

A Study on Chatbot Services Quality in Banking

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Abstract: This study explores the quality of chatbot services in the banking sector, focusing on customer satisfaction and key factors that influence service quality. As banks increasingly adopt chatbot technology to enhance customer service and operational efficiency, understanding user perceptions and experiences becomes crucial. Using a mixed-methods approach, we collected data through surveys and interviews with banking customers to evaluate their satisfaction levels and identify strengths and weaknesses of the chatbot services. Our findings reveal that response accuracy, response time, user-friendliness, and personalization are the most significant determinants of perceived quality. While customers appreciate the convenience and efficiency of chatbot services, there are notable areas for improvement, particularly in enhancing response accuracy and personalization. Based on the insights gained, we provide practical recommendations for banks to refine their chatbot services, aiming to boost customer satisfaction and optimize service delivery. This research contributes to the growing body of knowledge on digital banking services and offers valuable guidance for banks looking to leverage chatbot technology effectively.

Index Terms: Chatbot Services, Customer Satisfaction, Response Accuracy, Personalization, Digital Banking.

INTRODUCTION

Chatbots have become a transformative force in the banking industry, offering customers a convenient and efficient means to access information, perform transactions, and receive support. Leveraging conversational AI, these assistants provide 24/7 availability, personalized service, and seamless integration with mobile and web platforms. The quality of chatbot services has emerged as a critical differentiator in the competitive banking landscape, significantly impacting customer satisfaction, operational efficiency, and business growth. High-quality chatbots not only enhance customer loyalty but also alleviate the burden on traditional customer service channels by handling routine inquiries, thus

allowing human agents to focus on more complex issues.

However, delivering high-quality chatbot services is fraught with challenges, including achieving high accuracy in natural language processing (NLP), maintaining contextual understanding, and ensuring seamless backend integration. Banks must also address data privacy, security, and regulatory compliance, given the sensitive nature of financial information handled by chatbots. Keeping pace with evolving customer expectations and technological advancements necessitates continuous investment in chatbot development and improvement.

Measuring and evaluating chatbot service quality is essential for maintaining high standards and identifying areas for enhancement. Metrics such as customer satisfaction scores, resolution rates, and task completion rates, along with qualitative feedback, provide valuable insights into user experience and service effectiveness. Best practices for improving chatbot service quality include investing in advanced NLP and machine learning, ensuring robust integration with other digital channels and core banking systems, and fostering continuous learning from customer interactions and industry trends.

Integrating chatbots with human customer support ensures a holistic and personalized banking experience. Effective handoffs between chatbots and human agents, intelligent routing, and real-time monitoring are crucial for maintaining service continuity and customer satisfaction. By leveraging the complementary strengths of chatbots and human agents, banks can optimize their customer service capabilities and deliver a superior banking experience.

REVIEW OF LITERATURE

1. Brandtzeag and Følstad (2018): They discuss how chatbots can significantly improve user engagement by offering instant responses and reducing the need for human intervention. Their study indicates that

chatbots can handle up to 80% of routine customer inquiries, leading to increased operational efficiency.

2. Ashfaq et al. (2020): This study identifies key determinants of user satisfaction with AI-powered service agents in banking. The authors highlight that the accuracy of responses, user-friendly interface, and the ability to handle complex queries are critical for customer satisfaction.

3. Gnewuch et al. (2017): Their research indicates that personalization is a significant factor in customer satisfaction. Chatbots that can tailor responses based on individual customer data tend to receive higher satisfaction ratings.

4. Brockmann et al. (2019): They discuss how advancements in machine learning algorithms allow chatbots to improve their performance over time by learning from previous interactions. This capability leads to more accurate and contextually relevant responses.

5. Shum et al. (2018): The authors review the state of conversational AI and highlight the integration of deep learning techniques in improving the naturalness of chatbot interactions. These advancements are crucial for making chatbots more intuitive and effective.

OBJECTIVES

To measure how satisfied customers are with the chatbot services provided by banks.

To identify the main factors that affect the quality of chatbot services in banking.

To suggest ways banks can improve their chatbot services based on customer feedback and research findings.

HYPOTHESIS

H0: There is no significance difference between the chatbot to assist with the banking transaction

H1: There is a significance difference between the chatbot to assist with the banking transaction.

