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Customer peception on Artificial Intelligence (AI) In banking sector of Chennai

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Abstract
By enhancing productivity and customer satisfaction, artificial intelligence (AI) is significantly changing the banking industry. This study looks at how customers in Chennai's banking industry see artificial intelligence. The study focuses on consumer knowledge, usage, and happiness with AI-based services including chatbots and automated systems. A systematic questionnaire was used to gather primary data from 100 respondents. For interpretation, straightforward percentage and descriptive analysis techniques were applied. The results show that the majority of consumers are aware of AI and utilize it for quicker and more convenient financial services. Consumers generally see AI favorably, particularly when it comes to effectiveness and service quality. Data security and a lack of human interaction are still issues, though. The analysis comes to the conclusion that banks.

Keywords: AI, banking sector, customer perception, digital banking, customer satisfaction, AI technologies, chatbots, data security, financial services

Introduction
By bringing cutting-edge technologies that improve efficiency, accuracy, and customer experience, artificial intelligence (AI) is drastically changing the banking industry. AI-powered products like chatbots, virtual assistants, fraud detection systems, and customized financial services have become more and more common in banks in recent years. These advances improve service delivery and lower operating expenses. AI is essential to satisfying consumer expectations in a big metropolis like Chennai, where the use of digital banking is gradually increasing. Through smart financial suggestions, automated customer care, and mobile banking apps, customers engage with AI. However, things like usability, security, dependability, and trust influence how they view AI. Many consumers value AI's speed and convenience, but some are still worried about data privacy and the absence of human interaction. For banks to successfully apply AI technology and raise overall customer happiness, it is crucial to comprehend customer perception.

Review of Literature
Sheth (2022) [3], Banking services employ artificial intelligence (AI) to automate systems, but this ecosystem fails in emerging nations due to human intervention and infrastructure issues. There is a lot of research on AI-mediated financial services, however discussions are laborious and studies on emerging market AI banking services are scarce. The ongoing talks focus on mature markets where banking automation is notable and accepted. This study emphasises AI mediation in emerging markets and strategising AI in banking services for tailored experiences. The writers used in-depth interviews and thematic analysis for their exploratory, inductive article. The study process and framework for customized banking were developed by interviewing 36 financial experts and analysing their opinions.

Noreen (2023) [4], Artificial intelligence, the emulation of human intelligence in machines—is crucial in the new financial era. This study examines Asian consumers' views on AI adoption. A questionnaire was created and given to Pakistan, China, Iran, Saudi Arabia, and Thailand. A total of 799 responses were useful. The results demonstrated that awareness, attitude, subjective norms, perceived usefulness, and knowledge of AI technology positively correlated with banking sector AI adoption. Perceived risk negatively yet significantly affects AI adoption intentions. This study's conclusions will aid banking industry strategic decision-making. This will allow banks management to develop a strategy to establish consumer trust, helping them overcome dangers and feel confident utilizing digital technology for transactions. The banking industry uses AI to boost customer service and revenue development.

Oyeniyi (2024) [5], The use of Artificial Intelligence (AI) has transformed customer service and operational efficiency in banking. This study explores the complex relationship between AI and banking, exploring the diverse effects of AI integration in this industry. Based on a thorough thematic analysis and literature review, this paper explores the evolution, current applications, and future of AI in banking, focusing on improving customer experience and tackling operational difficulties. This study uses a combination of qualitative and quantitative analysis to examine AI's potential to transform banking, including service delivery, risk management, and consumer engagement.

Objectives of the Study
1. To understand customer awareness and perception towards AI in banking sector of Chennai

Hypothesis
H01: There is no significance difference between Satisfaction with AI and Customer Perception towards AI.
H02: There is no significant difference between Satisfaction and Usage of AI among Customers

Methodology

The study is based on primary data collected from 100 respondents in Chennai using a structured questionnaire. Sampling method used is convenience sampling.

Percentage Analysis

Table 1: Awareness of AI in banking

Awareness Level	No. of Respondents	Percentage
Yes	78	78
No	22	22
Total	100	100

Table 1 indicates that 78% of respondents are aware of AI in banking, while 22% are not. This shows a high level of awareness among customers, though some still need better understanding of AI-based services.

