

# A Descriptive Study on AI Based Banking Services Awareness Among the Banking Customers

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## Abstract

**Introduction:** Artificial intelligence denotes technology that emulates human problem-solving approaches and behaviours, executing them on a daily basis. In recent years, India has witnessed substantial expansion and advancement in the banking sector. A significant advancement in the banking business is the integration of digital banking. The objective of the study is to examine the AI Based Banking Services Awareness Among the Customers and how AI is changing the face of modern-day banks.

**Methods:** This study used a descriptive observational methodology, employing both primary and secondary data sources to support the conclusions. A systematic questionnaire was created to gather primary data from existing customers of different banks.

**Findings and Conclusion:** The awareness level also depends on banks' communication strategies and digital education initiatives. Informing customers about the safety, convenience, and personalisation offered by AI systems increases their likelihood of adopting them. Conversely, limited knowledge often leads to hesitation and distrust in using such services.

**Key Words:** Artificial Intelligence, Private Banks, AI Based Banking Services, Machine Learning.

## Introduction

Artificial intelligence denotes technology that emulates human problem-solving approaches and behaviours, executing them on a daily basis. Examples of tasks managed by artificial intelligence include the creation and processing of vast volumes of data and the identification of fraud. The implementation of artificial intelligence technology in the banking sector is not optional for banking institutions; it is a requisite to satisfy the creative demands of clients and

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the market. Artificial intelligence, Natural Language Processing (NLP), Robotic Process Automation (RPA), and Machine Learning (ML) constitute the foundational elements of the continuous digital services offered by banks. The implementation of AI improves the productivity, efficiency, and effectiveness of banking units while simultaneously safeguarding consumer privacy, providing cost-effective services, enhancing customer support, facilitating speech recognition, and enabling rapid decision-making.

In recent years, India has witnessed substantial expansion and advancement in the banking sector. A significant advancement in the banking business is the integration of digital banking. Financial enterprises exhibit robust competitiveness against banking institutions. Banks can only withstand this competition with the assistance of digital banking. Digital banking represents a transition from traditional manual banking to an online platform, enabling individuals to conduct banking activities 24/7 via internet technology. Digital banking enables users to independently conduct numerous transactions. Consequently, digital banking is a self-service technology that enables bank customers to access their personal accounts and execute numerous transactions. A primary driver in the expansion of digital banking is the integration of AI technologies. The implementation of AI has enhanced the efficiency and efficacy of the banking sector. Utilising AI models, banks may offer tailored financial strategies, reduce support wait times, and proactively identify fraudulent activities.

Artificial Intelligence (AI) has been a transformational influence in the Indian banking sector, redefining conventional operations and customer service paradigms. As digitalisation accelerates, Indian banks are progressively integrating AI-driven solutions to augment efficiency, elevate customer experience, bolster security, and facilitate data-informed decision-making. Prominent banks, like the State Bank of India (SBI), HDFC Bank, ICICI Bank, and Axis Bank, are currently utilising AI technologies across multiple facets of banking operations.

### **Obstacles and Hazards in the Implementation of AI Technology**

**Data Privacy, Security, and Regulatory Compliance:** Managing extensive quantities of sensitive consumer information entails inherent risks. Banks must comply with privacy regulations, ensure secure infrastructure, and safeguard against cyber threats.

**Legacy Systems and Infrastructure Constraints:** Numerous banks, particularly in the public sector, continue to depend on antiquated IT systems that pose challenges for integration with contemporary AI frameworks. Enhancing them is expensive and intricate.

**Talent Gap:** Insufficient availability of proficient data scientists, AI/ML specialists, and individuals with expertise in both the banking sector and technology.

**Model Interpretability and Bias:** AI models, especially those based on deep learning, often function as "black boxes." If choices, such as credit rejections, lack transparency, customer trust and regulatory compliance are adversely affected. Data biases might result in inequitable outcomes.

**The danger of over-reliance and systemic risk:** Dependence on a limited number of technology providers or non-transparent AI models can present systemic hazards. Furthermore, inadequately monitored failures in AI systems could exacerbate consequences.

### **Objective of the Study:**

- To examine the AI Based Banking Services Awareness Among the Customers and how AI is changing the face of modern-day banks.

### **Review of Literature**

The banking industry has been significantly influenced by evolution of technology. The growing applications of computerized networks to banking reduced the cost of transaction and increased the speed of service substantially. The nature of financial intermediaries made banks improve their production technology by focusing on distribution of products.

