

## A Study On Customer Satisfaction In Using Banking Services Through Artificial Intelligence (Ai) In Nagercoil Area

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### ABSTRACT

Banks are serving their customers through multiple platforms. Artificial Intelligence have dominated all the new technologies in the past few years. This solved many of the problems that Banks face in today's digital world. They can take good information quickly and easily from Bank's database and convert it into meaningful benefits for themselves and their customers. It is the future of banking as it brings the power of advanced data analytics to combat fraudulent transactions and improve compliance. Features such as AI bots, digital payment advisers and biometric fraud detection mechanisms lead to higher quality of services to a wider customer base. All this translates to increased revenue, reduced costs and boost in profits. The primary data needed for this study have been collected from 80 respondents in Nagercoil Area. It was collected with the help of questionnaire schedule and selected stratified random sampling method.

**Key words:** Banks, Customers, Artificial Intelligence.

### INTRODUCTION

Banking services have been expanded to every corner of the country. Many people came into banking, thousands of Bank branches were opened across the length and breadth of the country and millions of job opportunities were created. Banks are able to know about customer usage patterns and use those insights to develop more precise and customer centric applications, products and services. This sector is showing a lot of progress in AI kind of usage models in both front end and back end. It is the processes which are getting transformed very quickly with newer technologies like process automation which gets done a one-hour work in a minute.

Moreover, AI empowers banks to efficiently handle massive volumes of data, extracting valuable insights at unprecedented speeds. AI is used in banking to enhance efficiency, security, and customer experiences. It automates routine tasks like data entry and fraud detection, reducing operational costs. AI-driven chatbots provide 24/7 customer support. Machine learning algorithms analyse customer data to personalize services and detect unusual transactions, improving security.

### REVIEW OF LITERATURE

**Ana Fernandez (2019)** in her study "Artificial Intelligence (AI) in financial Services"- the author describes that the investors are benefited by the usage of AI application in finance sector as it

still undergoes with risks and limitations involved. So, by having use of the AI tools as a process involved in making out decisions and in major activities offers a fair steadiness with the risk and rewards.

**Dr. Navleen Kaur, Dr. Monika Sharma, Laraibe Siddiqui, and Supriya Lamba Sahdev. (2020)** in their study “Artificial intelligence's impact on the banking sector” it is concluded that transforming the look of contemporary banks are discussed in Banking 4.0. The primary focus of this essay is the application of AI in the banking sector, specifically the revolutionary changes in banking and their effects on the human labour. Since dealing with automation requires new technologies and expertise.

**Geetha (2021)** in her study “A study on AI in banking and financial services”. This article has the secondary sources of data to identify the information availed in the banking and financial services in Chennai to get a look on the implementation of AI methodology in banks as well as from customers and it resulted as the satisfaction is found is some people only. The authors suggested in improving the procedures with innovative services at the workplace for customer friendly.

**Bashang and Puttanna (2023)** in their study “The Role of Artificial Intelligence in Digital Marketing: A Review”. This article presents an extensive analysis of prior research that highlights the crucial significance of artificial intelligence (AI) in the field of digital marketing. The research seeks to emphasise the revolutionary capacity of AI in many industries, including in marketing, by empowering organisations to analyse extensive quantities of data, detect trends, and make well-informed judgements. The text explores many uses of AI in digital marketing, including personalised content creation, chatbots for customer assistance, predictive analytics for targeting and segmentation, and recommendation engines for generating product suggestions. Moreover, the study examines the benefits and possible disadvantages of incorporating artificial intelligence (AI) into digital marketing strategies, offering vital knowledge for firms aiming to utilise AI technology to maintain competitiveness in the digital realm.

## **OBJECTIVES OF THE STUDY**

1. To analyse the impact of AI technologies in customer satisfaction
2. To identify AI-based features in banking services.
3. To understand customer perceptions of AI in banking.

## **METHODOLOGY**

Primary and secondary data were collected from different sources and used for analysis. The secondary data was collected from the books, journals and magazines. Primary data was collected through a well-structured interview schedule developed by the researcher in consultation with the experts in the field.

## **TOOLS OF ANALYSIS**

Statistical methods are the mechanical process specially designed to facilitate the consideration and analysis of the large body of quantitative data. The aim of statistical methods is to interpret the completed data for the purpose of analysis. There different types of statistical tools and

techniques for analysing the collected data.

### Percentage

Percentage in a statistical tool used by the researchers. The demographic factors of respondent are analysed with the help of percentage.

