

## **ARTIFICIAL INTELLIGENCE (AI): A DOUBLE-EDGED SWORD FOR FINANCIAL INCLUSION IN INDIA**

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**Abstract**—India is presently observed as an “Optimistic Spot” in the world-wide economy, due to outstanding performance in key economies. The development pattern in India is the outcome of various transformations such as Digital Revolution, Macroeconomic stability, up gradation in infrastructure, resilience in service sector etc. In Present time, India had also jumped from traditional banking technologies by concentrating on DPI through Unified Payments Interface (UPI), Financial Inclusion and India Stack etc. The financial inclusion refers to incorporation of unbanked and underserved population through JAM Trinity which includes opening of bank accounts of rural people with zero balance linked with their Aadhaar Number and mobile. In present “Financial Inclusion” works as a foundational stone for financial development of our country. As up to maximum extent traditional banking system cover the underserved area but now Artificial Intelligence (AI) work as a promoter tool in this direction. The current research observes the role of AI driven innovative technology on financial inclusion by using secondary data. The paper also examines the benefits and risk present in usage of AI. The AI system considerably improves the accessibility of banking facilities in rural, underserved area and workers of Informal sector to remove the disparity on geographical, economic and demographic basis. This activity ensures the smoothness and avoids biasness in growth pattern. The study also inspects how Artificial Intelligence (AI) technology plays a vital role in associating this gap by addressing some crucial barriers like absence of credit history, high processing costs and differences in languages.

**Keywords:** *Artificial Intelligence, Digital Revolution, Financial Inclusion, Impact, India.*

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### **INTRODUCTION**

The Artificial Intelligence system primarily works as an assistant for official tasks for acquiring efficiency in performing operations, mechanisation of office level work, handling big data, recognition of Patterns etc. at global level. But for India it is tough to get this expensive hardware and software system for fulfilling the requirements of every Indian Citizen. But journey of India population regarding usage about AI has started in 2018 when “NITI Aayog” released out the “National Strategy for Artificial Intelligence” in 2018. As per this strategy India planned to make AI model for all. India preferred to use AI to resolve some genuine problems such as Crop Prediction, Rural Healthcare and Financial Literacy and also to maintain effectiveness of “Digital Public Infrastructure” using AI rather than making profit. In January 2026, India had entered in the new phase about “Industrialization of AI”. Several new AI-Models such as “Bharat Gen, Bhashini” set to introduced in “India-AI impact Summit” in future. The technology moved from “Chat bots” to “AI Agents” that also help in work in financial institutions etc. As every industry in India get positive impact from introduction of AI but there are five key sectors that get more benefit are “Banking, Insurance and Financial services sectors”, AI for all in agriculture field, Work as “force Multiplier” in healthcare sector, perform well in “Manufacturing sector through Make in India”, “AI tutor and “Bhashini AI Layer” in education sector etc. As per RBI report efficiency of Bank and financial institutions has increased by 46% because AI primarily helpful for these institutions in “Financial Inclusion and Fraud Prevention”. The term Financial Inclusion demarcated as “Availability and Equality” of chances to “Unbanked and Underserved people” to avail financial services. In India, even the “Pradhan Mantri Jan Dhan Yojna” get outstanding success in opening of bank accounts of underserved people but yet it leftover a challenge in this area. But the entry of AI work forward as a keystone in “Having Bank Account” and for providing other financial services such as insurance, investments and insurance etc. “Financial Inclusion” and “Artificial Intelligence (AI)” both serves as two-folded solution in combined way as Financial Inclusion explains the aim and AI is the way or device that ultimately make accessible to touch the “Last Mile”. The extent of Financial Inclusion in India was measured by “RBI FI-Index”.

Now AI works as a joiner and positively affects “Financial Inclusion” situation through expanding services to the unbanked area or cash based economy and in the informal sector persons (gig workers, farmers, Labourer and small vendors etc).

## **BACKGROUND OF THE STUDY**

In ancient time, “Indian Banking System” following “Brick and Mortar” way of Business with respect to grocery stores, financing and other activities but it does not include the informal sectors in case of providing credit facilities because they have no proof of “Formal Credit History”. But the era of digital revolution having combination of key components such as India Stack (Identity Layer, Payment Layer, and Data Layer), E-Commerce, and Emerging Technologies (Block Chain, IOT, Artificial Intelligence) change the way of doing business. As the population of India is increasing day by day then it is not possible to do the things physically at all level, therefore AI step up in this area. In the mission of “Financial Equality” from global perspective India has evolved in lead role or developed as a laboratory for pilot study for Digital Change. As in India this revolution has started from the “Digital India” mission who focuses on Identity and Payment layer but in current period the Intelligence layer is performing outstanding. The “Intelligence Layer” which includes “Artificial Intelligence Technique” has combined with wide scope. The present research focus on how well AI technique work for “Indian Financial Ecosystem” and in what ways it impacts the unbanked area for strengthening Financial Inclusion.

## **LITERATURE REVIEW**

After the reviewing of various research papers, organisations reports the summary are provided as follows:

**Lokeshwari et al. (2025)** identified a positive correlation between Artificial Intelligence and Financial Inclusion by using Structured Equation Modelling (SEM). But there should be more focus on further refining AI arrangement, internet access and literacy for emerging technologies to enhance AI growth in future. **Bhawnra and Singh (2024)** explains that different countries adopting Financial inclusion based strategy for getting growth with respect to financial and banking sector such as PMJDY and DBT schemes in India. It is explored that how AI technology is used in Indian commercial banks for fulfilling the Financial Inclusion objective at wide level and it is identified that AI is helpful in Financial Inclusion by various measures such as lowering credit cost, increasing competition and violation of geographical barriers. **Yasir et al. (2022)** Investigates the role of AI related to positive effect on financial sector through financial inclusion and it is found that it is only effective if there was supporting infrastructure and regulatory framework for implementation of AI exists.

