

A Study on Efficiency of Artificial Intelligence Usage In Banking Sector (Special Reference in Coimbatore City)

G. DEEPTHI SREE¹, Dr. A. VINI INFANTA²

¹UG Student, Department of B.com with Professional Accounting

²Assistant Professor, Department of B.com with Professional Accounting

^{1,2}Sri Ramakrishna College of Arts and Science, Coimbatore-641006

Abstract- *This study focuses on Artificial intelligence in Banking sector. The banking sector is among the many that artificial intelligence (AI) is transforming. The workload of bankers is reduced and procedures are transformed by AI, which enables machines to emulate human cognitive functions. AI is currently utilized to improve personalized banking services and products by acting as a virtual assistant. This article looks at how artificial intelligence (AI) is changing and assisting bankers, Customers, and the banking industry as a whole, which eventually helps everyone. Banking can increase productivity and improve client experiences by implementing AI. Putting a high priority on data quality, encouraging teamwork, and attending to ethical issues may promote innovation and serve businesses and clients.*

Keywords- Artificial intelligence, Banking, Customers, Virtual Assistance.

I. INTRODUCTION

Artificial intelligence is commonly referred to as AI. Where AI is considered as a powerful technology for change across a variety of industries. Where “AI is defined as the ability of a machine to perform cognitive functions we associate with human minds, such as perceiving, reasoning, learning, interacting with environment, problem solving, and even exercising creativity”. The one sector that is experiencing a great revolution with AI is Banking. In simple AI is a technology that allows machines to imitate human intelligence and now it is a part of the banking sectors. Where AI helps to reduce the work load of the bankers. AI is a virtual assistant used in banking sectors Where AI is a reality that will shape the way banks operate and serve their customers. Banking products and services using AI may increase personalized and customization of the customers. The purpose of this article is to comprehensively explore the various ways in which AI is reshaping and helping the bankers, customers and banking sectors.

II. REVIEW OF LITERATURE

Geetha. A (2021) “A study on artificial intelligence (AI) in banking and financial services "she has said this article is to oversee the application of AI methods in banks and to see the responses from the clients or customers. She has given the result as the customer has suggested to develop innovative ideas preparing to improve the procedures of AI in workplace.

Suma S.R & Anupama. S (2021) “AI and its application in Indian Commercial Banks” They have said that AI has increased tremendous opportunities and possibilities and also helped in the growth and destiny of organizations in modern times. They have also said AI helps in enhancing the efficiency and effectiveness which has direct effect on the profitability of organization.

Kaur. K. Sahdev. L. Sharma. M. Siddiqui. L (2020) “Application of Artificial Intelligence in banking: A study based on SBI-SIA virtual assistant” In this article they have explained about the influence and how AI is changing the face of modern-day banks. They also said about the advancement in AI and also the importance of human touch in works. The result says that AI is valuable in the banking sector.

Adeian Lee (2017) “Banking on artificial intelligence” he had a strongly determined that the most prominent forms of AI are within the banking industry. He also says AI helps in customer service, real time fraud prevention and risk management.

III. STATEMENT OF PROBLEM

There is a barter system in India at that time it was very difficult to trade and transact. After that period paper notes came into existence which was being used for transactions and it was easy and gave proper value in case of

banking transactions and opening, they need to visit be bank directly. After the creations of AI, it became easier and more comfortable. This study is to analyze the AI performance in banking and to find the customers thoughts towards it and also to know the changes before and after AI with bankers and customers.

IV. OBJECTIVES OF THE STUDY

- To analyze the part of Artificial Intelligence in banking sectors.
- To identify the changes in banking sector after the implementation of Artificial Intelligence.
- To know the customers thought towards AI in banking.

V. RESEARCH METHODOLOGY

Research Methodology is the overall strategy or approach used to select and gather analyzable data or information about a research or topic. This study's research methodology gives readers the chance and ability to assess this study's validity and dependability.

RESEARCH DESIGN

This study involves descriptive research method as research design.

SOURCES OF DATA

❖ Primary data:

The original data is collected from the respondents and data was collected through questionnaire via google forms among youngster.

❖ Secondary data:

This research includes information from websites and journals in the form of review of literature with references.

❖ Questionnaire:

The questionnaire is shared via Google form among young generation. Data was collected among 130 respondents.