### Garrett's ranking

Garrett's ranking is used to analyse the problem faced by customer the SBI. The percentile position for the ranks is obtained using the following formula ranks is obtained using the following formula.

$$\text{Persent Position} = \frac{100(R_j - 0.5)}{N_j}$$

### Chi - Square test

Chi - square test has been applied to analyse the relationship profile variables and their customer satisfaction

$$X^2 = \frac{\sum(O - E)^2}{E}$$

### Weighted Average Method

Weighted Average is a calculation that takes in to account those varying degrees of importance on the number in a data section.

$$\text{Weighted Average} = \frac{\text{Sum of weighted terms}}{\text{Total number of terms}}$$

## Results and Discussions

### DEMOGRAPHIC PROFILE OF CUSTOMER

DEMOGRAPHIC VARIABLES	CATEGORY	NO OF CUSTOMER	PERCENTAGE
GENDER	Male	35	43.75
	Female	45	56.25
	Total	80	100
AGE	Below 20	15	18.75
	21-25	10	12.5
	26-30	30	37.5
	31-40	15	18.75
	Above 40	10	12.5
	Total	80	100
MONTHLY INCOME	Below 10,000	10	12.5
	Rs.10,000-20,000	14	17.5
	Rs.20,000-30,000	22	27.5
	Rs.30,000-40000	18	22.5

	Above Rs.40,000	16	20
	Total	80	100
<b>OCCUPATION</b>	Business men	30	37.5
	Private employee	15	18.75
	Government employee	25	31.25
	Wage worker	10	12.5
	Total	80	100
<b>EDUCATION QUALIFICATION</b>	SSLC equivalent	10	12.5
	HSC	15	18.75
	Under graduate	20	25
	Post graduate	25	31.25
	Diploma	10	12.5
	Total	80	100

### IMPACTS OF CUSTOMER SATISFACTION IN BANKING SERVICE

Impact customer satisfaction of the respondents given below,

#### IMPACT OF CUSTOMER SATISFACTION

Sl. No	Impact of customer satisfaction	No. of respondent	Percentage
1	Personalized financial reconditions	13	16.25
2	Removal of mobile banking apps	26	32.5
3	Elimination of fraud detection system	28	35
4	Lack of data security measures	13	16.25
	Total	80	100

#### Sources: primary data

The above table shows that 35 percent of the customer impact is attributed to the elimination of fraud detection systems. Additionally, 32.5 percent of the respondents report the removal of mobile banking apps, 16.25 percent mention personalized financial recommendations, and another 16.25 percent highlight a lack of data security measures.

### AI BASED FEATURES IN BANKING SERVICE

The most valued banking service given below,

#### AI BASED FEATURES IN BANKING SERVICE

Sl. No	Features	No. of respondent	Percentage
1	Predictive analytics for personalized offers	35	43.75

2	Limited transaction monitoring	16	20
3	Reduction in customer support availability	18	22.5
4	Elimination of financial tools	11	13.75
	Total	80	100

**Source: primary data**

The above table shows that 43.75 percent of customers state that AI-based features in banking services include predictive analytics for personalized offers. Additionally, 22.5 percent of the respondents mention a reduction in customer support availability, 20 percent highlight limited transaction monitoring, and 13.75 percent refer to the elimination of financial tools.

**SATISFACTION ABOUT BANKING EXPERIENCES**

AI contribute to secure and satisfying banking experiences of the respondents are given below,

**SATISFACTION ABOUT BANKING EXPERIENCE**

Sl. No	Satisfaction of Banking experiences	No. Of respondent	Percentage
1	Predicting and preventing fraudulent transaction	18	22.5
2	Removing security authentication procedure	17	21.25
3	Disabling real-time transaction monitoring	22	27.5
4	Exposing user data, a third parties	23	28.75
	Total	80	100

**Source:****Primary data**

The above tables shows that 28.75 per cent of the customer satisfied with Exposing user data a third parties, 27.5 per cent of the customer satisfied with disabling real-time transaction monitoring, 22.5 per cent of the customer satisfied with prediction and preventing fraudulent transaction and 21.25 per cent of the customer satisfied with Removing security authentication procedure.

**H1: There is a significant relationship between age and monthly income of the respondents****CHI – SQUARE TEST**

Factor	Calculated value $\chi^2$	Table value	DF	Remarks	Results
Age and monthly income	28.01	26.296	16	28% of the Significance	<b>Rejected</b>

It is observed from the above table that the calculated chi-square value is more than the table value at 28.01% level of significance. Hence, the hypothesis is Rejected. It is concluded that, there is no relationship between age and monthly income.