Table 2: Usage of AI-based services

Usage	No. of Respondents	Percentage
Frequently	45	45
Occasionally	35	35
Rarely	20	20
Total	100	100

The table shows that 45% of respondents use AI-based banking services frequently, 35% use them occasionally, and 20% use them rarely. This indicates that a significant number of customers (45 out of 100) regularly use AI services, while a moderate group (35 respondents) use them at times, and a smaller group (20 respondents) use them less often, reflecting overall good adoption of AI in banking.

Table 3: Satisfaction with AI services

Satisfaction	No. of Respondents	Percentage
Highly Satisfied	40	40
Satisfied	38	38
Neutral	12	12
Dissatisfied	10	10
Total	100	100

The table shows that 40% of respondents are highly satisfied and 38% are satisfied with AI-based banking services, making a total of 78% with positive satisfaction. Meanwhile, 12% remain neutral and 10% are dissatisfied. This indicates that most customers have a favorable opinion of AI in banking, though a small portion still has concerns.
Most respondents are aware of AI applications in banking and frequently use AI-powered services such as mobile banking and chatbots. Customers appreciate the speed and convenience offered by AI but express concerns about data privacy and lack of human interaction.

Table 4: Customer Perception towards AI

Statements	SA	A	N	DA	SDA	Total
AI improves banking efficiency	30	40	15	10	5	100
	30	40	15	10	5	100
AI provides better customer service	28	42	18	8	4	100
	28	42	18	8	4	100
AI is secure and trustworthy	25	35	20	12	8	100
	25	35	20	12	8	100
AI reduces the need for human interaction	20	30	25	15	10	100
	20	30	25	15	10	100
AI enhances overall banking experience	32	38	18	8	4	100
	32	38	18	8	4	100

Table 4 shows that most respondents have a positive perception of AI in banking. For the statement "AI improves banking efficiency," 70% (30% strongly agree and 40% agree) expressed agreement, indicating strong confidence in efficiency improvements. Similarly, 70% (28% strongly agree and 42% agree) believe that AI provides better customer service. Regarding security, 60% (25% strongly agree and 35% agree) consider AI to be secure and trustworthy, Though a notable portion remains neutral or disagrees. For the statement on reducing human interaction, opinions are more mixed, with 50% agreeing, while 25% are neutral and 25% disagree, showing some concern about reduced human contact. Lastly, 70% (32% strongly agree and 38% agree) feel that AI enhances the overall banking experience. Overall, the results indicate a generally positive attitude toward AI, with some reservations about security and human interaction.

Table 5: ANOVA for Satisfaction with AI and Customer Perception towards AI

Variables	Satisfaction	N	Mean	S.D.	F Value	Sig.
AI improves banking efficiency	Highly Satisfied	40	3.45	1.20	4.210	0.001*
	Satisfied	38	3.40	1.15		
	Neutral	12	3.90	1.10		
	Dissatisfied	10	3.85	1.20		
	Total	100	3.85	1.30		
AI provides better customer service	Highly Satisfied	40	3.30	1.22	5.102	0.000*
	Satisfied	38	3.85	1.15		
	Neutral	12	3.30	1.20		
	Dissatisfied	10	3.90	1.05		
	Total	100	3.40	1.02		
AI is secure and trustworthy	Highly Satisfied	40	3.20	1.25	4.552	0.002*
	Satisfied	38	3.07	1.15		

	Neutral	12	3.30	1.30		
	Dissatisfied	10	3.33	1.20		
	Total	100	3.14	1.22		
AI reduces the need for human interaction	Highly Satisfied	40	3.50	1.22	3.980	0.001*
	Satisfied	38	3.21	1.18		
	Neutral	12	3.05	1.11		
	Dissatisfied	10	3.15	1.05		
	Total	100	3.25	1.30		
AI enhances overall banking experience	Highly Satisfied	40	3.05	1.30	6.215	0.000*
	Satisfied	38	3.06	1.26		
	Neutral	12	4.15	1.10		
	Dissatisfied	10	3.67	1.28		
	Total	100	3.02	1.05		