Karan Kumar et. al., (2024) said the swift progress in technology and the integration of artificial intelligence in Banking and Finance presents numerous advantages and challenges. Customers perceive technology-driven banking activities differently. The integration of AI in banking facilitates seamless access; nevertheless, it simultaneously raises concerns over privacy, money laundering, and data breaches. Banks are utilising many domains of AI to enhance and assess their operations for clients.

**Gianluca Elia et. al., (2023)** demonstrated that Fintech has a beneficial impact on consumer satisfaction by offering personalised, accurate, and expedited services. Nevertheless, the paper also observes that the banking industry's adoption rate of Fintech is low, which is attributed to factors such as data security concerns, a lack of AI knowledge among employees, and resistance to change. The paper proposes that the banking industry should increase its

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investment in employee training and education, as well as in collaboration with third-party vendors, in order to surmount these obstacles and capitalise on the potential of Fintech.

Singh and Zaheer (2023) reviewed on impact of AI on Green Banking towards sustainability with special reference to Indian public and Private bank. This paper examines how Artificial Intelligence (AI) was used in green banking practices in India and why it is important in the present situation. It also discussed how banks support and participate in achieving UN SDGs and environmental sustainability.

According to SV Jaiwant (2022), how AI has transformed the banking sector by enabling better customer service and personalized experiences. It was also discussed how banks are leveraging AI to offer seamless financial services and become future-ready. The main focus of this research was to understand the concept of AI in banking and its impact on the efficiency and success of banking operations. This study also highlighted how AI innovations are part of Industry 5.0, which aims to integrate automation and human intelligence.

K. Srivastava (2021) explained the paradigm shift in Indian banking industry with special reference to artificial intelligence. His paper explored how Artificial Intelligence (AI) is applied in different areas of the Indian banking sector and its implications. It also discussed the benefits and challenges of AI in India.

Artificial intelligence is employed in digital banking for fraud detection, client support, and various other functions. Artificial intelligence significantly influences the consumer experience, a crucial sector. Leveraging their data and activity history, AI-driven virtual assistants and chatbots can offer clients customised guidance and support. Automating remote and follow-up tasks enhances client satisfaction while enabling businesses to reduce expenses. Wang, J. L. (2019).

Navleen Kaur et. al. (2020) Currently, artificial intelligence is a vital concept in the operations of the banking sector. This study focusses not only on the existing applications and functioning patterns of AI but also extends beyond that. This study emphasises that the adoption of AI technology has become necessary and integral to the banking sector, rendering it a must for survival in the contemporary era of artificial intelligence. Fostering a constructive integration and culture between human resources and artificial intelligence technologies. This study highlights how artificial intelligence seeks to enhance efficacy and cultivate a customer-oriented strategy. In a market where the customer reigns supreme, artificial intelligence tools and technology are designed with the customer's advantage in mind. This study is descriptive,

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thorough, and investigative, having gathered primary data through a bank survey and the design and development of structured questionnaires. This study utilises secondary data, including scholarly articles, web data, and industry reports.

Bhuvana & Vasantha (2017) Highlighted that Perceived Usefulness, Perceived Ease of Use and attitude are the observed variables for the behavioural intention of the people to utilize cashless payment systems. The study has been found out that demonetization of high value currency notes is partially mediating the relationship between attitude and Behavioural intention of people for accessing cashless payment systems.

Bashir and Madhavaiah (2015) explored the consumer attitude and behavioural intention towards internet banking adoption in India. This paper examined how perceived risk, trust, enjoyment, website design and social influence affect the customers' attitude and intention to use Internet banking services. It also provides an insight into the determinants of these factors.

## **Methodology**

This study used a descriptive observational methodology, employing both primary and secondary data sources to support the conclusions. A systematic questionnaire was created to gather primary data from existing customers of different banks. Furthermore, secondary data were acquired from newspapers, periodicals, academic journals, and online sources to enhance and corroborate the primary findings.

- **Sample Size and Sampling Technique**

Qualified banking customers of major private banks from Haryana made up the study's sample, which totalled 336. Researcher chose respondents using a convenience sample method, which does not rely on probability. Researcher surveyed the entire state of Haryana. The data was collected via a survey. One common method used to get information about the Indian banking sector is through online and offline surveys

