© Volume 2, Issue 8, ***August*** 2026 | JATIR
ISSN: 3139-8464 (p)

Impact Of Artificial Intelligence in Banking Sector

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***Abstract*—Artificial intelligence is known as "machine intelligence" is intelligence demonstrated by machine that differ from human intelligence, AI is term that is frequently used to characterize robots that are also associated with brain such" learning and problem solving". Artificial intelligence in banking, enhance applications and it has ability to analyse data across multiple variables, fraud detection, customer relationship and many more. Artificial intelligence is the banking as it brings the power of advanced data analytics to combat fraudulent transactions and improve compliance.AI algorithm accomplishes anti money laundering activities in few seconds, otherwise take hours and days. AI also enables banks to manage huge volume of data at record speed to derive valuable insights from it. Features such as AI bots, Digital payment advisers and biometric fraud detection mechanism lead to higher quality of services to a wider customer base. All this translate to increased revenue, reduced cost and boost in profits. The future of artificial intelligence in banking and finance is promising yet plagued with uncertainties, despite the concerns, it is obvious that AI will play a more vital role in the sector, affecting the way users interact and maintain their financial stability AI system offer, anticipate execute personalized financial advice to customer, as well as acquire information on financial strategies lending rate and future market progress.**

***Index Terms*—Concept, Areas, Impact**

I. INTRODUCTION

Artificial Intelligence is typically defined as the ability of a machine to perform cognitive functions we associate withhuman minds, such as perceiving, reasoning, learning, interacting with the environment, problem solving, and even exercising creativity. However, Artificial Intelligence (AI) is actually a combination of advanced computational technologies in varying degrees of maturity. Some of these technologies have been around for decades while others are relatively

ISSN: 3139-8464 (p)

new. Itis however an incremental technological evolution, sometimes based on old technologies, which has now been made possible by access to large volumes of data and new capacities in processing these volumes of data. The wording “Artificial Intelligence” is based on terms that can sometimes seem overused as it is used generically to cover multiple technologies. Most of the time, the use of algorithms is limited to mimicking scenarios; reproducing and automating the processing of repetitive tasks that a human being could perform. By AI itis generally “cognitive technologies that rely on large volumes of structured or unstructured data (big data)” that is meant. In this sense, “cognitive intelligence” is defined as any unstructured data processing, modelling that emulates and/or allows to augment and enhance the cognitive abilities of humans. For example, here is a non-exhaustive list of some areas of technological research:
Studying Artificial Intelligence (AI) in the banking sector is essential because it is a primary driver of industry innovation Researching this field helps financial institutions significantly reduce operational costs, automate risk and compliance management, and improve how banks and financial regulators detect fraud in real time.

a. Natural language processing:
Understands language by attributing meaning and purpose. It is often associated with Automatic Speech Recognition and Text to Speech.

b.Cognitive computing:
Support in the realization of cognitive tasks and decision making. These are interactive, iterative and evidence-based systems.

c. Smart analytics/ processing:
Predictive analysis and simulations. These provide support for rule-based automatic actions (e.g., recommendation engines).

d.Deep learning and reinforcement learning:
Structure that moves the focus of machine learning from pattern recognition to a process of sequential and experience-driven decision making.

Major Areas of Artificial Intelligence can be used in banking Sector

Personalized Financial Services	Smart Wallets
Voice Assisted Banking	Customer support
Digitalization instead of branch lines	Reduce Costs

II. REASONS FOR ADOPTION OF AI IN THE BANKING SECTOR

Enhanced Customer Experience:
AI-powered chat bots and virtual assistants can provide personalized customer support, address inquiries, and offer 24/7 assistance. These systems can handle routine tasks, such as balance

inquiries, transaction history, and account management, allowing customers to access information quickly and conveniently.

Fraud Detection and Prevention:
AI algorithms can analyse large volumes of transactional data in real time, identifying patterns and anomalies that may indicate fraudulent activity. This helps banks detect and prevent fraud more effectively, protecting customers and minimizing financial losses.

