



A STUDY ON TRANSFORMATIVE IMPACT OF ARTIFICIAL INTELLIGENCE ON RESHAPING OF FINANCIAL SECTOR IN INDIA

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ABSTRACT

In India, financial sector is undergoing as a transformation over the period and it is a leader in embracing new technologies. Financial institutions are using AI for the purpose of generation of AI, reduction of operating cost, automation of manual process, increase security and privacy, transparency, detection frauds, digital payments, reducing risks, KYC process, minimizing AML and reducing credit risks etc. These all reforms are leading to the accelerating financial inclusion. Therefore, present study has focused on the describing the transformative effect of AI on the reshaping of the financial sector in the India. The study has thrown light on how different financial sectors are using AI models, advantages and challenges in usage of AI.

Key words: AI, Financial industry, AI in insurance, AI NBFC,

1. INTRODUCTION

Artificial intelligence is revolutionary change in technology world which is highly beneficial to the business, customers, public, government and other stakeholders. AI was defined as effective utilization of science and engineering to make intelligent machines. AI is considered as replication of intelligence of human being in machines. In present technology dominated world every nation is investing huge funds in AI based research and development activities since last few years particularly with wide spread of digital technologies and increased algorithm capabilities. In recent business world AI usage is increasing in day to day business operation. It is expected that AI startups are expected to create \$ 500 billion market value by 2030. In digital revolution the next spectrum was triggered by the Artificial Intelligence. Every major country including emerging markets in the world is investing in AI associated research and development projects. In this direction, Indian financial sector is transforming gradually towards becoming automated and artificial intelligence-driven sector faster than other sectors. Indian financial sector in the entered in digital marathon phase with Artificial Intelligence (AI) along with the advent of the internet and has taken organisations through several stages of digitalisation. The

emergence of AI is expanding the wings of the industry, weakening the traditional financial institutions and also leads to the opening the door to more innovations and new financial products and services

2. REVIEW OF LITERATURE:

Chandrima Bhattacharya & Manish Sinha (2022) studied innovation in banking sector with integration of AI and described that usage of Chat bot assistance led to great customer satisfaction in the banking sector. The study also expressed opinion that AI technology has capable to bring rapid changes employee and customer experiences. Anirvan Vinod, Shreya Ghosh (2021) study shed lights on usage of block chain technology and AI in banking sector and expressed usage of AI and block chain technology led to greater transparency and security in financial innovation and eliminated computerised problems. Similarly, Vinod & Ghosh (2021) study further supported that Fin-tech firms working with combination of AI and block chain technology will emerge as crucial business model in the future. Shiv Ranjan (2020) study found that, AI usage in financial sector leads to greater improvement in working efficiency and decision making. Ambika (2020) study proved that AI adoption led to higher productivity in the banks of ICICI, AXIS, Kotak, Yes bank. However, the study stated that security and vulnerability are major concerns in AI adoption in banking sector.

3. OBJECTIVES OF THE STUDY: The present study is aimed

- To describe the various models of AI used in four financial sectors in India
- To examine the impact of AI on the financial sector in India
- To study the challenges of AI on the financial sector in India

4. AI MODELS USING IN FINANCIAL SECTOR IN INDIA

- **IN INSURANCE SECTOR:** In insurance sector, AI model like AI decision engine, power video stream line, auto insurance activities, is implemented to perform the functions like development of customized products, more engagement of customer and upselling, claim automation, fraud detection and categorization, to analyze the user upload videos in case of vehicle damages, etc. In present health insurance segment 30 percent pre-authorization approvals are performing by AI. The studies proved that AI improved 50 percent of their decision making and significant improved customer experience.
- **NBFC SECTOR:** In this sector AI are using such as mobile data, GST data, product interaction data and social data along with ML techniques for the purpose of assessing the applicant's creditworthiness. In this sector AI emerged focused areas are collection analytics, credit scoring, detection and mitigation of frauds and risks and increasing customer engagement.
- **ASSET AND WEALTH MANAGEMENT SECTOR:** In this sector chat bots, AI enabled digital advertising, natural language processing NLP are widely used AI tools. They are using for the purposes of personalized advices, construction of portfolios, to understand customer, mitigate the risk, extract market news, social sentiment, analysis of securities, investment choices etc. However, still human element plays dominant role in this segment and AI use at beginning stage and limited to some non-core functions.

- **PAYMENT SECTOR:** In India, in total payment transaction digital payment accounts to more than 60 percent in 2025. AI usage in payment sector is at very advance stage in the functions like customer transaction protection, to improvement customer experience, onboarding of people, digital literacy providing, curbing frauds and other risks. AI tools using chat bot, AI powered routing engine, vehicle scanning, signature verification etc.