- **Source of the Data Collection**

A primary data set has been utilized in this study's analysis

## **Results and Discussion**

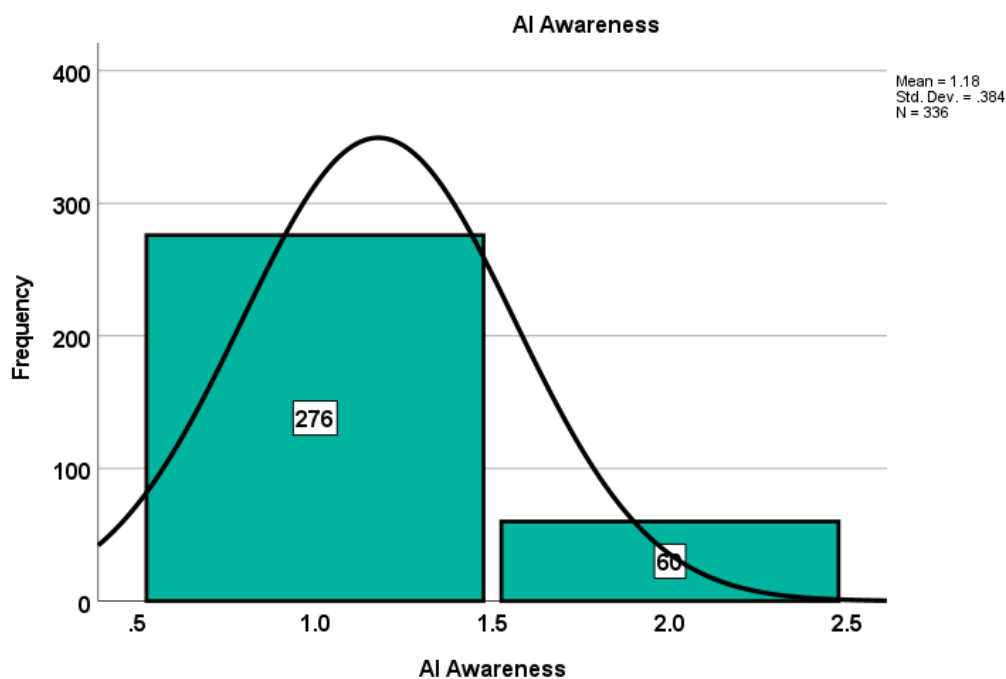
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As per Table 1 shows the AI awareness of the respondents, out of 336 respondents chosen for the survey there were 276(82.1 percent) respondents aware about the artificial intelligence and 60 respondents were not aware about the artificial intelligence techniques provided by the banks. From the descriptive statistics, the mean value and standard deviation are 1.18 and 0.021 respectively along with low level of standard error.

**Table 1: AI Awareness**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | Yes   | 276       | 82.1    | 82.1          | 82.1               |
|       | No    | 60        | 17.9    | 17.9          | 100.0              |
|       | Total | 336       | 100.0   | 100.0         |                    |

**Figure-1: AI Awareness**



As per Table 2 shows the AI awareness of the respondents, out of 336 respondents chosen for the survey there were 243 male respondents aware about the artificial intelligence and 3 males

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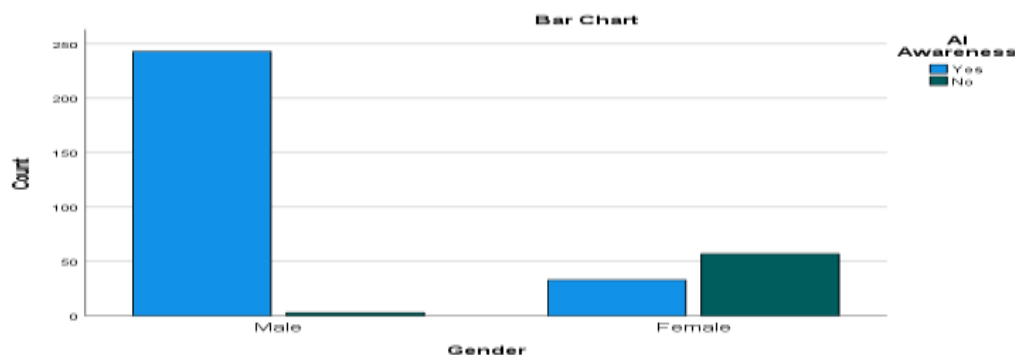
respondents were not aware about the artificial intelligence techniques provided by the banks. Further it is evident from the table 2, there were 33 female respondents aware about the artificial intelligence and 57 females respondents were not aware about the artificial intelligence techniques provided by the banks.

