KeAi
CHINESE ROOTS
GLOBAL IMPACT

Journal of Digital Economy

THE IMPACT OF AI AND CHATBOTS ON CUSTOMER RELATIONSHIP MANAGEMENT IN PRIVATE SECTOR BANKS

Ms. A. Geetha[1]
Research Scholar,
SRM Institute of Science and Technology.
e-mail: ga2444@srmist.edu.in

Dr. V. Venkatragavan[2]
Associate Professor & Head,
Department of Accounting and Finance,
SRM Institute of Science and Technology.
e-mail: venkatrv@srmist.edu.in

Abstract

This research explores the transformative impact of Artificial Intelligence (AI) and chatbot technologies in reshaping Customer Relationship Management (CRM) within the private banking sector. As the financial industry increasingly adopts AI-driven solutions to enhance customer experiences, this study delves into the specific impacts, challenges, and opportunities presented by the integration of AI and chatbots in CRM strategies. The study employs a mixed-methods approach, combining qualitative interviews with key stakeholders in private banking institutions and quantitative analysis of customer feedback and interaction data.

Through these methods, it investigates the effectiveness of AI-driven chatbots in handling customer inquiries, personalizing services, and augmenting the overall CRM landscape. Initial findings indicate significant improvements in customer engagement, satisfaction, and operational efficiencies resulting from the implementation of AI-driven chatbots. However, challenges such as customer acceptance, privacy concerns, and the need for seamless integration across various banking platforms are identified as crucial areas for further exploration. By analysing the evolving landscape of CRM in private banking facilitated by AI and chatbots, this research contributes valuable insights to industry practitioners, policymakers, and scholars. Recommendations stemming from this study aim to guide the strategic utilization of AI technologies to optimize customer interactions and strengthen relationships within the private banking sector.

Keywords: AI- chatbots- customer relationship management- private banking -financial services.

I. Introduction

In recent years, the banking sector has undergone significant transformation due to rapid technological advancements. Artificial Intelligence (AI) and chatbots are at the forefront of this revolution, reshaping the way banks interact with customers and manage their operations. As a result, Customer Relationship Management (CRM) systems in the banking sector are becoming

smarter, more efficient, and more customer-centric. In this blog, we will explore how chatbots, AI, and CRM are reshaping the banking sector and the benefits they offer.

The integration of AI technology, specifically chatbots and voice bots, has significantly impacted customer relationship management in private banks. These AI-powered chatbots and voice bots allow customers to easily submit their problems and interact with the bank in a similar manner as they would with a human representative. The AI technology embedded within these chatbots and voice bots enables them to respond to uncertain questions and generate accurate and personalized responses. This has not only improved the overall customer experience but also has been beneficial for the banks themselves. By implementing AI-based chatbot technology, private banks are able to deepen their customer relationships, provide more personalized offers, detect and prevent fraud, streamline processes, and ultimately increase customer satisfaction and loyalty (Nguyen et al., 2021). Moreover, AI and chatbots have also contributed to market differentiation for private banks. By leveraging AI and chatbot technology, private banks are able to stand out in a competitive market by offering innovative and efficient customer service solutions. These AI-powered chatbots and voice bots in private banks have revolutionized customer relationship management by providing fast, cost-effective, and personalized services to customers. The impact of AI and chatbots on customer relationship management in private banks is significant. It has opened up new opportunities for utilizing customer information to benefit both the bank and the customers themselves.

Hence, it can be asserted that the landscape of global financial and banking services has undergone a significant shift, driven by the integration of Machine Learning (ML) and Artificial Intelligence (A.I.). The evolution, prominently shaped by the expansive growth of fintech entities, is visibly transforming the financial sector. A case in point is the recent Q2 report on India's fintech industry, which unveiled a substantial surge in investments, with 32 deals finalized during the same period. This investment trend underscores the evident expansion within the financial services realm. While traditional banking institutions are swiftly adopting computational intelligence technologies such as Chatbots, fintech companies, having embraced A.I. early on, play a pivotal role in driving innovation and making substantial contributions to financial intelligence (Das et al., 2015).