TOOLS USED:

- Simple percentage analysis
- Chi-square
- Anova

LIMITATIONS OF THE STUDY:

- This study is limited by sample size of 130 response
- The questionnaire was collected through google forms only, so data couldn't be gathered from non-mobile users.
- The questionnaire for this study is in English only so some people may face difficulties in understanding the questions due to limited proficiency in English language.

ANALYSIS OF THE STUDY:

TABLE 1.1

PERCENTAGE ANALYSIS				
S. NO	PARTICULARS	VARIABLES	RESPONDANCE	PERCENTAGE
1	GENDER	MALE	70	56
2	AGE	21-35	50	40
3	MARTIAL STATUS	UNMARRIED	82	65.6
4	EDUCATION QUALIFICATION	UG	70	56
5	FAMILY ANNUAL INCOME	ABOVE 4 LAKH	35	28
6	DO YOU HAVE A BANK ACCOUNT	Yes	106	84.8

INTERPRETATION:

From the social economic profile of 130 respondents show that 56% of the respondents are Male and 44% of them are Female, under age category 28% of them are below 20 and then 40% of them are 20-35, 28.8% of them are 35 -50 and 3% of them are Above 50. Under the category of Marital Status 65.6% of them were Unmarried and 34.4% of them are Married. Under the category of Education Qualification 16% of them are School level , 10.4% of them are Diploma, 56% of them are Undergraduate, 16.8% of them Postgraduate and 0.8% of them are Other. Under the category of Family Annual Income 24% of them are below 1Lakhs, 26.4 % of them are earning from 2Lakh to 3Lakh, 21.6% of them earn from 3Lakh to 4Lakh, and 28% of them have a yearly income of above 4Lakhs. Under the question Do you have a bank account 84 % of them have said yes and 15.2% of them have said no.

CHI-SQUARE:

TABLE 2.1

CHI SQUARE:

TABLE 2.1
Table showing relationship between Education Qualification / Impression on Banking Sector after the implementing AI

Count		what is your impression on Banking Sector after the implementing AI				Total
		improved process & functioning	neutral	no changes		
Education Qualification	Diploma	4	9	1	14	
	Others	0	1	0	1	
	Post Graduate	9	9	3	21	
	School level	7	13	0	20	
	Under graduate	31	39	4	74	
Total		51	71	8	130	

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.324 ^a	8	.611
Likelihood Ratio	7.366	8	.498
N of Valid Cases	130		

a. 7 cells (46.7%) have expected count less than 5. The minimum expected count is .06.

INTERPRETATION:

The observed value is 0.611 and it is greater than the P Value 0.05. Hence the Null hypothesis is rejected and the alternative hypothesis is accepted. So, there is significant relationship between Education Qualification and what is your impression on Banking Sector is after the implementing AI.

TABLE 2.2

Table showing relationship between Age & what are the challenges faced by you in using of AI in Banking Crosstabulation

Count		what are the challenges faced by you in using of AI in Banking				Total
		complicative process	lack of security	network issues	no	
Age	21-35	18	7	29	0	54
	35-50	14	11	11	1	37
	Above 50	2	1	1	0	4
	Below 20	7	6	22	0	35
Total		41	25	63	1	130

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.253 ^a	9	.152
Likelihood Ratio	13.607	9	.137
N of Valid Cases	130		

a. 7 cells (43.8%) have expected count less than 5. The minimum expected count is .03.

INTERPRETATION:

The observed value is 0.152 and it is greater than the P Value 0.05. Hence the Null hypothesis is rejected and the alternative hypothesis is accepted. So, there is significant

relationship between Age and what are the challenges faced by you in using of AI in Banking.

ANOVA:

TABLE 3.1

Elements (Questions)	Before AI	After AI
Customer service	68	69
Privacy	54	86
Accessibility	66	72
Adaptability	48	90

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Column 1	4	236	59	92
Column 2	4	317	79.25	106.25

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	820.125	1	820.125	8.273644	0.02819	5.987378
Within Groups	594.75	6	99.125			
Total	1414.875	7				

INTERPRETATION:

The P-Value is 0.02819. Which is less than table value 0.05. Hence the null hypothesis is rejected. So, there is a significant relationship between the factors.

