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The Impact of Artificial Intelligence on Financial Decisions and the Indian Economy

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Abstract-- study looks at artificial intelligence's (AI) increasing impact on Indian financial decision-making and its broader implications for the Indian economy. AI technologies are increasingly being adopted across banking, insurance, investment, and fintech sectors. These innovations are enhancing operational efficiency, improving financial inclusion, and reshaping consumer behavior. But issues like algorithmic prejudice, data privacy, and employment displacement need to be addressed through policy support and regulatory monitoring. The study provides an in-depth analysis of current applications, economic impacts, and future prospects.

Keywords-- Artificial Intelligence, Fintech, Financial Decision-Making, Economic Impact

I. INTRODUCTION

One of the most revolutionary technologies of the twenty-first century, artificial intelligence (AI) is changing economies, industries, and decision-making processes all over the world. The concept of artificial intelligence emerged in the mid-20th century, when researchers such as Alan Turing and John McCarthy initiated investigations into the development of machines capable of emulating human intelligence. Over the decades, advancements in computing power, data analytics, and machine learning have propelled AI from theoretical research to practical applications that influence nearly every sector of the modern economy.

In the financial domain, AI has completely changed how decisions are made by providing data-driven algorithms that can instantly analyse enormous volumes of data. AI is now used by financial organisations for fraud detection, algorithmic trading, credit risk assessment, automated customer support, and customised financial planning. This technological shift has enhanced efficiency, reduced human error, and enabled faster and more informed financial decisions.

In India, the economy has been significantly impacted by the incorporation of AI into the financial sector. The country's rapidly growing fintech sector, supported by government initiatives like *Digital India* and *AI for All*, is leveraging AI to improve financial inclusion, streamline banking operations, and foster economic growth.

However, these developments also present issues including the need for digital literacy, data privacy concerns, and technological unemployment.

Thus, understanding the origin of AI and its effects on financial decision-making is crucial to comprehending how this technology is shaping the trajectory of the Indian economy—balancing opportunities for innovation with the responsibility of ensuring equitable and sustainable growth.

The present digital economy now relies heavily on artificial intelligence (AI), transforming how financial institutions operate and how individuals make financial decisions. In a developing country like India, the integration of AI in finance holds the potential to accelerate economic growth, bridge the financial inclusion gap, and modernize public financial management.

II. LITERATURE REVIEW

Recent global studies (PwC, McKinsey, IMF) have highlighted the productivity gains and economic growth potential linked to AI adoption. Indian-focused research by NITI Aayog and academic institutions has emphasized AI's role in fostering inclusive financial systems and boosting digital infrastructure.

Financial services are rapidly incorporating machine learning (ML) and artificial intelligence (AI). A holistic review by Sayari et al. classifies Cybersecurity, customer service, and financial management *is the three key areas of AI applications in banking*. Their review covers advances from 2018-2023 and highlights opportunities and risks (e.g., regulatory, bias) in deploying AI in finance.

A recent paper of Kumar & Renuka (2025) discusses how AI automates tasks, enables predictive modelling and real-time risk assessment at both individual and institutional levels, and also flags ethical concerns and over-reliance on algorithms.

The above works establish the conceptual shift from human-based decisions to data-driven, algorithmic systems in finance, pointing to the ability of AI to process large datasets, identify patterns, and support faster decision-making.

In their study “AI and Finance: A Study of Stakeholder Perceptions on Operational and Experiential Evolution”, Zaffer, Thadathil&Wagh (India) survey 153 respondents and find that Improved predictive analytics, individualised financial services, and operational efficiency are among the perceived advantages of AI; nonetheless, there are issues about cybersecurity risk, job market disruption, and a lack of regulation.

The paper “The Role of Artificial Intelligence in Enhancing Financial Decision-Making for Small and Medium Enterprises (SMEs)” (Scaria&Sengottaiyan) explores how AI tools (predictive analytics, risk assessment, automation) help SMEs optimise cash-flow, manage risk, and make better financial decisions.