The impact of AI and Chatbots on Customer Relationship Management (CRM) in the banking sector:

Improved Efficiency and Cost Savings: AI and Chatbots automate routine tasks, such as handling customer inquiries and transaction requests, leading to operational efficiency and cost reduction.

Enhanced Customer Experience:

AI-driven personalization and Chatbot interactions provide customers with more convenient and tailored services, ultimately improving their overall experience.

Real-Time Data Analysis:

Artificial intelligence has the capability to swiftly analyze extensive data sets in real-time, enabling banks to base their decisions on data insights for tailored customer engagements and risk evaluation.

24/7 Support:

Chatbots offer 24/7 customer assistance, handling inquiries and issues from clients around the clock, a feature highly beneficial in the realm of global banking.

Personalized Recommendations:

AI algorithms can provide highly personalized financial advice, investment recommendations, and tailored solutions to meet individual customer needs.

Client Onboarding:

Chatbots streamline the client onboarding process, making it faster, more convenient, and paperless in many cases.

Improved Multichannel Engagement:

AI and Chatbots facilitate seamless interactions across various communication channels, ensuring that clients can engage with their bank on the platforms they prefer.

Maintaining Human Touch:

Despite automation, there's a need to balance technology with human advisors who can handle complex financial decisions and provide emotional support.

Data Privacy and Security:

Protecting customer data is a top priority, with banks implementing stringent measures to ensure data privacy and security.

Regulatory Compliance:

Banks must adhere to regulatory standards and industry-specific compliance when implementing AI and Chatbots in customer interactions.

Client Trust and Transparency:

Maintaining trust and transparency is crucial, and banks need to ensure that clients understand how AI is being used and the decision-making process.

Measuring Client Satisfaction and Loyalty:

Evaluating the impact of AI and Chatbots on client satisfaction and loyalty is essential for banks to assess the effectiveness of their CRM strategies.

Adaptation to Future Trends:

The banking sector needs to continually adapt to New advancements and technologies in the realm of AI and chatbots to stay competitive and meet changing customer expectations.

Ethical Considerations:

Banks must confront ethical issues associated with AI and chatbots, such as bias in algorithms, fair treatment, and equitable access to services.

Employee Training and Skills:

As AI and Chatbots become integral to CRM, employees need training and skill development to work alongside these technologies effectively.

These notes provide an overview of how AI and Chatbots are impacting CRM in the banking sector, showcasing the benefits, challenges, and considerations for implementing these technologies.

II. Objectives of the Study:

- To Analyse How AI and chatbots are used in private banks to help customers and manage relationships.
- To Identify How customers feel about these AI tools in banking, focusing on what they like, dislike, and trust about them.
- To Check if AI and chatbots actually make things better for customers in private banks, like how fast they solve issues and if they personalize services.
- To Compare how well AI works versus traditional customer service in private banks to see which is more helpful and satisfying for customers.

III. Scope of the Study:

The scope of the study on the impact of AI and Chatbots on Customer Relationship Management (CRM) in private banks encompasses a comprehensive examination of the multifaceted influence that artificial intelligence and chatbot technologies have on the customer interactions and relationship-building processes within the banking sector.

IV. Review of Literature:

Over the past few years, the extensive integration of artificial intelligence and chatbots has transformed numerous industries, notably the private banking sector. These technological advancements have had a significant impact on customer relationship management within private banks. Research studies have found that the implementation of AI and chatbots in the banking sector has improved customer services and made banks a more secure place **(Joshi & Aslekar, 2022).** One study focused on the effectiveness and usage of artificial intelligence in the banking sector, highlighting areas where it is applicable.

The study identified multiple touchpoints where AI and chatbots can be utilized in the private banking sector for customer relationship management. These touchpoints include customer engagement and communication, personalized recommendations and financial planning, automated onboarding processes, and fraud detection and security measures.

