The Impact Of Artificial Intelligence On Digital Banking Services Provided By The Indian Banks

Jyoti Mainaji Sonawane [1]
Research Scholar – Dr. Babasaheb Ambedkar Marathwada University Aurangabad (MS) India

Dr. Manik Waghmare [2]
Head Department of Commerce- Shri. A.B. College Deogaon,
Research Supervisor- Dr. Babasaheb Ambedkar Marathwada University Aurangabad (MS) India

Abstract: Artificial intelligence (AI) has transformed several industries in the modern period, pushing routine work into the domain of automation. This study explores the many subtleties of artificial intelligence and how it has affected the banking transactions digital world in a broad way. The study examines the various ways that artificial intelligence (AI) technology is influencing and changing digital ecosystems by utilizing secondary data. The research paper delves into the intricacies of AI's integration across the banking sectors, providing a thorough look at how it is changing conventional procedures and its profound impact on the customer satisfaction. Businesses are depending more and more on AI to automate processes, thus it's critical to understand the significant effects on the digital world. This study adds to the continuing conversation about the impact of AI by offering insightful guidance to stakeholders navigating the rapidly changing terrain of technological breakthroughs.

Keywords: Artificial Intelligence, AI, Digitalization, Banking

A) Introduction:

- The move to digital banking, particularly online and mobile banking, is the most pervasive trend in the financial services sector nowadays. Nowadays, with everything being so fast and convenient, customers don't want to walk into an actual bank office to complete their transactions. While banks are adding new services to draw in new consumers and keep hold of their current clientele, disruptive financial innovations are being introduced by startups and neo banks. Artificial Intelligence (AI) has the potential to completely transform the banking sector and the services that banks offer to their clientele, enhancing consumer satisfaction, productivity, and efficiency. Covid has expedited the shift towards digitalization and attracted even the most reticent digital users to the fold. The entire consumer experience is being transformed by the digital transformation, with 75–80 billion devices predicted to be online by 2025. People are demanding instant access to banking comfort, which is driving up the number of scams at an alarming rate. Many digital transactions occur daily as people utilise apps or online accounts to pay bills, withdraw cash,

deposit checks, and do a lot more. Artificial intelligence, or AI, is the umbrella term for a variety of tools and methods that allow machines to replicate or carry out operations like pattern recognition, learning, and problem-solving that would normally need human intelligence. This can involve methods such as expert systems, machine learning, deep learning, and natural language processing. Artificial intelligence can assist banks in reducing risks, tracking system vulnerabilities, and the exact adoption rate of AI in the banking sector varies greatly from bank to bank, making it difficult to pinpoint. While some banks have embraced AI more quickly than others and have launched a variety of AI-powered services, others have taken longer to do so. It is widely acknowledged that artificial intelligence (AI) has been used more frequently in the banking sector in recent years, and this trend is predicted to continue in the years to come. In 2019, 37% of banks reported adopting AI, and by 2020, at number had risen to 53% and was still rising, according to an Accenture survey.

B) Objective of the Study:

1. To present contemporary global trends of AI in impacting the Banking sector

2. To understand how the cyber security in Banking sector is being taken care by AI

3. To present benefits of AI in Digital Transactions of Banking

C) Research Methodology

This research is exclusively reliant on secondary sources of data, emphasizing an exploratory approach towards the research subject. The data is sourced from electronic journals, web portals, and textbooks, contributing to a comprehensive and in-depth exploration of the chosen topic.

D) Literature Review:

- A Research article emphasized on Artificial Intelligence and its applications in Indian Commercial Banks indicates that artificial intelligence (AI) will play a significant role in future success. AI has gained a better reputation when evaluated based on existing banking features; however, these features have taken center stage in today's real banking environment. Only a small number of banks have adopted new technology or started using AI at this moment. Even though artificial intelligence is still in its infancy, banks are shifting from traditional banking to more comfortable banking.   **(Suma & Anupama 2021)** [1]

- Another research study focusing on analyzing the Impact of Artificial Intelligence in Indian Banking Industries concluded, AI is progressively permeating the banking sector to strengthen financial services. During a period of social separation and quarantine, people are more inclined to transact and stay updated on their bank accounts online. Given these benefits, it is almost a given that most banks and other financial organizations would use AI to maintain their competitiveness and provide superior customer service. Additionally, as the number of manual workers declines, artificial intelligence plays a crucial part in guaranteeing that banks can efficiently serve their clientele.**(Padmanabhan & Princy 2021)** [2]

