Original Article
ISSN (Online): 2582-7472

ShodhKosh: Journal of Visual and Performing Arts
April 2024 5(4), 1530–1535

AI DRIVEN CUSTOMER SERVICE IN BANKING

Dr. Nisha Mary Jose [1], Biji Jose [2]

[1] Assistant professor of Commerce Government Arts & Science College Karunagappally
[2] Assistant Professor of Commerce Government College Kottayam

DOI
10.29121/shodhkosh.v5.i4.2024.4515

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

ABSTRACT

The adoption of Artificial Intelligence (AI) in banking has revolutionised customer service by offering efficient and personalised experiences. This study aims to explore the awareness and usage, and most widely used AI-driven customer service platforms in the banking sector. The study is focussed among educated and employed individuals in the Kottayam district of Kerala. Factor analysis is used to identify the awareness and usage of the AI driven customer services. The study highlights the significant benefits of AI in banking, including minimum response times, 24/7 availability, personalised interactions, and enhanced convenience. The study also examines the most popular AI driven platforms among respondents. By understanding the perceptions of educated employed individuals, the study can give suggestions for developing more inclusive and efficient AI strategies in the banking sector, promoting a balanced approach between technology and human centric services.

Keywords: AI Driven, Chatbot, Voice Recognition, Virtual Assistance

1. INTRODUCTION

The evolution of AI (Artificial Intelligence) brings out drastic changes in every industry and so in the case of banking industry. The history of AI industry can be traced back to 1950`s when Alan Turing and John McCarthy laid foundational theories for machine learning (Turing, 1950; McCarthy, 1956). AI is driven by advancements in machine learning, Natural Language Processing and data analytics. Banks being a customer service industry AI helps to provide efficient, speedy and customised services to their customers. Banks adopt AI driven tools such as chatbots, virtual assistants and voice recognition services to provide 24*7 services to the customers. AI also helps banks to reduce the operational cost, automate routine bank activities and can have better customer engagement.

Kottayam district in Kerala is one of the highest educated and employed districts in Kerala (Census India 2011). The proposed study is conducted among educated and employed persons in the district of Kottayam. These categories of people are aware about various AI driven tools as in almost all the employment sectors this AI driven technologies are used. This profile respondents have the highest chance of familiarity with various digital banking platforms and majority of them were using the same.

2. REVIEW OF LITERATURE

AI was initially used as tool for office automation and fraud detection during its early introduction into the banking sector. With the rapid advancements in technology banks extended its role to provide efficient customer services. By utilizing chatbots, virtual assistants, and automated customer support systems, banks were able to deliver efficient transaction processing to their customers (Maseke, 2024). The adoption of AI-assisted technologies not only improved the operational efficiency of banks but also enhanced customer delight. These services have become a benchmark for personalized customer service, emerging as a revolution in the human-driven service industry. AI-driven services in the banking sector are in a stage of continuous innovation (Sheth et al., 2022). Beyond customer service, AI-driven technologies also extend to risk management through AI-powered algorithms. These systems can monitor transaction patterns, identify anomalies, and enhance security measures, thereby protecting customer assets (Hassan, 2024). The availability of predictive analytics and voice recognition systems enable the financial institutions to offers customized financial solutions and timely alerts on recent financial opportunities.

2.1. RESEARCH GAP

There are many studies relating to AI driven customer service in the banking sector. However, almost all of these studies are general in nature and not focused on any specific group or particular category of people. Additionally, whether the awareness and adoption of AI driven services depend on education or employment status has not been studied in detail. The existing studies fail to identify how education and employment will influence the awareness and usage of these AI driven services. Hence, there exists a research gap in understanding how education and employment will have an implication on awareness, adoption, and satisfaction of AI driven services among respondents in a particular demographic profile.

2.2. STATEMENT OF THE PROBLEM

In the present world, every person is dependent on AI driven technologies in every walk of life. For instance, when a consumer tries to purchase a product, they often browse online stores, where recommender systems guide their purchase decisions. Banks, as the major financial institutions around which the global economy revolves, provide various AI assisted services, such as online transactions, SMS-based balance checks, 24/7 services, and voice-assisted technologies to enhance customer service. The awareness and usage of these facilities, along with the level of satisfaction towards them, is a significant area of concern. In this context, it is pivotal to conduct a study among educated and employed individuals to assess their awareness, usage, and satisfaction levels regarding AI driven customer services in banks. Therefore, this study proposes to explore `AI Driven Customer Service in Banking` among educated employed youth in the Kottayam district.

2.3. OBJECTIVES OF THE STUDY

- To identify the awareness and usage of AI driven customer service in banking among respondents in the study area.
- To examine the relationship between usage and satisfaction while using AI driven customer service banking.