AI and chatbots have demonstrated promise in various domains, including market distinction, efficiency enhancements, and heightened service standards intended to enhance customer

ISSN:2773-0670
VOL 3 (2) 2024

contentment and involvement. Incorporating chatbots into the realm of Internet banking presents retail banks with prospects to capitalize on these facets **(Lappeman et al., 2022).** Moreover, the integration of AI within chatbots enables banking patrons to engage with banks naturally, employing gestures, text, and speech, which is particularly beneficial for individuals with restricted mobility or disabilities **(Yuspin et al., 2022).**

V. DATA AND METHODOLOGIES:

The information collected comprises both Primary and Secondary data, falling under the category of qualitative data. This data was extensively analyzed to formulate conclusions and recommendations. Primary data was obtained through a survey focused on artificial intelligence within the banking and financial sectors. The survey involved the creation of a questionnaire and the implementation of random sampling techniques. Secondary data was gathered from various online sources such as websites, e-magazines, research papers, e-books, and newspapers.

In this study, data were collected from a sample size of 228 respondents to investigate various aspects related to the research objectives. The research employed a combination of quantitative research methods to analyze the gathered information. The chi-square test was utilized to examine the association between categorical variables, providing insights into potential relationships and dependencies within the dataset. Additionally, the Cronbach's alpha test was applied to assess the internal consistency and reliability of the survey instrument, ensuring that the collected data accurately reflected the underlying constructs being measured. Furthermore, factor analysis was utilized to unveil latent factors and patterns within the dataset, providing a deeper comprehension of the connections among the variables. These robust statistical techniques were selected to guarantee a meticulous and thorough examination of the data, enhancing the trustworthiness and accuracy of the study's conclusions. The study included a diverse sample of 228 respondents, comprising 119 males and 109 females. The majority of respondents fell within the age group of 25-34 years. The participants predominantly reported frequent usage of private banking services.

Output Table: 5.1

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.773
Bartlett's Test of Sphericity	Approx. Chi-Square	1976.392
	df	36
	Sig.	<.001

The KMO test Output Table:5.1 shows that there is a 0.773 percentage of sampling adequacy in the model and significance value <0.001 shows that there is a high level of significance among the variables in this model.

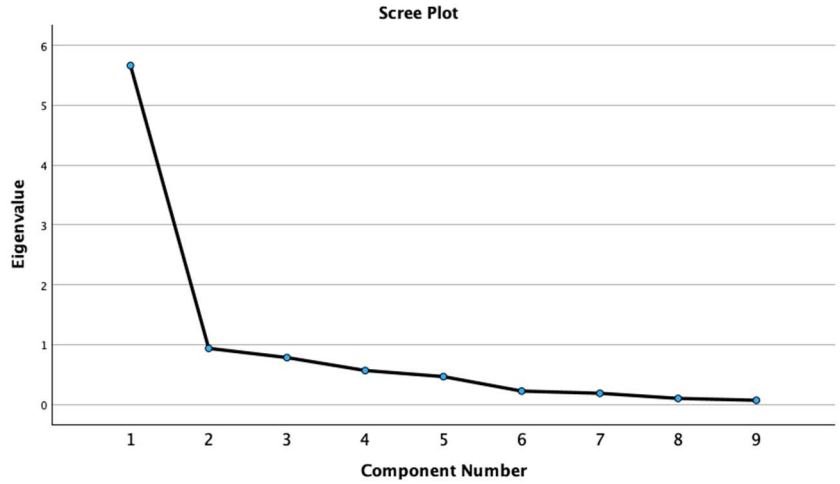
Output Table: 5.2

Total Variance Explained

		Initial Eigen values[a]			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Raw	1	10.780	64.443	64.443	10.780	64.443	64.443	7.028	42.009	42.009
	2	1.886	11.277	75.720	1.886	11.277	75.720	5.639	33.711	75.720
	3	1.198	7.161	82.881						
	4	1.104	6.599	89.480						
	5	.698	4.171	93.651						
	6	.410	2.452	96.103						
	7	.345	2.065	98.168						
	8	.188	1.122	99.290						
	9	.119	.710	100.000						

The table provided above, labeled as Table 5.2, illustrates four discernible factors identified through the analysis, accompanied by their respective Eigen values and the percentage of variance attributable to each factor. The cumulative variance of each factor, in addition to the variance explained by previous factors, is also presented. When the Eigen value surpasses 1, it indicates the extraction of four factors from the collected data. Factors with Eigen values exceeding 1 are retained for analysis, while others are omitted. The analysis yields four factors, collectively explaining 75.720% of the total variance. The primary extracted factor elucidates 42.009% of the variance across all nine variables, followed by the second factor explaining 33.711% of the

variance, with similar distributions for the subsequent factors.



