

A Study On Customer Awareness Towards Artificial Intelligence (Ai) Technology in Banking Services

R. Shanmuga Priya¹, Dr.N. Santhanavadi², Dr.B. Jagadeeswaran³

¹Ph. D (Part Time) Research Scholar,

²Assistant professor & Research supervisor, PG and Research Department of Commerce

³Head&AssistantProfessor, PG and Research Department of Commerce

ABSTRACT

Artificial intelligence has gained wide ranging importance in all the fields including business, banking, finance, health care etc. Customer towards AI in banking services is increasing with many banks adopting AI-powered technologies to enhance customer experience. The objective of the study is to study the awareness of the AI used in banks. To assess the challenges faced by customers due to use of AI in banking. For this study the primary data is collected and analyzed through structured questionnaire and secondary data is collected through websites and related articles. The findings of the study in this fields of awareness, usage and satisfaction the customers using ATM services is found to be more. The study also finds out the most customer perceive that threat of security is the main factors where the customer hesitates to use artificial intelligence technology.

Key words: Artificial intelligence, customer awareness, challenges, benefits, services.

1. INTRODUCTION

Artificial Intelligence in Banking refers to the application of advanced technologies, particularly machine learning and data analytics, to automate and enhance various banking processes. Artificial intelligence (AI) is revolutionizing the banking industry by enhancing various banking processes. AI is used in banking for intelligent automation, data-driven insights, enhanced customer experiences, risk management, and efficiency and cost reduction. AI-powered systems can perform tasks traditionally carried out by humans, such as data analysis, decision-making, and customer service. AI can also process massive amounts of banking data to extract valuable insights, enabling institutions to make informed decisions and enhance their services. AI-driven chatbots and virtual assistants can provide customers with instant, personalized assistance. Additionally, AI helps banks assess and manage risks by analyzing customer creditworthiness, detecting fraudulent transactions, and predicting market fluctuations. Moreover, AI can streamline operations by automating routine tasks, minimizing errors, and reducing operational costs, ultimately leading to improved profitability.

2. BENEFITS OF ARTIFICIAL INTELLIGENCE IN BANKING

Machine learning helps to analyze the data automatically and to analyze the model building. It has some benefits in banking sector. They are as follows:

AI helps to understand the expenditure pattern of the customer in banks: The banks can have different investment plans and customers budgeting plans. AI helps to keep a track on the transactional and other data sources. It also helps in knowing the customer behaviour and preferences.

AI helps to risk management in banking sector: Artificial intelligence helps to keep accurate and confidential data while giving the loans. It is a very complex process.

AI helps to protecting the personal data: Artificial intelligence can detect and prevent the errors. Artificial intelligence mobile apps can detect the issue of fraud. Artificial intelligence helps to improves the employees effectiveness:

Artificial intelligence can improve the employee's effectiveness and customer experiences through its different features. It generates the accurate work in banks, cash transfer to bill payments, card management and other supports. This facility helps to increase the customer's satisfaction level. It can manage all the services through mobile apps.

AI helps to analytics in banks: Artificial intelligence helps to analyse the pattern, correlation and grouping, fraud detection, risk modelling, biometric identification or credit underwriting etc.

3. STATEMENT OF PROBLEM

Artificial intelligence is an integral part or economic activities of all the sectors. It has become integral part of banking, accounting, marketing, business etc. Banking sector has an impact on all the sections of the society- educated and uneducated, literate and illiterate, rich and poor, young and old etc. Use of artificial intelligence reduces the personal touch or the personal interaction of individuals. Until core banking and E-banking services were introduced, the bank customer had a personal rapport with the bank employees. Over the past 10 yrs, AI has taken over all the banking services and in this pandemic situation, all banking transaction are electronically carried out. This shift has been useful but customer has faced challenges in the use- internet connectivity, lack of convenience, etc. This is in this context that this study is carried out.

4. OBJECTIVES

To study the awareness of the AI used in banks.

To assess the challenges faced by customers due to use of AI in banking.