Risk Assessment and Credit Scoring:
AI algorithms can analyze vast amounts of customer data, including financial history, credit scores, and online behavior, to assess creditworthiness accurately. This enables banks to make moreinformed decisions when granting loans or evaluating risk, leading to better credit management and reduced default rates.

Process Automation:
AI technologies can automate manual and repetitive tasks within banking operations, such as data entry, document processing, and compliance checks. This improves efficiency, reduces costs, and frees up human employees to focus on more complexand strategic activities.

Personalized Financial Recommendations:
By leveraging AI algorithms, banks can analyze customer data to offer tailored financial advice and product recommendations. This can include investment opportunities, personalized savings plans, or loan options that match specific customer needs, leading to improved customer satisfaction and engagement.

Advanced Data Analytics:
AI can analyze vast amounts of structured and unstructured data, extracting valuable insights and identifying market trends. Banks can leverage this informationto make data-driven decisions, refine business strategies, and develop innovative financial products and services.

Regulatory Compliance:
AI technologies can assist banks in monitoring transactions, detecting money laundering activities, and ensuring compliance with regulatory frameworks. AI-powered systems can continuously analyze transactions and flag any suspicious activities, helping banks meet their legal obligations and reducing the risk of non- compliance.

Operational Efficiency:
AI can optimize back-office processes, automate workflows, and improve operational efficiency across various banking functions. By streamlining processes, reducing errors, and increasing productivity, banks can achieve cost savings and provide fasterand more reliable services to customers. It is important to note that while AI brings numerous benefits to the banking sector,

ensuring data privacy, security, and ethical use of AI remains crucial. Banks must prioritize safeguarding customer information and implementing transparent and accountable AI systems.

Key Benefits of Artificial Intelligence (AI) For the Banking Sector

Benefit of AI in Banking Sector						
Early Fraud Detection and Prevention	Credit Scoring and Loan approval	Improved Customer satisfaction	Reduce Cost	Enhancing operational efficiency	Efficient Risk Management	Increase in Revenue

III. LITERATURE REVIEW

(Hickam Sadok, 2022) This article explores the effects of artificial intelligence (AI) use on banks and other financial organisations' credit score assessment processes. These restrictions serve as thefoundation for a new age of economic law that introduces the certification of AI algorithms andbank-used data.

(Chandrima Bhattacharya, 2022) Through this paper we understood that literature evaluation andtheoretical studies is completed for diverse worldwide and Indian banks with admire to thecombination of AI to enhance client interactions and inner banking processes. Chatbot use-instances on banking systems are ranked primarily based totally on client experience. Practical/Theoretical implications: Based at the entire image of AI integration with banking operations, evolving Indian banks should recognition at the maximum famous use-instances todraw customers. The correlation among Chatbot use-instances can also additionally gain theinstalled Indian banks to similarly amplify business.

(Ankur Aggarwal, 2022) Explained that once all the banking offerings had been revolving across thesalaried or earners, it emerge as a crucial part of our life. Present look is primarily based upon thescope of synthetic intelligence in client revel in and robot technique automation in banking zone inIndia. Most of the client revel in associated factors confirmed right correlation with AI primarilybased total offerings through banks.

(Saloni Tripathi, 2022) Points out the dynamics of AI platforms in the banking industry and howthey are becoming a significant disruptor. Banks are facing challenges from current technology thatuses intelligent algorithms to replace human labour. Companies must integrate AI into their business strategies and practices to stay competitive.

(Omar H. Fares, 2022) The findings show how three important study areas Strategy, Process, and Customer—are covered by the literature on AI and banking. A systematic consumer credit solution application blueprint (Service Blueprint) that details the customer journey, front stage, backstage, and support procedure in banks was also stated by him in his study paper.

According to Garcia et al. (2023), AI can help mitigate information asymmetries and ethical concerns in the banking industry.
This capability is attributed to features such as transparency, precise dissemination of information, un-changeability, and computational reasoning, facilitated by technologies like smart contracts and automation.

