

# International Journal of Advance Research in Computer Science and Management Studies

Research Article / Survey Paper / Case Study

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A Monthly Double-Blind Peer Reviewed, Refereed, Open Access, International Journal - Included in  
the International Serial Directories

## *A Study on Customer Awareness and Acceptance of AI Chatbots in Banking Sector*

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DOI: <https://doi.org/10.61161/ijarcsms.v13i3.5>

**Abstract:** *The adoption of artificial intelligence (AI) chatbots in the banking sector is transforming customer interactions, offering new opportunities for service delivery. This study examines customer awareness and acceptance of AI chatbots, focusing on the impact of demographic factors on these perceptions. Using a sample of 61 respondents, the study employs chi-square and ANOVA analyses to explore associations between gender, age, and customer experiences with chatbots. The findings indicate that there is no significant association between gender and awareness, nor are there notable differences in familiarity levels across demographic groups. Additionally, the study finds no significant relationship between age and ease of use or between gender and satisfaction with chatbot services. Key challenges identified include issues with query interpretation, lack of personalization, technical problems, and concerns regarding security and privacy. These insights suggest that while AI chatbots offer enhanced service efficiency, improvements are needed to address these challenges and better meet customer expectations. This research provides practical recommendations for banks to optimize their chatbot implementations, enhancing customer engagement and satisfaction. This research offers valuable perspectives on the role of AI chatbots in the banking sector, assisting financial institutions in optimizing their digital strategies and meeting evolving customer expectations.*

**Keywords:** *Artificial intelligence, Chatbots, Banking sector, Customer satisfaction.*

### I. INTRODUCTION

The banking industry is experiencing a profound digital transformation, driven by the need to enhance customer service and operational efficiency. As financial institutions strive to adapt to the evolving technological landscape, artificial intelligence (AI) chatbots have emerged as a significant innovation, reshaping how banks interact with their customers. These chatbots, powered by advancements in artificial intelligence and natural language processing (NLP), are designed to provide instantaneous support, streamline banking processes, and offer a personalized customer experience. Their ability to simulate human-like conversations has made them a valuable asset in managing routine customer inquiries and performing complex tasks.

Customer awareness of AI chatbots in banking is a critical factor influencing their adoption and effectiveness. Awareness involves not only recognizing the existence of chatbot technology but also understanding its capabilities, limitations, and potential benefits. While chatbots are increasingly common in various sectors, such as retail and telecommunications, their

application in banking presents unique challenges and opportunities. Many customers may be familiar with chatbots from other contexts but may not fully grasp their role or functionality within the banking environment. This gap in awareness can impact how customers perceive and engage with chatbot services.

Acceptance of AI chatbots goes beyond mere recognition; it reflects customers' willingness to use these technologies and their comfort with interacting with automated systems for financial transactions. Several factors influence this acceptance, including the perceived ease of use, the usefulness of the chatbot in addressing customer needs, and concerns about privacy and data security. Understanding these factors is essential for banks to address potential barriers to adoption and enhance the overall customer experience. Effective AI chatbots should not only meet functional requirements but also build trust and provide a seamless interaction experience.

This study seeks to investigate the level of customer awareness and acceptance of AI chatbots within the banking sector. By exploring how well customers understand these technologies, their perceptions of their effectiveness, and their willingness to use them, the research aims to provide a comprehensive view of the current landscape. Additionally, the study examines the benefits that customers derive from AI chatbots, such as improved service efficiency and personalized assistance, while also addressing any challenges or concerns they may have.

The research involves analysing survey data and case studies from various banking institutions to assess the effectiveness of chatbot implementations and gather insights into customer experiences. The findings are intended to offer actionable recommendations for banks to optimize their chatbot strategies, enhance user engagement, and overcome potential obstacles to acceptance. By providing a deeper understanding of customer attitudes toward AI chatbots, this study aims to contribute to the development of more effective digital strategies in the banking sector, ensuring that financial institutions can better meet customer expectations in a rapidly evolving digital world.