While many studies focus on firm-level decision making (investment strategies, portfolio optimisation, credit risk), the holistic review (Sayari et al.) emphasises that with AI adoption come systemic risks: algorithmic bias, data-quality issues, structural concentration, regulatory lag.

The Indian-context study “The Effect of Artificial Intelligence on Digital Financial Inclusion in India” by Sinha, Kumar & Siddharth (2023) explores how AI can promote digital financial inclusion in India. They examine the literature to demonstrate how AI gives marginalised communities access to digital financial services, but infrastructure, data, and regulatory preparedness continue to be obstacles.

Dwivedi & Sahoo (2025) in “Artificial Intelligence in Banking: Shaping New Paths for Financial Inclusion in India” analyse AI adoption in Indian banking—how AI can deliver personalized, accessible financial services, overcome barriers like geography, and credit history for under-banked populations. They also highlight infrastructural & data privacy challenges.

The review of fintech trends in India (via a news summary of survey by PwC India) shows that 90% of financial institutions in India are focusing on AI/Generative AI as primary innovation enablers, with 84% emphasizing customer experience and engagement.

Although not strictly academic, these indicators suggest that AI adoption in India’s financial services has both a breadth (many institutions) and depth (customer-centric innovation) dimension.

III. AI IN FINANCIAL DECISION-MAKING IN INDIA

AI (Artificial Intelligence) plays an increasingly important role in **financial decision-making in India**, influencing everything from personal finance to corporate strategy and public policy.

Below is a structured overview of how AI is shaping financial decisions in the Indian context:

1. Banking and Credit Decisions

AI applications:

- **Credit Scoring:** Traditional credit scoring (based on CIBIL data) is now supplemented by AI models that use alternative data — such as transaction history, mobile payments, utility bills, and social media behavior — to assess creditworthiness, e.g. **Lendingkart**, **KreditBee**, and **Bajaj Finserv** use AI to offer instant loans and assess risk for customers without formal credit histories.
- **Fraud Recognition:** AI systems detect suspicious transactions in real-time using pattern recognition and anomaly detection, e.g. **HDFC Bank** and **ICICI Bank** employ AI-driven fraud monitoring systems.

2. Investment and Wealth Management

AI applications:

- **Robo-Advisors:** Platforms like **Groww**, **INDmoney**, and **ET Money** use AI to recommend mutual funds, stocks, or portfolio allocations based on investor profiles and market conditions.
- **Algorithmic Trading:** AI algorithms analyze massive datasets and execute transactions quickly using sentiment analysis and forecasting models. Major firms (like **Zerodha** and **Upstox**) use AI to assist retail traders with insights and trend analysis.

3. Personal Financial Planning

AI applications:

- Chatbots and virtual assistants (e.g., **HDFC’s EVA**, **SBI’s SIA**) help customers manage savings, set budgets, and get real-time financial advice.
- AI analyzes spending patterns to suggest personalized savings goals or investment strategies.

4. Insurance (InsurTech)

AI applications:

- **Risk Assessment:** AI models help insurers calculate premiums more accurately using behavioral and demographic data.
- **Claims Processing:** Automation speeds up claim settlement through image recognition and document verification. **Policybazaar** and **Acko** use AI for faster underwriting and fraud detection.

5. Government and Regulatory Use

AI applications:

- **Financial Inclusion:** AI is helping bring the unbanked population into the financial system by assessing credit risk without traditional documents. Used in **PMJDY** and **Digital India** initiatives.
- **Tax Compliance and Monitoring:** AI tools used by the **Income Tax Department** detect tax evasion patterns.
- **Policy Modeling:** AI-driven simulations assist policymakers in forecasting economic trends and designing welfare programs.

6. Corporate and SME Financial Decisions

AI applications:

- **Forecasting & Budgeting:** Companies use AI to predict demand, manage cash flow, and optimize resource allocation.
- **Risk Management:** AI models help identify financial risks like currency fluctuations or supply chain disruptions.

7. Challenges & Ethical Considerations

- **Data Privacy:** Ensuring financial data is secure and used responsibly (especially under India's DPDP Act 2023).
- **Bias in AI Models:** AI decisions may reflect data biases, leading to unfair lending or investment outcomes.
- **Skill Gaps:** Financial professionals must be trained in AI literacy.
- **Regulation:** The Reserve Bank of India (RBI) and SEBI are still refining AI governance frameworks.