OBJECTIVES OF THE STUDY

1. To understand the concept of Artificial Intelligence in Banking Sector.
2. To study the reason for adoption of AI in banking sector.
3. To study the impact of AI in banking sector.

IV. RESEARCH METHODOLOGY

The topic for the research study is the rise Impact of artificial intelligence in banking sector and the nature of study is theoretical and descriptive. The sources of data collection are both primary and secondary based. Primary data has been collected by conducting an interview. Open ended questions were asked by banking experts to analyze the impact of artificial intelligence on the banking sector.
The other form of source for data collection has been secondary based. The data and the information have been extracted from authenticated websites, books, journals, articles, business magazine and brochure. Through the secondary data, researcher has analyzed the different applications of artificial intelligence in the banking sector and how AI is helping banks to improve their results.

V. SAMPLING PROCEDURE

A convenience sampling technique will be followed to select the respondents for the present study. The study involves on kind of respondent. i.e., customers. Samples of 150 respondents each will draw conveniently form the population of customers. For the purpose of the study Shikaripura town as taken.

VI. RESEARCH DESIGN

Research Type: Descriptive in nature
Research Design: Qualitative
Data Collection: Banking Employees and Customers
Primary Data: through questionnaire
Secondary Data: Through journals, articles and many books.
Tools used: Percentages Analysis.

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ISSN: 3139-8464 (p)

VII. SCOPE OF STUDY

The scope of study is to analyze the different applications of AI in banks and in what ways AI could help the banks to improve their performance.

Table No1: - Shows the consumer's perceptions about Artificial Intelligence in Banking and Financial Services which are determine most of the respondents strongly agree with Artificial Intelligence applications user friendly.

Table-1: Shows the familiar with AI technology in banking.

How familiar with AI technology in banking system?	Not familiar at all	Slightly familiar	Moderately familiar	Very familiar	Total
Respondent	35	48	52	15	150
Percentages	23.33	32	34.67	10	100

Source: Primary data

The table no 1 shows that familiar with AI technology using in banking sector. Among them 34.67% of respondent were moderately familiar while 10% are very familiar.

Table-2: Shows the areas of banking operations which AI is most impactful.

Which areas of banking operations do you think AI is most impactful?	Customer Service	Fraud Detection	Loan approval	Risk Management	Investment Advisory	Total
Respondents	65	20	35	22	8	150
Percentage	43.33	13.33	23.33	14.66	5.33	100

Source: Primary data

The table no 2 shows that impact of areas of AI in banking operation. It shows that 43.33% of respondents are agree customer service, 13.33% are Fraud detection 23.33% are Loan approval, 14.66 are Risk Management and 5.33% are Investment advisory.

Table-3: Shows the replace of human involvement in Banking services

Is AI able to successfully replace human involvement in Banking services, in your opinion?	Yes	No	Total
Respondents	90	60	450
Percentage	60	40	100

Interpretation: Most of the respondents AI able to successfully replace human involvement in banking services with 60%.

Table No. 4 Different AI Tool supportive to Customers

AI Tools	Supportive		Not Supportive		Total
	Respondents	Percentage	Respondents	Percentage	
Chat Box	136	90.66	14	9.34	150
IVA	125	83.33	25	16.67	150

Mobile app assistance	140	93.33	10	6.67	150
Fraud detection	145	96.66	5	3.34	150
Credit scoring Model	146	97.33	4	2.67	150
Personalized Financial Advice	132	90	18	10	150
Customer Relationship Management	147	98	3	2	150

Source: Primary data

All the different AI tools quickly accepted and well adopted by the client with proper utility. Customer Relationship Management application with highest rating with 98% supportive highest among all the AI tools. Secondly top rated with Fraud Detection and support in Credit Score adviseswith 97.33% supporting. Need to be more interactive with voice assistance (IVA) with 83.33% as Indian diverse with different language dependence.