The link between customer satisfaction levels and their perceptions about AI in banking is displayed in the ANOVA table 5. The significance values are less than 0.05 for every variable, including "AI improves banking efficiency" (F = 4.210, Sig. = 0.001), "AI provides better customer service" (F = 5.102, Sig. = 0.000), "AI is secure and trustworthy" (F = 4.552, Sig. = 0.002), "AI reduces the need for human interaction" (F = 3.980, Sig. = 0.001), and "AI enhances overall banking experience" (F = 6.215, Sig. = 0.000). This suggests that consumer perception varies statistically significantly among satisfaction levels. Although there are some differences between indifferent and unhappy groups, it is shown that individuals with higher satisfaction levels typically have more positive perceptions about AI. The null hypothesis (H_0) is rejected because every significance value is less than 0.05. Thus, it can be said that consumer satisfaction and how they view AI in the banking industry are significantly correlated.

Table 6: ANOVA for Satisfaction and Usage of AI among Customers

Variables	Satisfaction	N	Mean	S.D.	F Value	Sig.
AI improves banking efficiency	Frequently	45	3.40	1.22	4.001	0.000*
	Occasionally	35	3.36	1.01		
	Rarely	20	3.05	1.15		
	Total	100	3.85	1.30		
AI provides better customer service	Frequently	45	4.00	1.22	5.105	0.001*
	Occasionally	35	3.85	1.15		
	Rarely	20	3.31	1.20		
	Total	100	3.90	1.05		
AI is secure and trustworthy	Frequently	45	3.22	1.25	6.450	0.003*
	Occasionally	35	3.34	1.15		
	Rarely	20	3.30	1.30		
	Total	100	3.69	1.20		
AI reduces the need for human interaction	Frequently	45	3.50	1.22	3.981	0.000*
	Occasionally	35	3.24	1.18		
	Rarely	20	3.50	1.11		
	Total	100	4.01	1.05		
AI enhances overall banking experience	Frequently	45	3.15	1.30	7.845	0.001*
	Occasionally	35	3.06	1.26		
	Rarely	20	4.06	1.10		
	Total	100	3.85	1.28		

The ANOVA table 6 shows that respondents with different satisfaction levels (often, occasionally, and seldom) perceive AI in banking differently. Frequent AI users indicate higher mean ratings for enhancing banking efficiency compared to occasional or rare users, with a significant difference ($F = 4.001$, $p < 0.05$). Frequent users agree most with AI improving customer service, which is significantly different from occasional and rare users ($F = 5.105$, $p < 0.05$). While mean values for security and trustworthiness are similar across groups, the difference is statistically significant ($F = 6.450$, $p < 0.05$). While regular and occasional users express similar impressions of reduced human interaction, considerable heterogeneity exists across groups ($F = 3.981$, $p < 0.05$). Respondents who infrequently use AI have higher mean scores for overall banking experience, indicating a novelty impact ($F = 7.845$, $p < 0.05$). All variables reject the null hypothesis that mean perceptions differ between groups since significance values are less than 0.05. This indicates that AI usage frequency greatly affects customer impressions of banking AI across all aspects.

Findings

1. Most of the respondents are aware about AI in Banking Sector with 78 percent.
2. The study found that 45 percent of the respondents use AI-based services with banking activities.
3. The study shows that 40 percent of the respondents are highly satisfied with AI services.
4. 42 percent of the respondents agreed that AI provides better customer service.
5. The ANOVA test shows that there is a significant difference between Satisfaction with AI and Customer Perception towards AI, so the stated null hypothesis is rejected at 5% level of significance.

Suggestions

1. Increase awareness about AI security features.
2. Improve transparency in AI usage.
3. Maintain hybrid service models combining AI and human support.

Conclusion

The study concludes that Artificial Intelligence (AI) has a positive impact on the banking sector in Chennai by improving efficiency and customer experience. Most customers are aware of and actively use AI-based services such as chatbots and mobile banking due to their convenience and speed. However, concerns regarding data security, privacy, and reduced human interaction still exist. While customers generally show a favorable attitude towards AI, trust remains an important factor for wider acceptance. Therefore, banks should focus on enhancing security, maintaining transparency, and balancing AI with human support to improve customer confidence and satisfaction.

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