**Kshetri (2021)** Investigated that many developing countries facing the issues regarding lacking of access of financial services but due to promotion of financial inclusion improvement is arise in standard of living of unbanked or underserved people. The AI technique performs as a game changes in respect of access of financial services to bank less people. Some another benefits of AI is increase in consumer satisfaction, reduction in money-laundering, availability of online financial services, risk assessment etc.

## **RESEARCH METHODOLOGY**

The research is “Exploratory and Analytical” in nature because the paper follows the “Desk-Based Research Approach” in which data for five years starting from 2021 to 2025 includes the launch of RBI- FI index in 2021 as base and other key turning years. The data is combined from several confident sources such as RBI report on FI index, NPCI Report, NITI Aayog report, academic journals etc. The primary aim of research is to analyse the effect of AI on Financial Inclusion, where AI rollout is independent variable and upsurge in Financial Inclusion (FI) statistics about India is dependent variable. The “Content Analysis” tool is used for analysis purpose.

## **RESULTS**

The Artificial Intelligence has several impacts on Financial Inclusion such as Quantitative and qualitative impact (Efficiency in distribution of credit to medium small scale enterprises and other informal sectors, fraud avoidance, provide the facility of linguistic effect) etc. The quantitative impact of AI on Financial inclusion is primarily proved or confirmed on the basis of “RBI Financial Inclusion Index which increased to 67 % in March 2025 as compared to 2024 that was 64.2% and this hike is due to high level of AI adoption because of its better quality even the infrastructure is stable. The AI play active role to enhance financial inclusion by conversion of inactive “Jan Dhan Accounts” into active bank accounts so that transactions can done. The existence of AI technology facilitate credit or loan to underserved population by following “Alternative Credit Scoring(ACS)” system which does not require any credit history of a person and enterprise for grant loan. It measures their repay capacity on different basis which hike loan approval rate of unbanked people and business. AI augmented the quality metrics of financial inclusion by building trust and security of people by

preventing them from fraudulent activities because this technique detects fraud with high percentage with the help of “Real Time Agentic Fraud Shield” and this detection has positive impact on our economy. India AI system also perform better as a “Language Platform” as it is solely handled queries of people of informal sector regarding subsidies and loan by using “AI Chat Bot” which minimise the knowledge gap for substantial portion of India’s population. Though language is not anymore obstacle in the path of Financial Inclusion because now AI focused on to make Voice recognition as a primary user interface for upcoming users by launching of “Bhashini(Voice First AI)”.

## DISCUSSION

The outcomes of the current study indicates a major transition in Indian financial background because of shift from a “Data- Centric or Information-Rich” country to a “Analytics-Oriented” and AI performs as the key technology between the casual and formal Indian economic system. As from the results section it is found that “RBI FI-Index” increase in 2025 because before 2021 the PMJDY scheme only focused on opening of bank account but use of bank account was increased after 2021 because in this situation AI work as a push technology where unbanked people get each type of advice through agents in AI framework. Further, it is identified that AI has overcome from a lot of traditional hurdles such as limitations of Credit facility so loan approval rate was negligible but after AI this rate increase because AI shift it to “Alternative Credit Scoring” where loan is provided on the basis of assets a person holds but now in AI lending facilities is based on the cash flow pattern for different perspective, therefore situation of “Death of Credit Invisibility” arise. It is observed that AI is helpful in elimination of literacy hurdles exists in “Text- based Digital Banking” with the help of “Voice-Based AI” and “Kisan e-Mitra” that is preferably used to handle queries of rural people. This way of “Digital Banking” reduced the effort of people now they can direct ask their queries without the support of any agent or middlemen. This situation termed as “Linguistic Democratization” means accepting diverse languages instead of preference of one dominant dialect. But Indian govt. shows a contradictory behaviour regarding AI as one side it is an innovation that provides several benefits but another side that prefer to use AI have to follow some regulatory guidelines. Even AI prove as a “Magic bullet or “Rambaan” but there was also a “Flawed Side” of it with respect to inclusion because sometime AI generate the results which is “Algorithmic Biased” as it is based only on the information provided to it and there may be falsification in the records of online data availability and other flaws may be related to transparency and privacy in digital data.

## CONCLUSION

The current research determines that the incorporation of Artificial Intelligence (AI) at different strategic level is the key indicator for hike in the “RBI Financial Inclusion Index”. As it is observed that “JAM (JAN DHAN ADHAAR MOBILE) Trinity and DPI (DIGITAL PUBLIC INFRASTRUCTURE)” serves as a foundation for financial inclusion because access of bank accounts by bank less people done through these schemes but increase in “Quality and Usage” of these bank accounts made possible by AI technology. The objective to increase in availability of financial services to marginalized and downgraded sections of society through AI is attainable because this technique shift the lending system from collateral to ACS and also undertake many another changes. It also maximise financial inclusion goal by minimise the digital divide among unbanked people by introducing many options such as “Bhashini AI layer”, “Kisan e-Mitra”, “Robotic Process Automation”, “Biometric AI or e-KYC” etc. Therefore the current research highlights that AI provides the atmosphere of apparent, secure and accessible banking facilities at extensive level. But instead of all benefits there are some flaws also exists which interprets that obviously AI is performing as a Linchpin but it’s not cure for all.

## RECOMMENDATIONS

As per the current scenario, RBI should focus on intensifying a controlled environment for fintech Innovation to check AI models for enhancing Financial Inclusion. Business Institutions should obliged to adopt “Explainable AI” so that inequitable practices can be avoided and at last all regulatory act should be strengthened timely to evade the misuse of personal data of any person and SME organisation.

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