TABLE 3.2

Elements (Questions)	Highly satisfied	Satisfied	Neutral	Dissatisfied
Chat bot	80	26	22	2
Privacy policies	28	68	30	4
Fraud Deduction	42	48	38	2
Analyzing Market trends	44	38	42	6

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Highly satisfied	4	194	48.5	491.6666667
Satisfied	4	180	45	316
Neutral	4	132	33	78.66666667
Dissatisfied	4	14	3.5	3.666666667

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	5014	3	1671.333	7.511610487	0.004323	3.490295
Within Groups	2670	12	222.5			
Total	7684	15				

INTERPRETATION:

The P-Value is 0.004323. Which is less than table value 0.05. Hence the null hypothesis is rejected. So, there is a significant relationship between the factors.

VI. FINDINGS OF THE STUDY

- The findings suggest that AI implementation in the banking sector has led to improvements in various aspects such as customer service, privacy, and adaptability. However, challenges such as complicating processes and security concerns remain prevalent, especially among younger demographics. Despite challenges, customer satisfaction with AI applications in banking is notable, with chatbots emerging as particularly effective tools.
- An ANOVA analysis was conducted to understand the impact of AI on different aspects of banking. Results suggest that there were significant differences in customer perceptions of customer service, privacy, accessibility, and adaptability before and after AI implementation. Privacy and adaptability showed substantial improvements post-AI implementation, as indicated by increased average scores.
- The study analysed respondents' impressions on the banking sector after the implementation of AI. Results indicate that a majority of respondents across different education qualifications perceived an improvement in the banking sector post-AI implementation. However, there were also notable proportions of respondents who expressed neutral or no change in their perception. Respondents reported various challenges faced in using AI in banking, including complicating processes, lack of security, and network issues.
- Customers were surveyed regarding their satisfaction with various AI applications in banking. The ANOVA results reveal significant differences in satisfaction levels across different AI applications. Chatbots received the highest satisfaction ratings, followed by fraud detection and analyzing market trends.

VII. SUGGESSTION

This study on the efficiency of artificial intelligence (AI) usage in the banking sector, several actionable suggestions emerge to optimize AI integration and utilization in Coimbatore City's banking institutions. Firstly, there should be sustained investment in AI research and development to continuously improve existing applications and develop new ones aligned with evolving industry needs. Secondly, comprehensive training programs should be implemented to equip banking staff with the necessary skills to effectively leverage AI tools and platforms, including data analytics and customer interaction. Addressing security concerns is paramount, requiring the adoption of robust cybersecurity measures and advanced encryption techniques to safeguard sensitive data and transactions. Streamlining

processes to minimize complexities associated with AI implementation, along with focusing on customization and personalization to offer tailored banking experiences, should be prioritized. Enhanced communication channels between banks and customers regarding AI technologies' benefits, limitations, and security measures are essential for building trust and alleviating concerns. Continuous monitoring and evaluation of AI applications are necessary to identify issues and gather feedback for iterative improvements. Finally, active engagement in ethical and regulatory discussions surrounding AI usage will help establish clear guidelines to govern responsible deployment while safeguarding consumer rights and privacy. Implementing these suggestions will enable Coimbatore City's banking sector to optimize AI utilization, enhancing efficiency, customer satisfaction, and overall competitiveness.

VIII. CONCLUSION

In conclusion, this study delves into the efficiency of Artificial Intelligence (AI) employment in the banking sector, with a special focus on Coimbatore City. AI has emerged as a transformative force in banking, enabling institutions to enhance customer service, privacy, and adaptability. While challenges such as process complexities and security concerns persist, customer satisfaction with AI applications, particularly chatbots, is noteworthy. The findings underscore the significant improvements in customer service, privacy, accessibility, and adaptability post-AI implementation, as evidenced by ANOVA analysis and respondent perceptions. To optimize AI integration and utilization, sustained investment in research and development, comprehensive staff training, robust cybersecurity measures, process streamlining, and enhanced communication channels are imperative. Furthermore, active engagement in ethical and regulatory discussions is crucial for responsible AI deployment. By implementing these recommendations, Coimbatore City's banking sector can harness the full potential of AI, enhancing efficiency, customer satisfaction, and competitiveness in the digital era.

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