5. SCOPE OF STUDY

The study is only restricted to banking customers in Chennai.

The study is studied to know the awareness of Artificial Intelligence among the banking customers only.

6. RESEARCH GAP:

The previous researchers has not given more importance on customer needs and satisfaction. The researchers has not made the research pertaining to Chennai population.

7. METHODOLOGY

Primary data will be collected through questionnaire and the secondary data will be collected from the websites, and related articles. The samples are taken from the bank customers of Chennai city. The size of the sample is 110. The convenient sampling technique was used for analysis.

8. REVIEW OF LITERATURE

Omar Awad Alzaidi(2018)-“Impact of artificial intelligence on performance of banking industries in middle east. In this paper, the researcher explained about main aim of the study to analyse the impact of artificial intelligence in banking sector in middle east. This study was presents the review of application in AI techniques in banking industry. And it also improving the overall performance of banking system and banking network. This study the researcher focused about the advantages, disadvantages, opportunities with use of artificial intelligence in banking sector. In this study the author used both primary and secondary data. The sample size was 200.

Dr. Chammika Mallawaarachchi(2019) -“ The Importance of Artificial Intelligence in Customer's perceptions in services of Interactive Voice Recognition in the Banking Industry in Sri Lanka. In this paper, the author study about the customers'position on automated Interactive Voice Recognition services in the banking industry in Sri Lanka. The researcher has worked on developing a new model based on the concept of Artificial Intelligence (AI). The primary data is collected via telephonic interviews. In this study the author used Primary data, sample size is 100.

Sindhu J, Renee Namratha (2019)-“Impact of artificial intelligence in chosen Indian commercial bank” In this paper, the researcher compares and analyses the AI used by the leading commercial banks India and across the world. And also analyses the profitability and feasibility of adopting the AI for the chosen services towards the chosen banks. In this paper the researcher use , primary and secondary data. They used Primary data is collected through questionnaire. Statistical tools are Correlation, reliability test, Cronbach Alpha, hypothesis. Primary data using questionnaire Statistical tools: Correlation, reliability test, Cronbach Alpha, hypothesis.

Teena Hassija (2020)-“ Impact of Artificial Intelligence in customer satisfaction for Banking Industrys. In this paper, the author, explains the major Artificial Intelligence tools being used in Banking industry in India, finds out the customer satisfaction by the use of AI by Banks and also identify the reason area of improvement for application of AI in Indian Banking Services. This study clearly shows that AI in banking sector is more popular among youth and mostly they are males and is also quite popular among educated group as it is being used by graduates or post graduates. The author used survey method. Sample size was 200.

Sammour, Ammar and Chen. W (2019)-“ Artificial Intelligence and customers service in banking”. In this paper, the researcher explores the impact of artificial intelligence (AI) banking service innovation on Y-generation customers’ lifestyle. This paper focuses on the banking service innovation using AI and its impact mobile banking customers and younger generation customers. The author used primary and secondary data. The sample size is 8000. This paper revealed how AI platforms controlled youth generation lifestyle by attracting them to use such financial wallet.

9. RESEARCH METHODOLOGY

Primary data will be collected through questionnaire and the secondary data will be collected from the websites, and related articles. The samples are taken from the bank customers of Bangalore city. The size of the sample is 110. The convenient sampling technique was used for analysis.

10. DATA ANALYSIS:

TABLE 1: DEMOGRAPHIC PROFILE

DEMOGRAPHICS	PROFILE	NUMBER	PERCENTAGE
GENDER	MALE	30	27.3%
	FEMALE	80	72.7%
AGE	15-30	92	83.6%
	30-45	14	12.7%
	45-60	3	2.7%
	60& ABOVE	92	0.9%
EDUCATION	BELOW10TH	2	1.8%
	UP TO PUC	4	3.6%
	GRADUCATION	39	35.5%
	POSTGRADUCATION	58	52.7%
	DIPLOMA	4	3.6%