The scree plot shows the graphical representations of the factors which are having eigen values greater than 1. With the help of the graph, it can be identifying that there are four factors loaded with the eigen value of greater than 1.

Cronbach's Alpha

We can see that SPSS has excluded five of our 228 cases because both of those cases have at least one missing value.

Case Processing Summary

		N	%
Cases	Valid	223	97.8
	Excluded[a]	5	2.2
	Total	228	100.0

a. Listwise deletion based on all variables in the procedure.

The Cronbach's Alpha value displayed in the Reliability Statistics table is .931 in SPSS, denoting an exceptionally high level of consistency among the items on the scale.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.931	.932	9

Cronbach's alpha, which varies between 0 and 1, reflects the degree of correlation among the items within your scale. Increased values suggest more robust relationships among the scale items. Typically, a Cronbach's alpha equal to or exceeding 0.7 is generally deemed acceptable.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q1	22.30	81.966	.657	.715	.928
Q2	22.24	72.777	.781	.807	.921
Q3	22.35	71.978	.916	.928	.911
Q4	22.27	71.450	.867	.901	.914
Q5	22.13	80.642	.579	.667	.932
Q6	22.22	79.962	.779	.717	.922
Q7	22.13	75.297	.811	.812	.918
Q8	22.35	77.903	.690	.734	.926
Q9	22.38	75.048	.670	.754	.929

An item from a set of scale items can increase the value of Cronbach's alpha. The value for item 5 (.932) is slightly higher that the value of Cronbach's alpha (.931) in the Reliability Statistics table.

Findings:

The findings derived from the data and methodologies employed in this study indicate a strong foundation for understanding the impact of AI and chatbots on customer relationship management in private banking. The rigorous statistical analysis validates the relevance and reliability of the identified factors, providing valuable insights for both industry practitioners and policymakers. The high level of sampling adequacy and the explained variance emphasize the credibility of the study's conclusions and recommendations.

Conclusion:

The integration of AI and Chatbots in private banking has significantly transformed Customer Relationship Management, leading to improved efficiency, enhanced customer experiences, and substantial cost savings. The positive impacts on client engagement and satisfaction are evident, with AI-driven technologies offering personalized recommendations and round-the-clock support. However, challenges such as data privacy, regulatory compliance, and the need for a human touch must be addressed for sustained success.

This study underscores the need for a strategic approach to AI implementation, including ongoing employee training, transparent communication, and continuous adaptation to emerging trends. As the banking sector navigates the evolving landscape of AI and Chatbots, proactive measures in addressing challenges and maximizing opportunities will be crucial for maintaining a competitive edge and delivering superior customer service in the future.

References:

Joshi, A., & Aslekar, A. (2022, November 30). Business Intelligence for Reducing NPA in Indian Banking Sector. https://scite.ai/reports/10.18137/cardiometry.2022.24.933939

Lappeman, J., Marlie, S., Johnson, T., & Poggenpoel, S. (2022, April 25). Trust and digital privacy: willingness to disclose personal information to banking chatbot services. https://scite.ai/reports/10.1057/s41264-022-00154-z

Yuspin, W., Wardiono, K., Budiono, A., & Gulyamov, S. (2022, December 5). The law alteration on artificial intelligence in reducing Islamic bank's profit and loss sharing risk. https://scite.ai/reports/10.22219/ljih.v30i2.23051

Praveen Kumar Donepudi, Engineering International, Volume 5, No 2 (2017) ISSN 2409-3629 https://www.researchgate.net/publication/346323685_Machine_ Learning_and_Artificial_Intelligence_in_Banking.

A. Geetha , IJCRT | Volume 9, Issue 9 September 2021 | ISSN: 2320-2882, A Study On Artificial Intelligence (AI) In Banking And Financial Services. https://www.ijcrt.org/papers/IJCRTG020019.

Impact Of Artificial Intelligence Towards Customer Relationship Management W.R.T Private Commercial Banks At Bangalore. (2023). Journal of Namibian Studies : History Politics Culture, 33, 2900-2909. https://doi.org/10.59670/jns.v33i.4733