IV. CONSUMER DECISION-MAKING

Artificial Intelligence (AI) is transforming the way consumers make decisions in today's digital economy. From choosing what to buy, where to invest, or how to spend, AI influences nearly every step of the consumer decision-making process through data analysis, personalization, and predictive technology.

1. Understanding Consumer Behavior

AI helps companies collect and analyze massive amounts of data from online searches, social media, browsing history, and past purchases.

By identifying patterns and preferences, businesses can understand:

- What consumers want
- When they are likely to buy
- What factors influence their choices

This allows brands to design more effective marketing and recommendation strategies.

2. Personalization and Recommendations

AI-driven recommendation systems (like those on **Amazon**, **Netflix**, or **Spotify**) investigate user conduct to advice products or content that aligns with individual interests.

- **Example:** When you browse for a phone, AI shows accessories, protection plans, or similar models that fit your budget.

This personalization simplifies decision-making by reducing information overload.

3. Predictive Analytics

AI uses predictive analytics to forecast what consumers are likely to purchase next.

- **Retailers** use this to plan promotions.
- **Banks and FinTechs** predict consumer financial needs, such as loans or investment options. This makes consumer choices more convenient and timely.

4. Chatbots and Virtual Assistants

AI-powered assistants like **Siri**, **Alexa**, or **ChatGPT** help consumers gather information, compare options, and make informed decisions quickly.

In e-commerce, chatbots assist with:

- Product queries
- Order tracking
- Personalized offers

This creates a smoother and more interactive decision journey.

5. Emotion and Sentiment Analysis

AI tools can interpret consumer emotions from reviews, social media posts, or facial expressions. Marketers use these insights to:

- Adjust advertising tone
- Improve customer experience
- Build trust-based engagement

6. Influence and Ethics

While AI makes decisions easier, it also raises concerns about **manipulation** and **privacy**. Personalized ads and algorithms can subtly steer consumer choices, sometimes limiting independent decision-making.

Ethical AI design and transparency are therefore essential.

AI has become an invisible yet powerful partner in consumer decision-making. It enhances convenience, personalization, and satisfaction, but also calls for responsible use. As technology advances, a balance between **AI-driven guidance** and **human autonomy** will define the future of smart consumer choices.

V. ECONOMIC IMPACT OF ARTIFICIAL INTELLIGENCE (AI) IN INDIA

One of the most revolutionary technologies propelling India's digital and economic development is artificial intelligence (AI). From healthcare and agriculture to banking, education, and manufacturing, AI is reshaping industries, boosting productivity, and creating new opportunities for innovation and employment.

1. Contribution to GDP Growth

AI is projected to add **up to USD 500 billion to GDP of India by 2025**, accounting for nearly **10% of India's economic growth** (according to NASSCOM and Accenture reports). This growth comes from improved efficiency, automation, and data-driven decision-making across key sectors.

2. Boost to Key Sectors

- **Agriculture:** AI-driven precision farming, crop monitoring, and weather prediction help farmers increase yields and reduce losses.
- **Healthcare:** AI supports early diagnosis, telemedicine, and personalized treatment, making healthcare more accessible and affordable.
- **Manufacturing:** Smart factories and predictive maintenance enhance production efficiency under the *Make in India* initiative.
- **Financial Services:** AI is used by FinTech firms for customer service automation, credit scoring, and fraud detection.
- **Education:** AI-based learning tools personalize education and bridge skill gaps, especially in rural areas.

3. Employment and Skill Development

AI creates new jobs in data science, robotics, cyber security, and machine learning while automating repetitive roles.

To prepare the workforce, India has launched programs like:

- **Responsible AI for Youth (by MeitY & NASSCOM)**
- **AI skilling initiatives** by platforms like NIIT, Coursera, and IITs

While some low-skill jobs may decline, the **net employment impact** is expected to be positive through skill transformation.