## **II. REVIEW OF LITERATURE**

The evolution of customer awareness and acceptance of AI chatbots in the banking sector reflects significant changes over time. Initially, AI chatbots were seen as rudimentary tools with limited functionalities, but advancements in technology have transformed them into sophisticated systems capable of handling complex interactions (Kumar et al., 2019). Customer awareness has grown from basic understanding to a more nuanced recognition of the chatbots' capabilities, driven by increased media exposure and targeted educational efforts by banks (Huang & Benyoucef, 2017). Trust has emerged as a crucial factor in acceptance, with customers expecting robust security measures and transparent data handling, which has been addressed by modern chatbots through improved security features and clear privacy policies (Luger & Sellen, 2016). User experience also plays a pivotal role; enhancements in interface design and interaction quality have led to higher customer satisfaction and acceptance (Ngai et al., 2019). Despite the challenges of integrating AI chatbots with existing systems and overcoming customer resistance, the opportunities presented by these technologies—such as enhanced service efficiency and 24/7 support—are increasingly recognized and leveraged by banks (Chung et al., 2020).

## **III. OBJECTIVES OF THE STUDY**

**The following objectives are framed for the present study**

1. To analyse the benefits that customers gain from interacting with AI chatbots in banking
2. To investigate any concerns or challenges faced by customers when using AI chatbots, including issues related to data privacy, security, and the quality of interactions.
3. To collect and analyse customer suggestions and experiences regarding AI chatbots, aiming to understand their preferences and expectations for enhancing chatbot services.

## IV. RESEARCH METHODOLOGY

The study utilized both primary and secondary data to explore customer awareness and acceptance of AI chatbots in the banking industry. Primary data was gathered through a survey aimed at understanding customer attitudes and experiences with AI chatbots. A detailed questionnaire was designed for this survey, and a random sampling technique was used to collect responses from participants. The study's sample size is confined as 61 based convenient sampling technique.

Secondary data was collected from a range of online resources, including websites, digital magazines, academic papers, e-books, and newspapers, to provide additional context and support the analysis of the primary data.

## V. ANALYSIS AND DISCUSSION

Chi-Square Tests					
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.194 <sup>a</sup>	1	.275		
Continuity Correction <sup>b</sup>	.686	1	.408		
Likelihood Ratio	1.196	1	.274		
Fisher's Exact Test				.302	.204
Linear-by-Linear Association	1.174	1	.278		
N of Valid Cases	61				

**H0: there is no significant Association between the gender and the Awareness level**

**H1: there is a significant association between the gender and the awareness level**

**Interpretation:**

The analysis aimed to examine the association between gender and awareness using Chi-Square tests. The results indicated no significant association between the two variables. Specifically, the Pearson Chi-Square test yielded a p-value of 0.275, and the Continuity Correction provided a p-value of 0.408, both exceeding the threshold of 0.05. Fisher's Exact Test also supported this conclusion with p-values of 0.302 (two-sided) and 0.204 (one-sided). These findings demonstrate that gender does not have a statistically significant effect on awareness levels. Therefore, the null hypothesis, which posited no significant association between gender and awareness, is not rejected.

ANOVA					
Familiarity					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.706	2	.353	.249	.780
Within Groups	82.212	58	1.417		
Total	82.918	60			

**H0: There are no significant differences in familiarity levels between the groups.**

**H1: There are significant differences in familiarity levels between the groups.**

**Interpretation:**

The ANOVA results showed a between-groups sum of squares of 0.706 with 2 degrees of freedom and a mean square of 0.353. The F-ratio was 0.249, with a p-value of 0.780. Given the p-value exceeds the standard significance level of 0.05, there is

insufficient evidence to reject the null hypothesis. Therefore, it can be concluded that there are no significant differences in familiarity levels among the groups in the study.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.402 <sup>a</sup>	2	.496
Likelihood Ratio	1.212	2	.546
Linear-by-Linear Association	1.246	1	.264
N of Valid Cases	61		

H0: There is no significant association between age and ease of use.

H1: There is a significant association between age and ease of use.

#### Interpretation:

The Pearson Chi-Square test resulted in a value of 1.402 with 2 degrees of freedom and an asymptotic significance of 0.496. The Likelihood Ratio test produced a value of 1.212 with 2 degrees of freedom and an asymptotic significance of 0.546. Additionally, the Linear-by-Linear Association test yielded a value of 1.246 with 1 degree of freedom and an asymptotic significance of 0.264. All p-values are greater than the standard significance level of 0.05. Therefore, there is insufficient evidence to reject the null hypothesis, indicating that there is no significant association between age and ease of use in the sample studied.