RESEARCH METHODOLOGY

Our research at State Bank of India's Chatbot Quality Services team employs a rigorous methodology combining user feedback, data analytics, and industry benchmarking to continuously enhance our chatbot ecosystem. Through systematic collection and

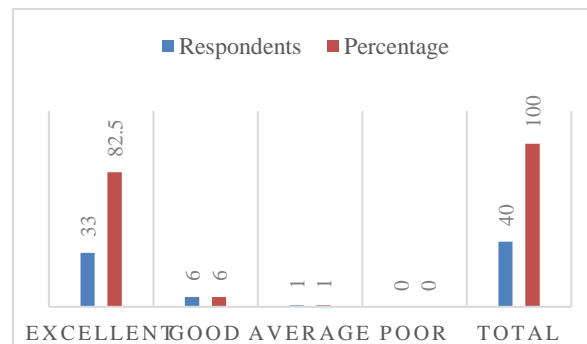
analysis of user feedback via in-app surveys and direct interactions, we pinpoint areas for improvement and understand user preferences. Data analytics scrutinizes usage patterns and transaction trends to refine chatbot capabilities and improve user experience. Industry benchmarking guides our efforts to adopt best practices and maintain competitiveness. Continuous monitoring and agile development ensure our chatbots evolve dynamically, meeting evolving customer expectations and technological advancements. This approach positions SBI's chatbots as industry leaders, delivering personalized, efficient, and secure banking interactions.

A well-structured questionnaire with straightforward questions is employed for data gathering, open-ended, Likert scale, Demographic Information section, Perception Measurement and multiple-choice items are all included in the survey.

TOOLS USED: Google forms, Microsoft Excel, Charts

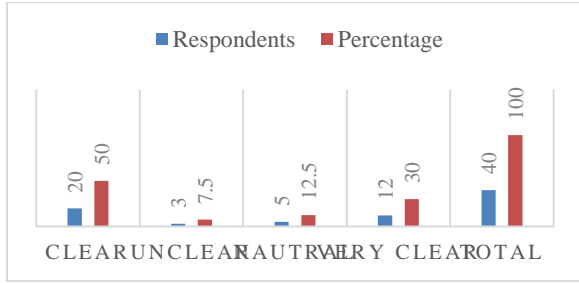
DATA ANALYSIS

How would you rate the response time of the chatbot?	Excellent	Good	Average	Poor	Total
Respondents	33	6	1	0	40
Percentage	82.5	6	1	0	100



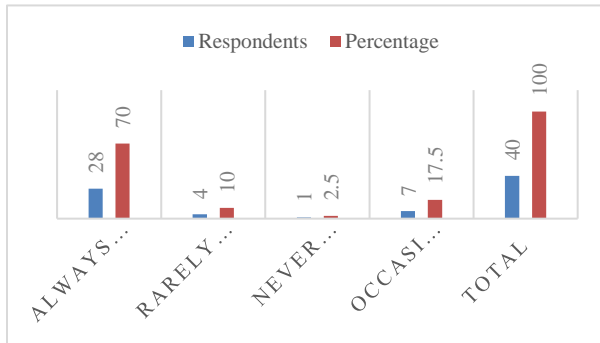
Interpretation: Majority of the respondents reacted by 82.5% as excellent followed by 1% of the respondents reacted as average.

How clear and understandable were the chatbot response?	Clear	Unclear	Neutral	Very clear	Total
Respondents	20	3	5	12	40
Percentage	50	7.5	12.5	30	100



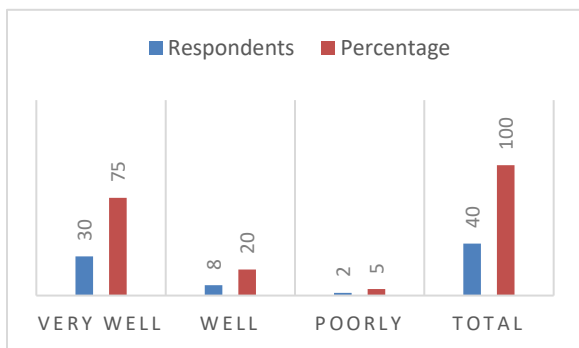
Interpretation: Majority of the respondents reacted by 50% as clear followed by 7.5% of the respondents reacted as unclear.