**Table 2: Gender \* AI Awareness Crosstabulation**

Count

|        |        | AI Awareness |    | Total |
|--------|--------|--------------|----|-------|
|        |        | Yes          | No |       |
| Gender | Male   | 243          | 3  | 246   |
|        | Female | 33           | 57 | 90    |
| Total  |        | 276          | 60 | 336   |

**Figure 2: Gender \* AI Awareness Crosstabulation**



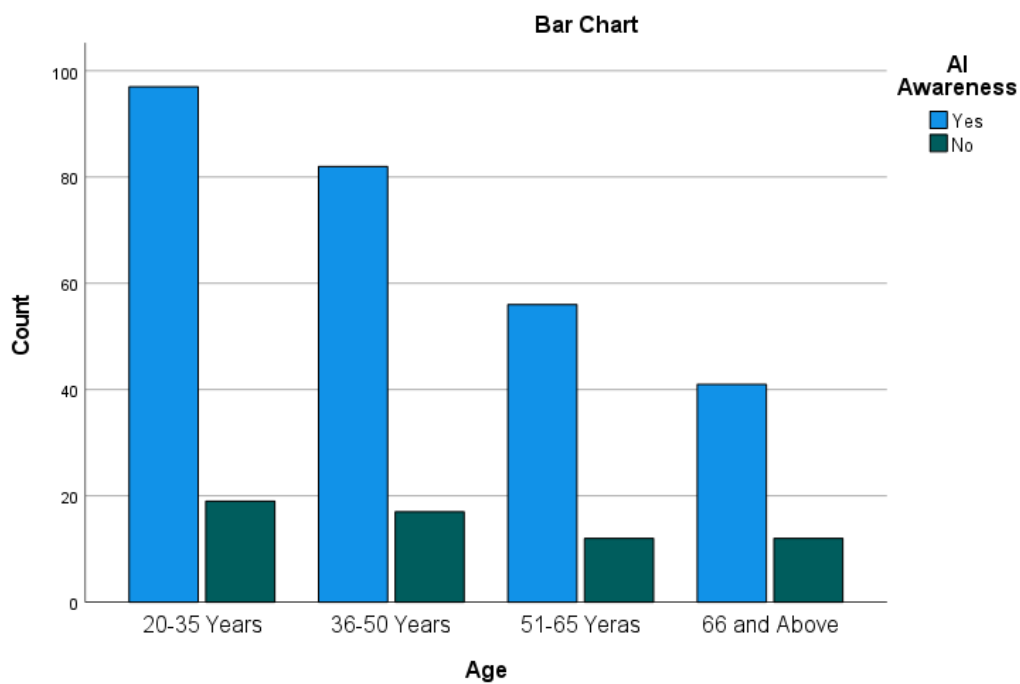
As per the below-mentioned table of crosstabulation between age and AI awareness, out of 336 respondents chosen for the survey, there was the highest proportion of the age group between 20 and 35 years, i.e., 28.87% (97 respondents), well aware about the AI-based services provided by the banks. There was the second largest proportion of age groups between 36 and 50 years, who were well aware of the AI-based services. Further, it is evident from the below-mentioned table and figure that AI awareness is showing a reducing trend with respect to the increasing the age of banking customers.

**Table 3: Age \* AI Awareness Crosstabulation**

Count

| Age          | AI Awareness |           | Total      |
|--------------|--------------|-----------|------------|
|              | Yes          | No        |            |
| 20-35 Years  | 97           | 19        | 116        |
| 36-50 Years  | 82           | 17        | 99         |
| 51-65 Years  | 56           | 12        | 68         |
| 66 and Above | 41           | 12        | 53         |
| <b>Total</b> | <b>276</b>   | <b>60</b> | <b>336</b> |

**Figure 3: Age \* AI Awareness Crosstabulation**



**Findings and Conclusion**

Customer awareness refers to the understanding and knowledge of available AI services, their benefits, and their security implications. Many customers still perceive AI-based banking tools as complex or risky due to a lack of digital literacy, limited exposure, and concerns regarding

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privacy and data security. Awareness is often higher among younger, urban, and educated customers compared to those in rural or semi-urban regions.

The awareness level also depends on banks' communication strategies and digital education initiatives. Informing customers about the safety, convenience, and personalisation offered by AI systems increases their likelihood of adopting them. Conversely, limited knowledge often leads to hesitation and distrust in using such services.

Artificial intelligence technology has emerged as a fundamental element of modernisation within the Indian banking sector. Through enhancements in efficiency, accuracy, and customer happiness, AI is revolutionising banking operations while fostering a more inclusive and secure financial environment. With banks persistently investing in AI advancements, the future of Indian banking will become progressively digital, intelligent, and focused on consumer needs.

Artificial intelligence is significantly transforming the Indian banking sector. The implementation of AI in customer service, risk management, credit assessment, operational automation, and financial inclusion has produced measurable advantages—enhanced customer experience, reduced expenses, and expanded accessibility. Successful and lasting adoption, however, hinges on overcoming numerous challenges, such as legislative and ethical frameworks, data protection, talent capacity, legacy infrastructure, and the interpretability of AI models.

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