



# A STUDY ON IMPACT OF ARTIFICIAL INTELLIGENCE IN BANKING SERVICES

AKARSHA KUMAR B H<sup>[1]</sup> AKSHAYA K M<sup>[2]</sup> ARAVINDA R<sup>[3]</sup> AAMIR MANZOOR<sup>[4]</sup>

DR NAGESWARA GUPTHA<sup>[5]</sup>

<sup>1,2,3,4</sup> Students of SVCE, Bangalore, Karnataka

<sup>5</sup> Principal, SVCE, Bangalore, Karnataka

## Abstract

This research investigated the impact of Artificial Intelligence (AI) integration in banking institutions on both customers and bankers, focusing on how it affects transactions and work processes. Data were gathered from primary and secondary sources to analyze hypotheses aimed at providing valuable insights beneficial to both customers and bankers. Primary data included 170 customer responses and 30 banker responses, totalling 200 primary data points. The study covered various banks such as Axis Bank, ICICI Bank, Karnataka Bank, HDFC Bank, etc., from the perspectives of both customers and bankers. Additionally, secondary data from books, magazines, and websites were utilized for further information. Statistical tools such as chi-square, correlation, and regression analysis were employed

to test the hypotheses. Keywords associated with this study include Artificial Intelligence, Mobile Banking, Private Banks, Customers, and Emerging Economy.

## 1.INTRODUCTION:

The term "artificial intelligence," or "machine intelligence," refers to intelligence exhibited by machines that is distinct from human intellect. It is commonly used to describe robots that are also linked to the brain, such as "learning and problem solving."

Artificial Intelligence (AI) is causing unprecedented change in banking institutions, which is driving a dramatic upheaval of the financial landscape. This paper provides a quick overview of the complex effects of artificial intelligence (AI) on a number of important sectors, including customer experiences, security procedures, risk management, operational effectiveness, return

on investment, and regulatory compliance. AI-powered chatbots and virtual assistants are redefining interactions in the customer-centric evolution by offering individualized and proactive services. Security in the financial sector is of utmost importance. Simultaneously, AI is demonstrating its guardian role by strengthening trust via biometric authentication and real-time fraud detection. Predictive analytics is causing a paradigm change in risk management by guiding financial organizations toward competitive advantages in ever-changing markets. AI automates tasks to produce operational excellence.

The banking industry's most notable and revolutionary innovation is the increasing focus on customer demands. Technically savvy customers who frequently engage with cutting-edge technology seek seamless banking experiences. Financial institutions have expanded their industrial landscape to include retail, IT, and telecom in order to fill the demands of activities such as digital money, e-banking, and real cash transfers. The bulk of banking services are now accessible to customers wherever and whenever they choose, but the financial industry has paid a price for these advancements. The benefits and drawbacks of using AI technology in the Indian banking industry are also clarified by this study.

The world of computing has undergone significant transformation as a result of recent technological advancements. Distributed computing, cloud computing, grid computing, and parallel computing are just a few examples. One of the most significant developments in computer history may have been the evolution of cloud computing during the last several years. Regrettably, a lot of institutions are still reluctant to use cloud computing. New technologies such as cloud and AI will have the biggest impacts on the banking business. Cloud technology gives banks and credit unions the ability to react quickly to shifting market conditions, improving customer experience and operational productivity through the use of data and applied analytics. This allows for better corporate agility.

## **2.PROBLEM STATEMENT:**

In recent years, the banking industry has witnessed a significant transformation with the integration of Artificial Intelligence (AI) technologies. While AI has the potential to enhance efficiency, customer experience, and decision-making processes in the banking sector, there remains a gap in understanding the nuanced impact of AI on various banking services. This research aims to address the following key problem areas:

- Customer Trust and Security Concern
- Operational Efficiency and Cost Management
- Personalization of Customer Services

### 3.OBJECTIVE:

- 1.To study about Artificial intelligence in banking and other financial sector.
- 2.To study impact of AI in banking sector.
- 3.To study advantages and disadvantages of AI in banking services.

#### 3.1 Different Areas of Artificial Intelligence can be used in banking

AI technology plays a crucial role in various aspects of the financial sector, enhancing efficiency and customer experience.