4. Start-up Ecosystem and Innovation

India has become a global AI innovation hub with over **3,000 AI start-ups** (as of 2025). Sectors leading this wave include:

- FinTech (e.g., Razorpay, Paytm AI Labs)
- HealthTech (e.g., Qure.ai)
- EdTech (e.g., BYJU'S, Vedantu)

Government initiatives like **Startup India** and **Digital India** encourage AI research and entrepreneurship.

5. Public Governance and Policy

AI enhances governance through smart infrastructure, traffic management, and digital public services. Projects like **Aadhaar**, **IndiaStack**, and **AI for Bharat** (NITI Aayog initiative) demonstrate how AI supports inclusive growth and efficient service delivery.

6. Positive Impacts

Despite its potential, AI has obstacles such as data security and privacy issues, a shortage of qualified workers, uneven digital infrastructure, and moral and legal dilemmas. For AI-led growth to be sustainable, these issues must be resolved.

- **Financial Inclusion:** AI allows micro-lending and financial services to reach rural and underserved populations.
- **Efficiency Gains:** Automation of back-office functions reduces costs and processing times.
- **Increased Investments:** AI-driven platforms attract more retail investors to equity markets.
- **Enhanced Public Finance:** Governments can use AI for tax fraud detection, subsidy targeting, and budgeting.

7. Challenges

Skill Gap and Workforce Readiness

- A large portion of India's workforce lacks the technical skills required to work with AI technologies.
- Limited access to quality training in data science, machine learning, and automation widens the gap between industry needs and workforce capabilities.

Job Displacement Concerns

- Automation threatens low- and mid-skilled jobs in manufacturing, retail, and services.
- While AI creates new roles, reskilling the workforce quickly enough remains a major challenge.

Data Availability and Quality

- AI thrives on large, high-quality datasets, but India faces issues of data fragmentation, inconsistency, and poor data infrastructure.
- Many small and medium enterprises (SMEs) lack digitized records.

❖ *Infrastructure and Technological Limitations*

- Insufficient computing infrastructure, unreliable internet connectivity in rural areas, and high costs of AI hardware/software restrict adoption.
- Cloud and edge computing capacity still lag behind global standards.

❖ *Ethical, Legal, and Privacy Issues*

- Absence of a comprehensive data protection law creates uncertainty in AI deployment.
- AI misuse, algorithmic bias, and lack of accountability mechanisms pose ethical risks.

❖ *Low R&D Investment and Innovation Gap*

- Compared to developed nations, India invests less in AI research and innovation.
- Dependence on imported technologies limits indigenous development.

❖ *Uneven Regional and Sectoral Adoption*

- AI use is concentrated in sectors like IT and finance, while agriculture, education, and healthcare lag behind.
- Rural and small-scale industries often lack awareness or access to AI solutions.

❖ *Regulatory and Policy Uncertainty*

- Lack of clear AI governance frameworks slows adoption by industries wary of compliance risks.
- Coordination between government, academia, and private sector remains fragmented.
- *Job Displacement:* Automation may replace traditional banking and finance jobs.
- *Data Privacy and Ethics:* Risks of data misuse, especially in low-regulation environments.
- *Algorithmic Bias:* Risk of systemic bias in AI-driven credit assessments.
- *Digital Divide:* Limited access to AI-based services in rural or low-literacy regions.

VI. GOVERNMENT AND REGULATORY ROLE

- *NITI Aayog's AI Strategy:* Focuses on using AI for inclusive growth.
- *RBI and SEBI Initiatives:* Regulatory sandboxes and AI guidelines for risk management and algorithmic trading.
- *Digital India and IndiaStack:* Provide foundational infrastructure for AI expansion in fintech.

VII. CASE STUDIES:

1 HDFC Bank's Eva AI Chatbot

Eva handles over a million queries per month, improving customer experience and reducing operational load.

2 Paytm and Financial Inclusion

Using AI and ML, Paytm has extended credit and payment services to millions of Indians who previously lacked access.

3 Robo-Advisors like Kuvera and Scripbox

Offer affordable, AI-driven investment planning, especially for first-time investors.