Table-6: Shows the factors that customers influence in banking services In Ranking Method

Banking services	Mean	Rank
Credit card services	2.62	6
Online banking	3.26	4
Loans	3.16	5
Money transfers	4.56	2
ATM withdrawals	5.06	1
Mobile banking	4.50	3
Investment services	2.55	7
Others	1.29	8

Interpretation: The banking services that influences customers utilized the most of ATM withdrawals has ranked 1.

Impact of Artificial Intelligence in Banking:

Banks use artificial intelligence (AI) to provide, predict and execute personalized financial advice to customers and get quick information about financial strategies, loan rates and future markets.

The impact of artificial intelligence on the banking industry is as follows: -

Customer satisfaction:

Artificial intelligence allows banks to improve revenue, decision making andcustomer relationship management, as well as providing customized and efficient services that aregood for customers.

Chatbot:

Bot is the meaning of Robot. Chatbot is a chatbot that can be used to perform tasks or followa predefined process. Chatbots are a type of artificial intelligence that can be used in financial institute ions. A chatbot is available 24 hours a day, 7 days a week and can provide excellent customer service.

Personal financial guidance:
Artificial intelligence helps customers make easy, fast financial decisions using the latest information on br> Provide recommendations on current market trends and stocks and bonds people can invest in.

Digital Wallet:
Digital wallet allows users to use digital currency to buy anything online through their mobile phone or computer.
Interactive Voice Response System (IVRS): A voice that works with customers, answering specific q questions, directing them to financial institutions, and providing a good customer experience.

Crime Detection:
Artificial intelligence detects financial fraud by scanning large amounts of transaction on data and monitoring for unusual or activity patterns. Artificial intelligence can reduce financial fraud, speed up processes, prevent security breaches, and facilitate machine learning.

Improve customer service:
Customer satisfaction has an impact on the performance of the banking industry and makes people think about the banking industry. Products of financial institutions. It alsohas an impact on banks' objectives and insurance policies.

Better regulatory compliance:
Intelligence applications often rely on fraud metrics to track customers, analyze transactions, identify suspicious behavior, and measure the difficulty of complying with different rules. Artificial intelligence provides significant benefits to customers through personalization, reducing risks and costs, increasing employee productivity and enabling improvements.

Risk Management:
Risk management should reduce fraud by instantly analyzing transactions for suspicious patterns and assessing customer behavior. To provide suggestions to creditworthiness and risk assessors to reduce risk.

Portfolio Management:
Artificial intelligence systems and machine learning technologies create personalized portfolios based on customers' resource constraints, behaviors and preferences. Financial markets and artificial intelligence are about to usher in the next wave of the digital revolution. Therefore, artificial intelligence has changed many areas of the banking system, making money transfers safer and more efficient.

VIII. FINDINGS

1. Majority of respondents likely to use AI technology in banking system with 34.67%
2. Majority of respondents likely to use the areas of banking operations which AI is most impactful with 43.33%
3. Most of the respondents AI able to successfully replace human involvement in banking services with 60%
4. External communication the banking services that influence customers utilized the most of ATM withdrawals has ranked 1

IX. SUGGESTION

AI can be used in banking to automate customer service through chat bots, enhance fraud detection using machine learning, personalize financial offerings based on customer data, optimize loan approvals with predictive algorithms, streamline compliance processes with AI-driven regulatory technology, improve risk management by analyzing financial data in real-time, enhance cyber security through advanced threat detection systems, enable smarter investment strategies with AI-driven market analysis, improve operational efficiency through robotic process automation (RPA), and provide customers with tailored financial advice using AI-powered virtual assistants.

X. CONCLUSION:

The impact of AI in the banking sector can be observed in almost every aspect of financial institutions' operations. From reducing costs, automatic document processing and boosting profits to strengthening security, supporting decision-making, and delivering tailored customer experiences – artificial intelligence already helps with all of that. Therefore, we recommend that you implement AI as soon as possible.

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