**Voice Assistance:** Interactive Voice Response Systems (IVRS) enable users to connect with financial services, handle requests, and address inquiries, reducing errors commonly associated with human interactions.

**Digitization:** AI facilitates the digitization of banking processes, enabling institutions to operate with fewer resources and branches while simplifying customer interactions.

**Data-Based AI Applications:** Leveraging big and alternative data, AI enables projects, forecasts, and personalized financial advice, improving decision-making processes.

**Predictive Analysis:** AI algorithms analyse data to forecast client expectations and provide tailored investment advice, enhancing financial planning strategies.

**Blockchain Technology:** Implementing blockchain technology enhances transaction support and security, expediting payment processes and increasing customer satisfaction.

**Tailored Services:** AI-powered systems analyse user data to offer tailored financial services, ensuring a personalized experience for each customer.

### 4.METHODOLOGY

Based on secondary data, the study is analytical in nature. The data originated from a wide range of outlets such as web pages, reports, documents, printed materials and bank and RBI sites.

Several issues also known as questions have been investigated further for this study to align with the preceding theoretical framework. The primary objective centred around the impact and causal connection between AI as a financial innovation tool and Banks' customers, employees and jobs as stated in the subsequent hypotheses for testing:

- H1. Bank clients are going to have an improved encounter with AI technologies.
- H2. Customers of banks accept both human and automated assistance equally.
- H3. Banks employing AI technologies improve time efficiency.

H4. The banking sector will undergo shifts as a consequence of financial innovation in AI technology.

H5. The banking development of AI technology will end up in the creation of fresh employment opportunities and the demise of a few bank jobs.

H6. AI financial innovation may satisfy the soft skill requirements of jobs.

## 4.1 Data gathering:

For the study to address the research subjects, two distinct kinds of questionnaires were developed and made available to bank employees as well as consumers. The survey has been divided into two schemes, each of which was developed using a Likert scale. Participants were selected at random while making sure they were correctly assigned to the survey schemes either as bank employees or clients. Here are the two survey schemes:

Schema(1) 250 individuals, primarily from various age groups and social strata that deal with banks on a personal (individual) and retail sector and are considered as bank clients, completed the Scheme (1) survey. The testing of H1, H2, and H3 as well as experimenting on how AI might improve the perception of change in customers and testing are the objectives for the data collection.

Scheme (2) of the survey, on the opposite together, concentrated on 50 bank employees spanning different tiers and grades who had been hired by popular, top-tier banks in Lebanon, which included Byblos Bank, Blom Bank, SGBL, Audi, and Lebanese Credit. The scheme's collection of data is crucial in that it assists in evaluating hypothesis H4, H5, and H6, which can be used to decide how the use of AI is affecting the way banks operate.

Data analysis is carried out SPSS statistical software while assessing linear regression hypothesis schemes and assess their levels and sustainability. First credibility of data is assessed by Cranach's alpha to determine the validity of the data and how sustainable.

A survey on machine learning in banking services was used to collect the primary data. For the survey, a questionnaire was developed, was and random sampling was managed to carry out. The internet was used to assemble secondary information from websites, e-magazines, research papers, e-books, newspapers, and certain other sources.

The personal views majority of participants regarding consumer AI in banking and financial services, having found that the strongly consent that AI applications seem to be easy to use.

Interpretation: Which can be seen in the above table, the frequency analysis used to assess the useful applications of techniques and algorithms (AI) in banking and financial services found also said 90% of respondents AI chatbot applications are very good at providing in BFS, 52.5% voice assistants are not useful in BFS, 65% authentication and biometrics are very helpful,

92.5% fraud detection and prevention is used to secure the data, 97.5% applications of KYC/AML are in documents.

## 5.CONCLUSION:

Artificial Intelligence is revolutionizing the banking and financial sector in India, bringing personalized services, faster transactions, and improved customer experiences while cutting costs. However, these changes also pose challenges unique to each institution. To thrive in this evolving landscape, banks and financial institutions must adapt to technological advancements and prepare for the future. Success lies in integrating innovations like AI and robotics while ensuring strong cybersecurity measures and offering tailored products based on customer needs. Investing in advanced analytics, cloud technology, and digital systems is crucial for staying competitive and meeting the demands of the modern market.

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