**H2: There is a significant relationship between security of banking services and impact of customer satisfaction.**

#### CHI- SQUARE TEST

Factor	Calculated value $\chi^2$	Table value	DF	Remark	Result
banking services and impact of customer satisfaction	26.2489	16.919	9	5% level of significance	<b>Rejected</b>

It is observed from the above table that the calculated chi- square value is more than the table value at 26.2489 % of significance. Hence the hypothesis is rejected. It is concluded that, there is a relationship between security of banking services and impact of customer satisfaction

#### RESULT OF GARRETT RANKING

Sl.NO	Advantage of AI in banking sectors	Total Score	Mean score	Rank
1	Improved customer experience	7026	87.82	<b>III</b>
2	Faster query resolution	7079	88.48	<b>I</b>
3	Personalized support	6954	86.92	<b>V</b>
4	Increased convinced	6921	86.51	<b>VI</b>
5	Enhance security	6689	83.61	<b>VII</b>
6	Enhance competitiveness	7044	88.05	<b>II</b>
7	Multilingual support	7007	87.58	<b>IV</b>

Source: Computed data

The above table highlights the advantages of artificial intelligence in banking services. According to the analysis, respondents rank "Faster query resolution" first, followed by "Enhancing competitiveness" in second place. "Improving customer experience" is ranked third, while the fourth rank is assigned to "Multilingual support." "Personalized support" takes the fifth rank, "Increased convenience" is ranked sixth, and "Enhanced security" is placed seventh.

#### Statistical tools applied for analysis of weighted average method

To analyse rate of AI, enhance customer satisfaction in banking services the weighted average method is used. It is clearly stated in the following table.

Opinion	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total	Mean score	Rank
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By reducing transaction speed	35	28	21	14	7	105	1.31	VI
By providing 24/7 customer support through chat bots	20	32	27	24	18	121	1.51	V
By increasing manual paper work	35	32	57	40	25	189	2.36	III
By limiting service availability	125	40	45	20	20	250	3.12	I
Quick query resolution	100	60	30	16	30	236	2.95	II
Proactive support to customer	50	32	27	20	25	15.4	1.98	IV
Real time transaction updates	25	24	27	40	20	136	1.7	VII

**Source: Computed data**

The above table reveals the AI enhance customer satisfaction in banking services. According to the analysis, respondents ranked “By limiting service availability” first. This is followed by “Quick query resolution,” which takes the second rank. Respondents ranked “By increasing manual paperwork” third, while “Proactive support to customers” is ranked fourth. The fifth rank is assigned to “Providing 24/7 customer support through chatbots,” the sixth to “Reducing transaction speed,” and the seventh to “Real-time transaction updates.”

## FINDINGS

- The majority 56.25 per cent of the respondents were female.
- It is found that the majority 37.5 per cent of the respondents are in the age group of 26 to 30 years.
- The majority 27.5 per cent of the respondent’s monthly income is Rs.20,000-Rs.30,000.
- Most of 37.5 per cent of the customer are business men.

- Majority 31.5 percent of the respondents are qualified with post graduate degree.
- The majority 35 per cent of the customer impact is attributed to the elimination of fraud detection systems.
- Majority 43.75 per cent, of customers state that AI-based features in banking services include predictive analytics for personalized offers.
- The majority 28.75 per cent of the customer satisfied with Exposing user data a third parties.

### **SUGGESTION**

- AI- powered predictive analytics can help financial institutions forecast market trends, identify potential risks, and make informed decisions.
- Natural language processing can be used to analyze and understand customer feedback, sentiment and preferences.
- Machine learning algorithms can be used to develop predictive models, identify patterns and make recommendations.
- Robotic process Automation can be used to automate repetitive tasks, improve efficiency, and reduce errors.

### **CONCLUSION**

AI is transforming the financial services industry by providing innovative solutions to improve efficiency, enhance customer experience, and drive growth. As the essential for financial institutions to stay ahead of the curve and adopt AI- powered solutions to remain competitive. AI has also help bank to reduce fraud and to analysis the credit risk but still there are many challenges in front of AI. Challenge of acquiring huge amount of data of every customer of bank. Bank has to spend money on the production and storage of data. But still AI has bright future in banking sector as time will move forward there will be improvement in AI.

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