	OTHERS	3	2.7%
ANNUAL INCOME	LESS THAN 1 LAKHS	68	61.8%
	1-3 LAKHS	19	17.3%
	3-5 LAKHS	9	8.2%
	5 LAKHS	14	12.7%
PROFESSION	STUDENT	64	58.2%
	EMPLOYEE	28	25.5%
	BUSINESSMAN	2	1.8%
	TEACHER	7	6.4%
	HOMEMAKER	6	5.5%
	OTHERS	3	2.7%

Among the 110 respondents received, the female respondents were found to be 80, which contributed 72.7% of the total respondents. Most of the respondents were of the age group 15-30 which made up 83.6% of the total respondents. The respondents with educational qualification of Post-Graduation were found to be more in the total responses received. The

responses received showed that 68 out of 110 respondents earned an annual income below 1 lakh. 64 respondents belonged to student section among the received responses.

TABLE 2:

AWARENESS OF THE RESPONDENTS REGARDING THE SERVICES PROVIDED THROUGH AI TECHNOLOGY

AWARENESS	COUNT	PERCENTAGE
ATM	80	72.20%

NETBANKING	67	60.90%
MOBILE BANKING	76	69.10%
DIGI LOCKER	21	19.10%
SMS -ALERT	56	50.90%
E-MAIL ALERT	50	45.50%
CHATBOTS	12	10.90%
PASS BOOK UPDATING KIOSKS	32	29.10%
CASH DEPOSIT MACHINE	42	38.20%
BLOCK CHAIN TECHNOLOGY	15	13.60%

From the above table, the respondents are aware of ATMs to a larger extent than the other services (i.e., 80 respondents which 72.2% of the total responses). The awareness of the chatbots is the least among the respondents which is only 10.9% (12) of the total respondents.

TABLE 3

USAGE AND SERVICES

USAGE	TO A VERY LARGE EXTENT (5)	TO A LARGE EXTENT(4)	TO A SMALL EXTENT(3)	TO A VERY SMALL EXTENT(2)	NOT AT ALL (1)	AVERAGE RATING
ATM	38	43	21	8	0	4
NET BANKING	23	46	27	11	3	3.68
MOBILE BANKING	46	26	27	11	3	3.7
DIGI LOCKER	16	18	27	18	31	2.7
SMS ALERT	25	43	24	11	7	3.61%
EMAIL ALERT	21	36	28	15	10	3.39
CHATBOTS	9	19	25	22	35	2.5
PASSBOOK UPDATING KIOSKS	22	29	23	20	16	3.19
CASH DEPOSITS MACHINE	21	32	20	19	18	3.17
BLOCK CHAIN TECHNOLOGY	14	17	21	20	38	2.53
E BANKING	23	39	18	13	17	3.34

We have analysed the amount of usage on the basis of the weighted average, in which, the usage is considered as very high when the weighted average is 4.5 and above. Very low usage of the service is interpreted when the weighted average is below 2.5. From the above analysis, we can interpret that the respondents are more convenient in using atm machine to a large extent than the others, as it provides benefits, other than withdrawals, such as, open a fixed deposit account, pay income tax, pay insurance premium, apply for personal loan, transfer cash, pay bills and book railway tickets.

TABLE 4:

CHALLENGES FACED BY THE CUSTOMERS FOR USING THE AI TECHNOLOGY

CHALLENGES	COUNT	PERCENTAGE
THREATS OF SECURITY	75	68.2%
NOT TECH SAVVY	22	20%
SERVICES ARE NOT USES FRIENDLY	19	17.3%
INTERESTED IN PERSONALISED BANKING	42	38.2%

The above table clearly shows that people think that as the technology improves, the threat of security is the main factor that holds them from using the same among all the other factors.

11. HYPOTHESIS:

Ho – there is no relationship between challenges faced due to advancement of ai and its usage. Ha – there is a relationship between challenges faced due to advancement of ai and its usage. For the purpose of testing the hypothesis, z-test is used.

The null hypothesis is rejected when p-value is less than alpha ($< \alpha$). Null hypothesis is accepted when p-value is more than or equal to the alpha value ($\geq \alpha$). The alpha value (α) = 0.05.