2.4. HYPOTHESIS

- H1: There is significant awareness of AI driven services in banking among the respondents in the study area.
- H1: There is significant usage of AI driven services in banking among the respondents in the study area.
- H1: There is a significant relationship between usage and satisfaction with AI driven customer services in banking among the respondents in the study area.

2.5. SCOPE OF THE STUDY

The present study is conducted among 52 educated employed persons in the district of Kottayam. The intention towards selecting the category of the respondents is that the educated employed persons are usually very much familiar with AI driven banking services.

2.6. OPERATIONAL DEFINITION

For the present study educated refers to those who have graduation or higher. Employed refers to individuals who are working in private, public or Government sector and who are not included in the list of Below Poverty Line by the Government.

3. RESEARCH METHODOLOGY

The present study intends to identify the awareness and usage of AI driven customer service among educated employed persons in Kottayam district. For then purpose of the study the researcher used both primary and secondary data. Primary data has been collected from among 52 respondents in Kottayam district. A sample size greater than 30 and less than 500 is considered to be adequate for research studies (Farhati, 2024; Sekaran & Bougie, 2016). Purposive sampling is used for the present study, as it can locate samples, bias free, which in turn increases the trust worthiness of the findings of the study(Nyimbili Friday & Nyimbili Leah, 2024). Primary data has been collected through well structured questionnaire. The collected data were analysed using SPSS 25 software. Secondary data were collected from available journals, articles and also from various websites.

3.1. ANALYSIS AND INTERPRETATION

The study attempts to identify and analysis the awareness, usage and satisfaction towards various AI driven banking services among educated employed youth in Kottayam district Kerala. Table No:1 represents the socio-economic and demographic profile of the respondents in the study area.

Table No:1 Socio-Economic and Demographic Profile of the Respondents

Category		Frequency	Percent
Gender	Male	24	46.2
	Female	28	53.8
Annual Family Income	Upto 5 lakh	24	46.2
	500000-1000000	8	15.4
	1000000-1500000	4	7.7
	Above 15 lakhs	16	30.8
Area of Specialisation	Arts	20	38.5
	Science	12	23.1
	Commerce	16	30.8
	Technical	4	7.7
Employment Category	Government	24	46.2
	Public Sector	8	15.4
	Private Sector	20	38.5
AI Banking Service Used	SBI YONO	28	53.8
	Canara Ai	24	46.2

Computed Data

3.2. EXPLORATORY FACTOR ANALYSIS (EFA) OF AWARENESS AND USAGE OF AI DRIVEN BANKING SERVICES

Exploratory Factor Analysis is used to identify the structure and relationship of the related variables/Factors. For the present study EFA has been conducted to examine the awareness and usage of AI driven services among educated employed persons in Kottayam district.

Table No:2 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.640
Bartlett's Test of Sphericity	Approx. Chi-Square	169.840
	df	15
	Sig.	.000

Computed Data

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity were conducted to assess the suitability of the dataset for factor analysis. The KMO value of 0.640 indicates moderate sampling adequacy, confirming that the data is sufficient for factor analysis. Bartlett's Test of Sphericity yielded a chi-square value of 169.840 with 15 degrees of freedom and a significance level of $p < 0.001$. These results validate the presence of sufficient correlations among variables to proceed with exploratory factor analysis.

Hypothesis formulated for the factor analysis is as follows.

H1: There is significant awareness of AI driven services in banking among the respondents in the study area.

H1: There is significant usage of AI driven services in banking among the respondents in the study area.

Table No:3 Extracted Factors of Awareness and Usage of AI Driven Banking Services

Statements/Factors	Component	
	Awareness	Usage
I have installed my bank's mobile app on my phone	.916	
I feel comfortable in using my banks automated services like WhatsApp, google assistants, chat boats for banking transactions.	.829	
I have used my banks mobile app or website to get customer support without speaking to bank officials.	.783	
I prefer using my banks voice enabled chatbot for banking services instead of typing my queries.		.772
I think using automated support is faster than visiting the branch for small queries.		.758
I believe automated banking services are useful for answering common customer questions.		.920

Computed data

It's very clear from the above table (Table No:3) that the respondents are highly aware of various AI driven services provided by banks and they are actively using the same. High factor loading support this finding.

3.3. RELIABILITY ANALYSIS

Reliability analysis ensures the consistency and dependability of a measurement tool. In this study, Cronbach's Alpha was employed to assess the internal consistency of items measuring the awareness and usage of AI driven customer services among respondents in the study area. Cronbach's Alpha values range from 0 to 1, with higher values indicating greater reliability. According to Nunnally (1967) values of 0.60 or above are considered acceptable for exploratory research, with values exceeding 0.70 indicating good reliability and those above 0.8 reflecting excellent reliability. Similarly, Griethuijsen et al. (2015) and Taber (2018) support the use of 0.60 as an acceptable range for social science research. This analysis highlights the consistency and reliability of the measurement scale and its components.