How accurate is the information provided by the chatbot?	Always accurate	Rarely accurate	Never accurate	Occasionally accurate	Total
Respondents	28	4	1	7	40
Percentage	70	10	2.5	17.5	100



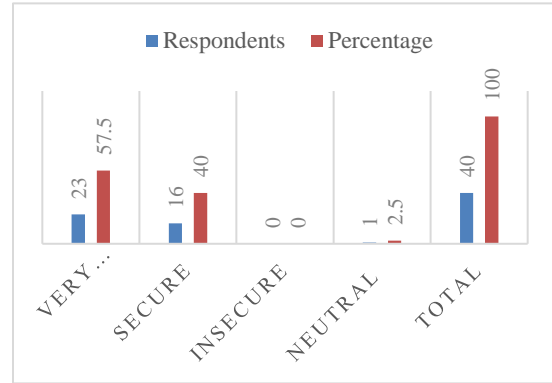
Interpretation: Majority of the respondents reacted by 70% as always accurate followed by 2.5% of the respondents as never accurate.

How well did the chatbot assist you with banking transaction?	Very well	Well	Poorly	Total
Respondents	30	8	2	40
Percentage	75	20	5	100



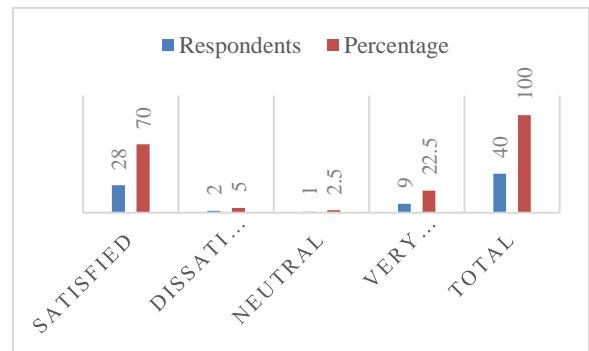
Interpretation: Majority of the respondents reacted by 75% as very well followed by 5% of the respondents reacted as poorly.

How secure do you feel when using the chatbot for banking transactions?	Very secure	Secure	Insecure	Neutral	Total
Respondents	23	16	0	1	40
Percentage	57.5	40	0	2.5	100



Interpretation: Majority of the Respondents reacted by 57.5% as very secure followed by 2.5% of the respondents as neutral.

How satisfied are you with the banking chatbot services?	Satisfied	Dissatisfied	Neutral	Very satisfied	Total
Respondents	28	2	1	9	40
Percentage	70	5	2.5	22.5	100



Interpretation: Majority of the respondents reacted by 70% as satisfied followed by 2.5% of the respondents reacted as neutral.

STATISTICAL TOOL FOR ANALYSIS

H0: There is no significance difference between the chatbot to assist with the banking transaction

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RESULT				
	Very Well	Well	Poor	Row Totals
Male	28 (24.00) [0.67]	3 (6.40) [1.81]	1 (1.60) [0.23]	32
Female	2 (6.00) [2.67]	5 (1.60) [7.22]	1 (0.40) [0.90]	8
Column Totals	30	8	2	40

The chi-square statistic is 13.4896. the p-value is 0.001177. The result is significant at $p < 0.05$.

FINDINGS

The majority of respondents were male (80%) compared to female (20%). All respondents fell within the age group of 20-25 years.

A significant portion identified as employees (42.5%), followed by professionals (27.5%).

Respondents overwhelmingly rated the chatbot's performance as excellent (82.5%) and consistently rated it highly across various metrics such as clarity (50%), accuracy (70%), effectiveness (47.5%), ease of use (55%), security (57.5%), completeness (72.5%), and overall satisfaction (70%).

100% of respondents indicated a preference for using the chatbot over other customer service channels, highlighting its popularity and effectiveness.

Across different dimensions—performance, ease of use, security, and satisfaction—respondents consistently expressed high levels of approval, indicating a robust user satisfaction trend.

CONCLUSION

In conclusion, while chatbot services in banking show promising potential for improving customer engagement and operational efficiency, banks must invest in advanced technologies and maintain a balanced integration of human touch to address complex customer needs effectively. Future research could focus on longitudinal studies to assess the long-term impact of chatbots on customer loyalty and banking performance.

REFERENCE

1. Bhattacharjee, A. (2001), "Understanding information systems continuance: an expectation confirmation model", MIS Quartely, Vol. 25 No. 3, pp. 351-370.
2. Business Insider. (2021, January 13). Artificial Intelligence in Banking 2021: How Banks Use AI. <https://www.businessinsider.com/ai-in-banking-report>
3. Chung, M., Ko, E., Joung, H. and Kim, S.J. (2018), "Chatbot e-service and customer satisfaction regarding luxury brands", Journal of Business Research, Vol. 117, pp. 587-595.