VIII. FUTURE PROSPECTS

The **future prospects of Artificial Intelligence (AI) in the Indian economy** are exceptionally promising — AI is expected to become one of the strongest growth drivers for India in the coming decade. Below is a detailed overview across key dimensions:



1. Economic Impact

- **Contribution to GDP:** According to NASSCOM and McKinsey reports, AI could add **\$500 billion to \$1 trillion** to India’s GDP by **2035**, primarily through productivity gains, automation, and innovation.

- **New Job Creation:** While some routine jobs may decline, AI will **create millions of new jobs** in data analytics, AI engineering, cybersecurity, and ethical AI governance.
- **Boost to Startup Ecosystem:** India already hosts over **3,000 AI startups**, supported by initiatives like **Startup India** and **Digital India**.

2. Sector-wise Prospects

| Sector | AI Applications | Expected Impact |
|--------------------------|--|--|
| Agriculture | Crop prediction, soil analysis, drone monitoring | Increased yields, reduced waste, smart irrigation |
| Healthcare | Diagnostics, telemedicine, drug discovery | Affordable, accessible healthcare across rural areas |
| Education | Adaptive learning platforms, skill mapping | Personalized learning, reduced dropout rates |
| Finance | Fraud detection, credit scoring, robo-advisory | Improved efficiency and financial inclusion |
| Manufacturing | Predictive maintenance, automation | Boost in productivity and quality control |
| Transportation | Smart traffic, logistics optimization | Reduced congestion, cost savings |
| Public Governance | AI-based policy analytics, e-governance | Transparent, data-driven decision-making |

3. Government Initiatives

- **National Strategy for Artificial Intelligence (NITI Aayog)** focuses on “AI for All” — inclusive growth using AI in priority sectors like healthcare, agriculture, education, smart cities, and mobility.
- **IndiaAI Mission (2024)** is ₹ 10,300 crore national program to boost AI research, innovation, and skilling.
- **AI Research Centers & Cloud Infrastructure** is an establishment of **AI computing clusters** and **centers of excellence** to build domestic AI capabilities.

- **Infrastructure needs** — high computing power and reliable internet.
- **Ethical concerns** — algorithmic bias, job displacement, surveillance issues.

4. Skill Development and Education

- India’s **young workforce** gives it a major advantage.
- AI-related programs are expanding across **IITs, IIITs, and private universities**.
- Online platforms like **SWAYAM, Coursera, and FutureSkills Prime** are training millions in AI and data science.

7. The Road Ahead (Next 10 Years)

- AI-powered **smart governance** and **digital infrastructure** will redefine public services.
- **AI-driven MSMEs** and **rural innovation** will boost inclusive growth.
- By 2035, India could emerge as a **global exporter of affordable AI solutions**, similar to its IT revolution in the 1990s.

5. Global Positioning

- India aims to become a **global AI hub**, especially in **ethical, affordable, and inclusive AI** solutions.
- Collaborations with global leaders (US, EU, Japan) are helping India integrate into the global AI value chain.

6. Challenges Ahead

- **Data privacy and security** frameworks need strengthening.
- **Skilling gap** — AI literacy must reach rural and semi-urban populations.

IX. CONCLUSION

AI’s integration into financial decision-making is reshaping the Indian economy by enhancing inclusion, improving efficiency, and enabling data-driven policymaking. To maximize benefits and mitigate risks, a robust regulatory framework, investment in AI education, and ethical oversight are essential. With strategic planning, India can harness AI to become a global leader in intelligent finance.

While AI offers enormous potential to boost productivity, enhance service delivery, and promote economic growth in India, realizing these benefits requires a balanced approach — investing in human capital, strengthening data and digital infrastructure, and building ethical and regulatory safeguards.



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AI is poised to be a major driver of India's economic transformation—enhancing productivity, inclusivity, and innovation. With proper investment in digital infrastructure, education, and ethical governance, India can become a **global leader in responsible and inclusive AI**.

The future of AI in the Indian economy is transformative — poised to drive inclusive growth, enhance governance, and make India a global leader in “AI for All.”

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