SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 7 | July 2025 - Peer Reviewed Journal

THE INTELLIGENT REVOLUTION: HOW AI IS SHAPING FINTECH IN THE ERA OF INDUSTRY 6.0

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Article DOI: https://doi.org/10.36713/epra22967
DOI No: 10.36713/epra22967

ABSTRACT
Artificial intelligence is rapidly transforming various sectors across the economy, particularly manufacturing, healthcare, retail, and transport, but one industry with the most obvious impact is the FinTech industry. FinTech companies utilize AI to enhance customer experience, streamline operations, and deliver more secure, personalized financial services. This research explores the evolving role of AI in FinTech with the context of Industry 6.0, which is anticipated to emerge around 2050. Where algorithmic trading, advanced fraud detection, ethical issues, real-time cyber security, and personalised financial services are supposed to be at the next level. This study also explores the major opportunities, such as improved efficiency, decision-making capabilities, and accuracy, as well as challenges related to regulatory compliance, data privacy, and ethical AI. By exploring existing patterns and envisioning future trajectories, this article aims to deliver a comprehensive understanding of how AI will shape the FinTech landscape in the intelligent era of Industry 6.0.

KEYWORDS: *Industrial Revolution, Cloud Computing, Innovation, FinTech, Blockchain, Cryptocurrency*

INTRODUCTION
Industry 6.0 represents the next phase of industrialization. It is not just about automating factories but transforming the entire industry through high-tech technology. Industry 6.0 involves advanced artificial intelligence, human-AI collaboration, hyper-automation, and real-time decentralized decision-making. The next industrialization phase will focus on a fully integrated intelligent manufacturing system that can run with minimal human intervention. It is predicted that technology will reach full autonomy by 2050. India has a pool of talent because of its high young population and strong technological base. India will become a prominent player in the Industry 6.0 ecosystem. Owing to the incorporation of artificial intelligence and machine learning technology, Fintech will be recognized as a transformative force in the field of fraud detection, analysis of complex data, risk management, personalized banking, and customer experience. With the advancement of technology in modern society, fintech has become a powerful tool to accelerate the financial industry. There are various key innovations in the financial service industry, such as Google Pay and Apple Pay, which are the leading mobile applications that help to manage your financial transactions, and you are not required to carry any physical cash or cards. Applications for wealth management like Zerodha, Angel One, and Groww these applications provide services like stocks, mutual funds, IPO, bonds, future and options trading facilities, etc without going to any physical market. Other innovations like blockchain for smooth & transparent financial transactions. Robo advisor for consultation in wealth management. These innovations demonstrate the rapid evolution in the banking sector due to the coming of fintech. Let's imagine the future when AI will be fully implemented in the financial sector and what changes it will bring.

REVIEW OF LITERATURE
Shoetan, P. O., & Familoni, B. T. (2024). The study analysis that Artificial Intelligence plays a significant role in the Fintech Industry because it helps in various ways, such as fraud detection, transparency, increased operational efficiency, reduced time, real-time decision making, predictive analysis, and data privacy. Still, on the other hand, it also creates some hurdles like cybersecurity risk, regulatory compliance, workforce displacement, and over-reliance on Artificial Intelligence models. Despite this, AI will maintain the balance between continuous innovation and fraud detection and protect the customer interest in the modern era. Rasiwala, F.S., & Kohli, B. (2021). The findings reveal that FinTech could not succeed without physical banks, and banks could not perform well without FinTech services because both are interrelated. Fintech provides digital services such as wealth management, crowdfunding, peer-to-peer lending, and robot advisory, and physical branches perform functions like handling complex data, cash transactions, verification, regulatory support, customer services, etc. Therefore, it requires a collaborative approach to maintain a sustainable ecosystem. Liang, S. (2023). This research investigates how Fintech helps financial inclusion and reaches underserved or unbanked populations. The Covid-19 pandemic accelerated the growth of digital financial services. Due to the adoption of AI, machine learning, and quantum computing financial services have become more innovative, tailor-made, and sophisticated, which also leads to new challenges and opportunities in the Fintech industry. Duggal, A.S., et al. (2022). The study suggested that Industry 6.0 is a

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vision where robots will dominate the entire work, especially in manufacturing for mass-level production, medical for surgeries or operations, and household work like cleaning and cooking, most of our daily lifestyle tasks will be performed by robots with the help of artificial intelligence. This perspective also focuses on renewable energy resources and reducing the emission of fossil fuels to make industries smarter and greener. Chourasia, S., et al. (2022). The study tries to represent the transformational journey of Industry 6.0 starting from Industry 1.0 and onwards. The Industrial Revolution proves that with the coming of Industry 6.0, many people will lose their jobs because robots will replace human workers, and the entire scenario of manufacturing will change due to the automation of industry.