Chi-Square Tests					
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.060 <sup>a</sup>	1	.806		
Continuity Correction <sup>b</sup>	.000	1	1.000		
Likelihood Ratio	.060	1	.806		
Fisher's Exact Test				1.000	.509
Linear-by-Linear Association	.059	1	.808		
N of Valid Cases	61				

H0: There is no significant association between gender and satisfaction.

H1: There is a significant association between gender and satisfaction.

#### Interpretation:

The Pearson Chi-Square test yielded a value of 0.060 with 1 degree of freedom and an asymptotic significance of 0.806. The Continuity Correction test produced a value of 0.000 with 1 degree of freedom and a p-value of 1.000. The Likelihood Ratio test resulted in a value of 0.060 with 1 degree of freedom and an asymptotic significance of 0.806. Fisher's Exact Test provided a two-sided p-value of 1.000 and a one-sided p-value of 0.509. The Linear-by-Linear Association test showed a value of 0.059 with 1 degree of freedom and an asymptotic significance of 0.808. All p-values exceed the conventional significance level of 0.05. Thus, there is insufficient evidence to reject the null hypothesis, indicating that there is no significant association between gender and satisfaction in the sample studied.

**Challenges Faced with AI Chatbots in Banking:**

What are the challenges you faced while using AI chat bots in banking?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Privacy issues	5	8.2	8.2	8.2
	Security concerns	7	11.5	11.5	19.7
	Lack of personal interaction	16	26.2	26.2	45.9
	Misunderstanding queries	20	32.8	32.8	78.7
	Technical problems	13	21.3	21.3	100.0
	Total	61	100.0	100.0	

**Interpretation:**

The survey identified several key challenges related to the use of AI chatbots in banking. The most frequently reported issue was misunderstanding queries, affecting 32.8% of respondents, indicating significant difficulties with the chatbot's ability to accurately interpret and address customer inquiries. Another major concern was lack of personal interaction, noted by 26.2% of respondents, highlighting a deficiency in personalized customer service provided by chatbots. Technical problems were cited by 21.3% of participants, suggesting that operational issues present a considerable challenge. Security concerns were raised by 11.5% of respondents, reflecting apprehensions about the safeguarding of sensitive information. Finally, privacy issues were mentioned by 8.2% of respondents, pointing to worries about data confidentiality. These findings emphasize the need for improvements in AI chatbot technology to enhance query understanding, personalization, and to effectively address technical, security, and privacy concerns.

**VI. DISCUSSION**

There are numerous applications and AI tools were impacted business and financial transactions. Here we have analysed this research findings in order to reveals consumer awareness of AI chat bots in banking. Findings of research had reveals that most of the respondents are not faced any difficulty and they eager to adopt themselves for transformation of technology. Most of the scholars opined that whole business world will impacted of Artificial Intelligence and robotics. But history teaches us, change is permanent and its impacted whole world. Innovation of electricity also threats people for losing jobs and business transformation. Innovation of computer also threats business world for massive transformation working force. AI is another innovation threats us; it creates huge impact on the business and people life cycle. We should adopt them for the change. We learn the skills and aware of the business process.

**VII. CONCLUSION**

The study on customer awareness and acceptance of AI chatbots in the banking sector found that demographic factors such as gender and age do not significantly influence awareness, ease of use, or satisfaction with AI chatbots, as indicated by the Chi-Square and ANOVA tests. The analysis also revealed no significant differences in familiarity levels among groups. Key challenges identified include misunderstanding queries, lack of personal interaction, technical problems, security concerns, and privacy issues. These findings highlight the need for advancements in AI chatbot technology to improve query understanding, enhance personalization, and address technical, security, and privacy concerns effectively, thereby improving the overall customer experience.

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#### *How to cite this article?*

Dr. P Bastin Arockia Raj, (2025). A Study on Customer Awareness and Acceptance of AI Chatbots in Banking Sector.  
*International Journal of Advance Research in Computer Science and Management Studies*, 13(3), 50–55  
<http://ijarcsms.com/docs/paper/volume13/issue3/V13I3-0005.pdf>