- In one of the Analytical study on AI and its impact on the financial sector, it was observed that the "artificial intelligence (AI)" revolution is driving a profound shift in the financial sector, and the banking sector is changing at a rate never seen before. Numerous artificial intelligence technologies have been implemented in various domains within the banking industry, like as Modern financial institutions contribute to their own growth and expansion by offering cutting-edge banking services. Artificial Intelligence (AI) can help with effective transaction monitoring, which includes tracking anomalous transactions. AI can also help create a single, unified customer view across national and international databases. AI tools are also beneficial for the study of official documents. It facilitates the retrieval of data regarding shareholders with ownership interests. For the most part, the need for customer service executives has been almost removed by digital means. The extensive use of digital banking has led to the availability of numerous new data sources that offer crucial customer insight. **(Kalachevali, 2023)** [3]

- This research study Banking Sector Transformation - Artificial Intelligence In The Modern Digital Era shows that although artificial intelligence (AI) is widely used in the Indian financial markets, there is still room for growth and development in this unexplored area. AI is still in its infancy and is only being applied in a small number of contexts. Fintech is the newest technology utilized in finance. Artificial Intelligence is the age approach to thwart detections of banking fraud. Frauds can no longer be manually identified. Business decision-makers at AI banks think that technology can benefit and add value to the company now and in the future. AI has commercial possibilities that banks may benefit from. It facilitates the building of a credit profile and may result in quicker loan processing. Trading has greatly benefited from AI the clientele of investment banking, particularly in wealth management. Additionally, AI has optimized stock trades for specific clients, making things easier for them. The usage of AI has simplified customer support. Compared to earlier, there is more personalization, frequent engagement, and quicker response time.

Additionally, AI enables customers to connect and respond to inquiries around-the-clock. Global financial firms' strategy have undergone a paradigm shift as a result of artificial intelligence. These days, AI is applied across many different sectors. These days, every company is making every effort to employ business intelligence. **(Dr Sunitha.B.K, Nukala Jahnavi, Khushi V Tibrewal, 2020)** [4]

- Customer experience is one of the imperative of AI technology, keeping this notion a research article underscored that, AI technologies have the power to change the physical to digital employee and consumer experience. Using the most recent AI solutions with banking operations is essential. The phrase cloud indicates that bulk transactions, CRM, risk monitoring, and loan processing are the main use cases in middle and back-end banking. The majority of Indian banks have begun utilizing chatbots on their own online banking platforms to engage with customers. Customers commonly ask a series of typical queries when exploring banking websites, which might be addressed more effectively. The most common use-case for chatbot support is customer service. In a similar vein, offers and discounts rank well among the topics that chatbots propose. Meeting each customer's specific needs would boost the bank's brand value in addition to increasing customer engagement. There is a strong connection between offers and discounts and customer service. It has been demonstrated that those who use chatbots for customer service support are more likely to use them for offer and discount recommendations. Enhancing the Chatbot's capabilities in these two areas may boost consumer interest while also boosting the bank's revenue .Banks may follow different strategies of implementing Artificial Intelligence within their processes. **(Chandrima & Manish, 2022)** [5]

- AI is becoming more and more popular. Artificial intelligence thus has a promising future in the financial industry. Customers may now conduct transactions anytime, anyplace, and without having to wait in queue at the bank thanks to the development of artificial intelligence (AI). The aim of artificial intelligence is to provide effective and time-saving services along with individualised, superior customer satisfaction. **(Solani et al 2022)** [6]

E) The Indian Banking Sector

- The Indian banking industry has been dealing with a number of difficulties and major transformations. Concerns included non-performing assets (NPAs) and the stability of some banks' finances. To address these problems, the Reserve Bank of India (RBI) has been putting these strategies into practice, including the introduction of frameworks for the resolution of stressed

assets. Two other significant developments that contributed to the revolution in the banking industry were the growing use of digital technologies and the growing influence of fintech.

Following are the types of different generations in India each having relevance as per the period post- independence of the country;

I Generation Banking

Prior to 1947, when the Swadeshi Movement took place, many small, local banks were established. These banks were mostly unsuccessful as a result of internal frauds, linked lending, and the combination of banking and commercial operations.   A restricted number of corporate families or groups were the target of resource consolidation made possible by Indian banks during the Second Generation of Banking (1947–1967), which resulted in the flow of credit to the farm sector being neglected.

II Generation Banking (1947-1967)

Indian banks made it possible for resources that were mobilised through retail deposits to be concentrated towards a small number of business families or groups, so obstructing the flow of credit to the agriculture industry.

III Generation Banking (1967–1991)

Through the nationalization of 20 significant private banks in two stages (1969 and 1980) and the introduction of priority sector financing in 1972, the government effectively broke the bond between business and banks. These policies facilitated the transition from "class banking" to "mass banking," catalyzing a favorable influence on the extensive expansion of branch networks in rural India. Additionally, they played a crucial role in mobilizing substantial public deposits and boosting credit flow to the agricultural and associated industries.