Table No:4 Reliability Analysis for Awareness

Reliability Statistics	
Cronbach's Alpha	N of Items
.822	3

Computed Data

Table No:5 Reliability Analysis for Usage

Reliability Statistics for Usage	
Cronbach's Alpha	N of Items
.789	3

Computed Data

The reliability analysis of various awareness factors (0.822) and usage factors (0.789) demonstrates strong internal consistency which confirms the reliability of the instrument tool.

3.4. CORRELATION ANALYSIS

Correlation analysis was conducted to examine the relationship between usage and satisfaction of AI driven customer service in among respondents in Kottayam district. Hence the hypothesis formulated for the same as:

H1: There is a significant relationship between usage and satisfaction with AI driven customer services in banking among the respondents in the study area.

Table No:6 Correlation between Awareness and Satisfaction of Using AI driven Customer Service in Banking

			Usage	Satisfaction
Kendall's tau_b	Usage	Correlation Coefficient	1.000	.386**
		Sig. (2-tailed)	.	.000
		N	52	52
	Satisfaction	Correlation Coefficient	.386**	1.000
		Sig. (2-tailed)	.000	.
		N	52	52
**. Correlation is significant at the 0.01 level (2-tailed).				

Computed Data

The correlation analysis reveals a strong positive relationship between usage and the level of satisfaction in using AI driven customer service (frequency of online purchase), with a Kendall's tau-b correlation coefficient of .386**, which is statistically significant at the 0.01 level (p = 0.000). This result indicates that an increased usage of AI driven banking services significantly contributes to the increased satisfaction level.

3.5. IMPLICATIONS OF THE STUDY

- The strong internal consistency and high factor loadings indicated that customers not only aware about AI driven customer services but are also utilising the same into their banking routines, which leads to further technological advancements.
- The significant positive correlation between usage and satisfaction implies that by enhancing the quality and accessibility of these services could directly boost customer satisfaction, leading to higher customer loyalty.

The present study aimed to analyse the influence of AI driven customer service in Indian banking sector. The study established a significant relationship between AI usage and customer satisfaction where ease of use and convenience found to be significant factor contributing to use of AI driven services. Hence, the bank should enhance the use of AI driven services and should extend its use from basic transaction to more advanced and proactive financial services. While enhancing the use of AI in banking services it should also

strengthen the security measures to win the confidence and trust of customers in the usage of AI driven services. The current study concentrated on educated employees leaving amble scope for longitudinal and comparative studies among people with varying demographic characteristics to get an in-depth understanding on the influence of AI driven services on customers.

CONFLICT OF INTERESTS

None .

ACKNOWLEDGMENTS

None.

REFERENCES

Turing, A. M. (1950). Computing Machinery and Intelligence. Mind, 59(236), 433-460. https://doi.org/10.1093/mind/LIX.236.433

McCarthy, J., Minsky, M. L., Rochester, N., & Shannon, C. E. (1956). A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence. Dartmouth College, Hanover, NH.

https://www.censusindia.co.in/district/kottayam-district-kerala-597

Maseke, B. F. (2024). The Transformative Power of Artificial Intelligence in Banking Client Service. South Asian Journal of Social Studies and Economics, 21(3), 93-105.

Sheth, J. N., Jain, V., & Chakraborty, A. (2022). AI-driven banking services: The next frontier for a personalized experience in the emerging market. International Journal of Bank Marketing.

Hassan, A. (2024). AI-Powered Banking: From Customer Service to Risk Management. Harvard University.

Farhati, D. M. (2024). Sample Size in Qualitative and Quantitative Study. International Journal for Multidisciplinary Research, 6(1).

Nyimbili Friday, & Nyimbili Leah. (2024). Types of Purposive Sampling Techniques with Their Examples and Application in Qualitative Research Studies. British Journal of Multidisciplinary and Advanced Studies: English Lang., Teaching, Literature, Linguistics & Communication, 5(1), 90–99.

Nunnally, J. C. (1967). Psychometric theory. New York, NY: McGraw-Hill.

Griethuijsen, R. A. L. F., van Eijck, M. W., Haste, H., den Brok, P. J., Skinner, N. C., Mansour, N., Gencer, A. S., & BouJaoude, S. (2015). Global patterns in students' views of science and interest in science. Research in Science Education, 45(4), 581–603. https://doi.org/10.1007/s11165-014-9438-6.

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. Research in Science Education, 48(6), 1273–1296. https://doi.org/10.1007/s11165-016-9602-2