5. **IMPACT OF AI ON THE FINANCIAL SECTOR:** It is observed from various research studies on the topic to analyze the effect of AI on the financial sector and revealed that following effects.

- **OPERATIONAL EFFICIENCY:** The automation in AI streamlines the many operation processes such as loan process, fraud detection and customer service. It also paly significant role in wealth management and increase potentiality of democratize services and improves the operational efficiency. In AI repetitive tasks can performed with high accuracy and transparency which leads to high operational efficiency this process is done through automation.
- **FRAUD DETECTION AND RISK MANAGEMENT:** The Company like JPMG reported that AI could reduce fraud rate and improved payment validation screening. This to 20 drop in account validation rejection rate and saved significant proportion of cost on operations. Further AI algorithms could predict credit worthiness of the borrowers which result in low default rate, risk provisions, and climb profit margins. Thus, it observed AI is effect tool in risk assessment, fraud detection and cost saving.
- **REVENUE GENERATION:** The personalization of financial products and services is more possible with use of AI. This further increase customer loyalty and satisfaction. AI tools can effectively identify the new business opportunities, helps in optimization of market campaigns and potentially boost the company revenue and profits.
- **INVESTMENT FUNCTIONALITY:** The role of AI in investment functions is at nascent stage. Present AI tools are using in dynamic adjustment of portfolios as per risk tolerance limits. AI Robo power advisory models are now using in real time to manage markets, operational risks and give investment advisories.
- **Customer experience.** The use of AI wills simply the various functions in financial and banking sector. It saves the time, money and efforts. This leads to greater transparency in transaction along with speed and highly accuracy. This also leads reduction in mistakes. All these leads to good customer experience and satisfaction.
- **COMPETITIVE OPPORTUNITIES.** AI adoption rate between the companies with in the same industries creates competitive opportunities. Companies which are using advanced and variety of AI models can give strong competition to the other players in the industry by reporting good customer base, revenue, cost reduction, profits, market expansion and ROI
- **REGULATORY COMPLIANCE:** The meeting of regulation compliance is greater challenge which would be addressed by the effective use of AI models. The Reg-tech model of AI firms offering various services to the companies not to violate the regulatory norms and

improve the corporate governance, reduces penalty, actions and fees and other regulatory actions by the regulatory bodies.

6. CHALLENGES OF AI IN THE FINANCIAL SECTOR

- **DATA PRIVACY:** Data privacy is one of the primary challenges in AI models. The data consists of personal and financial details of the customers along with CVV details, bank account, aadhar number, digital signature, etc. The maintenance of confidentiality of data is highly required. If any data hiked then it may result into huge financial loss and damage to the reputation of the company. In 2023, Samsung confidential data leaked by employees by using Chat GPT, which result it ban on generative AI in Samsung. In other case, customer manipulated the chat GPT and received huge amount than claimed which result in huge financial loss to Air canda.
- **LACK OF MODEL INTERPRETATION:** It is very challenging to interpret the AI models exclusively ML, large scale operations and Large Language Models (LLM) due to black box complexity, high data dimensionality, low standardization. These are result in decision making difficulty, fairness and build user trust.
- **CYBER SECURITY:** AI can act as doubt side weapon one side it defense existing system from cyber-attacks, on the other hand, it has capability to attack on the existing software with more sophisticated and evasive. AI is both offensive and defensive in nature. AI can create and execute highly personalized and effective cyber-attacks such as autonomous malware, Generative AI, phishing and social engineering and campaigns.
- **TRANSPARENCY IN ALGARITHAM:** AI models learn from the data they are trained on. If this data contains biases the AI system can perpetuate or even amplify those biases. In a cyber-security context, this could result in certain user groups being unfairly flagged or legitimate activities being misidentified as threats due to biased historical data. Addressing data bias is essential for equitable security.
- **BIASES:** In India, financial organisations adopted AI are subject to vulnerable to biases which feeds on data due to poor representation of minority populations in a data set or encoding of human judgement and bias into the training data itself. Optimal functioning of AI would thus require data scientists to employ proper modelling techniques and receive data ethics training. This should be backed by ethical and managerial considerations.

7. CONCLUSION:

Artificial intelligence (AI) has become an important topic of consideration in business. The financial services industry in India is no exception, and players are using AI to drive innovation and make better decisions. T These all reforms are leading to the accelerating financial inclusion. Therefore, present study has focused on the describing the transformative effect of AI on the reshaping of the financial sector in the India. The study has thrown light on how different financial sectors are using AI models, advantages and challenges in usage of AI. It is concludes that effective utilization of AI promise the industry growth and address the various challenges which are unsolved in the industry.

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