IV Generation (1991–2014)

Significant reforms were put into place during this time, such as the granting of new licences to foreign and private banks in an effort to increase efficiency, boost production, and bring competition.   Utilising technology, enacting prudential standards, and providing functional autonomy along with operational flexibility were all part of these adjustments.

V Generation- 2014 Onwards

Digital payments and mobile banking: Promoting digital payments and mobile banking has been a top priority for Indian banks. The use of Unified Payments Interface (UPI), which enables quick and easy money transfers between banks, has grown significantly. Internet Banking and Online Services: Indian banks have made a lot of improvements to its online banking offerings, which now enable users to do a lot of tasks online, such as paying bills and checking account balances. Banks are using machine learning (ML) and artificial intelligence (AI) to detect fraud, score credit, and provide customer care. Artificial intelligence (AI)-powered chatbots and virtual assistants have been launched to offer prompt and effective customer service. Blockchain Technology: In order to facilitate safe and transparent transactions, certain banks are investigating blockchain technology.

F) How the Banking Sector is Leveraging AI for better customer Experience

AI that Processes Natural Language : A chatbot that users can communicate with via a messaging app or banking app is an example of a conversational experience in banking. A variety of consumer questions, including those about account balances, transaction histories, and account management, might be taught to the chatbot to comprehend and reply to. A consumer may inquire of the chatbot, "What is my account balance?" as an example. After that, the chatbot would interpret the query using natural language processing, obtain the user's account data, and reply with the current balance. Additional instances of Conversational Experience encompass Contact Centre Modernization, Voice Assistant, and so on.

AI Capable of Handling Natural Language : A conversational banking experience could be using a chatbot that users can interact with through a messaging or banking app. A wide range of customer inquiries, such as those about account balances, transaction histories, and account management, may be programmed to the chatbot's understanding and response.

Email phishing: This kind of cybercrime involves attackers sending people bogus emails with links to websites. Because these emails appear to be genuine and legitimate, anyone may misinterpret them and enter sensitive information that puts them at danger. One can use machine learning techniques to automatically identify phishing emails in order to prevent these kinds of occurrences. These techniques are based on traditional machine learning algorithms for regression and classification.

Credit card fraud : Credit card fraud is becoming more prevalent in a world that is becoming more digital. This kind of financial theft is using unprotected internet connections to steal credit card or debit card details. Algorithms for machine learning assist in distinguishing between legitimate and illicit behaviours. An ML model can notify the bank and take the appropriate action to counter any attempts to game the system.

Mobile fraud : Integrating machine learning into anti-fraud systems is especially important as payment methods move from physical cards to mobile phones. NFC chips are increasingly found in smartphones, allowing customers to pay for goods using only their phones. This implies that cyberthreats and hacking are a possibility for your smartphone. In the finance industry, machine learning is a useful tool for identifying unusual activity for each user and lowering the risk of mobile fraud.

Identity theft : When a cybercriminal gets involved, very sensitive information such as login credentials, bank account information, user names, and passwords is much at risk. Identity theft is dangerous for businesses as well as for individuals. In order to make sure that all fraud cases are discovered, machine learning in finance assists with the examination and real-time comparison of identity documents, such as passports and driver's licences, against secure databases. Additionally, by enabling biometric scanning and face recognition, machine learning (ML) can be utilised to combat false IDs. Theft of identity and insurance fraud.

G) Conclusion

It is challenging to determine the precise adoption rate of AI in the banking industry because it differs significantly between banks. Certain banks have adopted artificial intelligence (AI) faster than others and have introduced a range of AI-powered services; other banks have taken longer. Artificial intelligence (AI) has been applied in the banking industry more recently, as is generally accepted, and this trend is expected to continue in the years to come. According to an Accenture survey, 37% of banks reported using AI in **2019**, and by **2020,** that number had increased to 53% and was continuing growing. Meeting customer experience expectations will be a major driving force behind development in the banking and financial services industries in 2023 and beyond. The primary features of this open banking trend include the requirement for financial institutions to offer an Omni channel banking experience, which allows users to switch between their actions (online, mobile, and in-person) without having to start the action from scratch each time. The ability to personalize the user experience and build interactions on prior experiences, requirements, and needs of the consumer are critical for this to function. In order to offer a completely customized experience, the bank requires complete and current data that it can use to leverage AI and machine learning capabilities. This ability will produce insights that improve our understanding of client needs and enable more focused product and service

marketing As a result, 70% of banks are anticipating incorporating AI into mobile banking apps and seizing the fantastic prospects that AI presents to the banking sector.

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