	VARIABLE 1	VARIABLE 2
MEAN	3.255455	39.5
KNOWN VARIANCE	0.250027	664.333

OBSERVATION	11	4
HYPOTHESIS MEAN DIFFERENCE	0	
Z	-2.812222	
P(Z<=Z) ONE- TAIL	0.00246	
P(Z<=Z) TWO TAIL	1.644854	
Z CRITICAL TWO TAIL	1.959964	

The above testing shows that the p-value is lesser than the alpha value (p-value< α). Hence the null hypothesis is accepted. Therefore, there is no relationship between challenges faced due to advancement of ai and its usage.

12. FINDINGS

This study studies the satisfaction, awareness, usage and the challenges faced by the banking customers in using ai. The findings of the study are, in all the fields of this study, i.e., awareness, usage and satisfaction, the customers using atm service is found to be more. The study also finds out that most the customers perceive that threat of security is the main factor where the customers hesitate to use artificial intelligence.

13. CONCLUSION

This is a generation where technology is booming to a greater extent. The human beings are replaced by machines. The natural intelligence, such as the human intelligence is replaced by machine intelligence. In this tech savvy world, most of them prefer convenience over all the other aspects. This is the main reason the technology has spread its wings in all the fields. It is taking over the traditional approach. Especially, in this situation, where people want to avoid crowds, artificial intelligence comes to their rescue.

References

References

1. Amar awadalzaidi,(2018),-“impact of artificial intelligence on performance of banking industries in middle east ijcsns international journal of computer science and network security, vol.18 no.10. [Http://paper.ijcsns.org/07_book/201810/20181021.pdf](http://paper.ijcsns.org/07_book/201810/20181021.pdf)
2. mallawaarachchi, chammika. (2019). "the importance of artificial intelligence in customer's perceptions in services of interactive voice recognition in the banking industry in srilanka". 2nd international 0 10 20 30 40 50 usage to a very large extent (5) to a large extent (4) to a small extent (3) to a very small extent (2) not at all (1) 75 22 19 42 0 20 40 60 80 threat of security not tech savvy

- interested in 106 conference on recent developments in social sciences, business, management and humanities research, <http://repository.lib.vpa.ac.lk/handle/123456789/1038?show=full>
3. sindhu j, reneenamratha, (2019)-“impact of artificial intelligence in chosen indian commercial bank” asian journal of management. 10(4): october- december, 2019 <https://ajmjournal.com/abstractview.aspx?pid=2019-10-4-15>
 4. teenahassija, (2020),-“ impact of artificial intelligence in customer satisfaction for banking industry vol. 29 no. 9s (2020): vol. 29 no. 9s (2020) special issue <http://serisc.org/journals/index.php/ijast/article/view/14170>
 5. sammour, ammar and chen, w. (2019) artificial intelligence and customers service in banking: the bank of the future monzo. In: artificial intelligence and data – disruptions to society, organisations and people, 20-21 nov 2019, london, uk. (unpublished) <https://www.bam.ac.uk/civicrm/event/info%3fid%3d3>
 6. <https://www.wipro.com/business-process/why-banksneed-artificial-intelligence/>
 7. <https://www.britannica.com/technology/artificialintelligence>
 8. <https://marketbusinessnews.com/financialglossary/artificial-intelligence/amp/>
 9. <https://www.thedifferenceengine.tech/blog/2019/11/anintroduction-to-artificial-intelligence-the-four-types-ofai>
 10. <https://www.forbs.com/sites/cognitiveworld/2019/06/19/7-types-of-artificial-intelligence/?sh=23afd353233e> [11] <https://www.businessinsider.com/ai-in-banking-report> [12] <https://www.usmsystems.com/use-cases-of-ai-in-thebanking-sector/>
 11. <https://www.techvidvan.com/tutorials/artificialintelligence-features/>
 12. <https://www.wipro.com/business-process/why-banksneed-artificial-intelligence/>