Ages in years		
30 to 40	77	33.33%
40 to 50	81	35.06%
Above 50	73	31.61%
Total	**231**	**100**
Sector type		
Banking	69	29.87%
Insurance	83	35.93%
Others	79	34.20%
Total	**231**	**100**

"Factor Analysis"

"KMO and Bartlett's Test"

Table 2: Kaiser-Meyer-Olkin Measure of Sampling Adequacy"

"Kaiser-Meyer-Olkin Measure of Sampling Adequacy"		.765
"Bartlett's Test of Sphericity"	"Approx. Chi-Square"	3901.501
	df	91
	Significance	.000

"KMO and Bartlett's Test", value of KMO is .765 (Table 2).

Table 3: "Total Variance Explained"

"Component"	"Initial Eigenvalues"			"Rotation Sums of Squared Loadings"		
	"Total"	"% Of Variance"	"Cumulative %"	"Total"	"% Of Variance"	"Cumulative %"
1.	6.337	45.266	45.266	**3.793**	27.093	27.093
2.	2.615	18.681	63.947	**3.654**	26.100	53.193
3.	1.948	13.914	77.862	**2.485**	17.747	70.940
4.	1.327	9.478	87.339	**2.296**	16.400	**87.339**
5.	.490	3.500	90.839			
6.	.402	2.871	93.711			
7.	.207	1.480	95.190			
8.	.191	1.364	96.554			
9.	.169	1.210	97.765			
10.	.118	.842	98.607			
11.	.076	.541	99.148			
12.	.054	.389	99.537			
13.	.037	.264	99.801			
14.	.028	.199	100.000			

The four factors contribute towards explaining a total of 87.339% of the variance. Variance explained by AI-driven personalisation is 27.093%, Customer Empowerment is 26.100%, Trust in Digital Financial Services is 17.747%, and Customer Engagement is 16.400%. (Table 3).
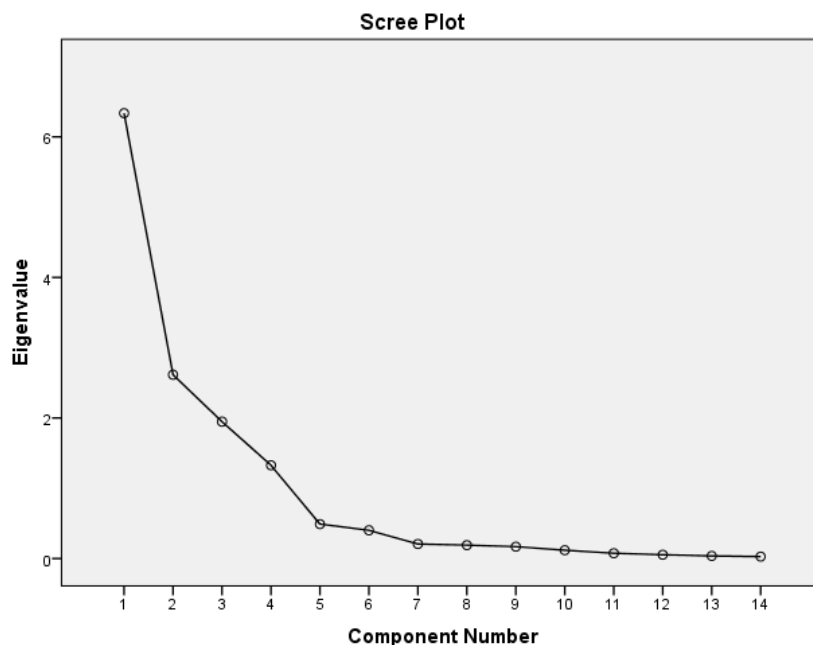
Scree Plot

Table 4 "Rotated Component Matrix"

S. No.	Statements	Factor Loading	Factor Reliability
	AI-driven personalisation		**.952**
1.	Customised financial recommendations can be made by analysing customers' transaction history	.950	
2.	Personalised interface offers increased user satisfaction, enhancing customer experience	.906	
3.	AI predicts customer needs before they arise, like budgeting tips	.859	
4.	Enables financial institutions to segment customers, offering differentiated services	.846	
	Customer Empowerment		**.964**
1.	Virtual assistant, AI chatbots make complex financial information easily understandable	.958	
2.	AI-driven dashboards help with product comparison and plan the budget efficiently	.907	
3.	Personalisation gives customers more control over financial activities	.904	
4.	AI guides users to learn about financial products and risk in real-time	.878	
	Trust in Digital Financial Services		**.876**

1.	AI identifies suspicious activities, improves cybersecurity, and reduces risks	.910	
2.	AI models provide accurate and real-time insights into financial transactions	.843	
3.	An AI system reduces human errors and ensures consistent service	.798	
	Customer Engagement		**.824**
1.	Allow financial institutions to offer highly relevant services and recommendations to customers	.924	
2.	AI predicts the financial needs of customers and offers targeted products	.917	
3.	Constant monitoring and refining of AI algorithms ensure a personalised experience	.642	

Factors of the study and its related variables

The first factor of the study is AI-driven personalisation. It shows that variables like customised financial recommendations can be made by analysing customer transaction history, a personalised interface offers increased user satisfaction, enhancing customer experience, AI predicts customer needs before they arise, like budgeting tips and enables financial institutions to segment customers, offering differentiated services. Customer Empowerment is the second factor, its variables are Virtual assistant, AI chatbots make complex financial information easily understandable, AI-driven dashboards help product comparison and plan budget efficiently, personalisation gives customers more control over financial activities, and AI guides users to learn about financial products and risk in real-time. The third factor is Trust in Digital Financial Services, which includes variables like AI identifying suspicious activities, improving cybersecurity, and reducing risks. AI models provide accurate and real-time insights into financial transactions, and AI systems mitigate human errors and ensure consistent service. The last and fourth factor is Customer Engagement, the variables it includes are allowing financial institutions to offer highly relevant services and recommendations to customers, AI predicts the financial needs of customers and offers targeted products and Constant monitoring and refining of AI algorithms ensure a personalised experience.

Table 5 "Reliability Statistics"

"Cronbach's Alpha"	"Number of Items"
.896	14

Total reliability of 14 items that include variables for Role of AI-Driven Personalisation in Shaping Customer Empowerment, and Trust in Digital Financial Services, 0.896 (Table 5).

CONCLUSION

The results of this research work conclude that AI-powered personalisation is changing the digital banking sector in several ways, such as by improving customer engagement through behaviour analysis, predictive tools, and intelligent automation. AI-powered chatbots, which are also called as virtual assistants, help customers manage their finances by supporting them in paying off their debts, like student loans or credit cards, by improving their savings habits, and also providing them with a smooth customer experience by handling their accounts and payments quickly without long waits. The changing financial system creates a significant risk regarding data privacy, which financial institutions need to handle, as third-party payment methods can expose customer information. George. (2024) concluded that the management of financial organisations must always be ready and stay alert to fast-evolving digital methods, which lead to the creation of new risks in automated operations. Through the results, it may be concluded that to make digital financial services safe and effective, it is crucial to have strong rules, modern technology, and better customer awareness. The above steps help to build trust amongst customers, stop fraudulent activities, and make sure that people can use and benefit from digital financial services with ease. A sample of 231 was collected from different sectors. The factors that identify the role of AI-Driven Personalisation in Shaping Customer Empowerment, and Trust in Digital Financial Services are AI-driven personalisation, Customer Empowerment, Trust in Digital Financial Services and Customer Engagement.

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