RESEARCH OBJECTIVES

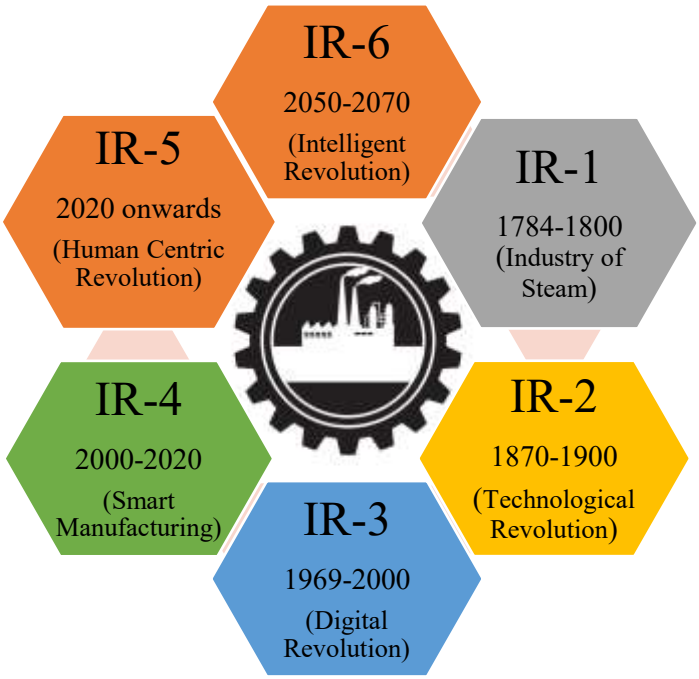
- To understand the concept of Industry 6.0 and how it differs from previous Industrial revolutions.
- To study how AI transforms the Financial decision-making process.
- Examine the role of AI in FinTech like fraud detection, risk management, data handling, robo-advisor, tailor Insurance service, and credit scoring.

RESEARCH METHODS

In this research, we will employ a Descriptive research design by utilizing secondary data sources such as existing industry reports, financial statistics, and market data. This approach will enable us to systematically analyze and interpret the role of Artificial Intelligence (AI) in driving FinTech transformation within the framework of Industry 6.0.

EVOLUTION OF INDUSTRIAL REVOLUTIONS

The first Industrial Revolution 1.0 was started in the year 1784. It was known as the "Industry of Steam" which means using water and steam engines to transport goods from one place to another. Industries such as mining, glass, agriculture, and textiles gained significant benefits in this era. The second Industrial Revolution 2.0 started from 1870 onwards, it was known as the "Technological Revolution" which began mostly in America, Germany, and Britain. During this time, electrical technology was invented, which led to mass production through an assembly line. This era also facilitated the invention and success of automobiles and airplanes. The third Industrial Revolution 3.0 was initiated in 1969 which triggered the emergence of computer technology and IT. This revolution was known as the "Digital Revolution" because computers helped in working but still, the entire work was human-controlled. In this era, Internet connectivity, Automation manufacturing, and renewable sources of energy were founded.



Fourth Industrial Revolution 4.0 which was synonymous with "Smart Manufacturing" started in the year 2011. One of the key aspects of Industry 4.0 was the manufacturer integrates the interconnected technology which enables the business to share real-time data, optimize processes, enhance quality, and reduce cost. Smart factories are equipped with high-tech sensors, robots, and embedded software that improve decision-making capabilities. The Fifth Industrial Revolution 5.0 began in 2020, and it is popularly recognized as the "Human Centric Revolution." It is marked by human-machine collaboration using artificial intelligence. Industry 5.0 harmonizes technology and humanity by enhancing human capabilities and creativity with machines rather than replacing them. It also focuses on reducing wastage and pollution and holds environmental and social values by providing customized products & services. The sixth stage of Industrial Revolution 6.0 will be the "Intelligent Revolution" which is speculated to occur in the year

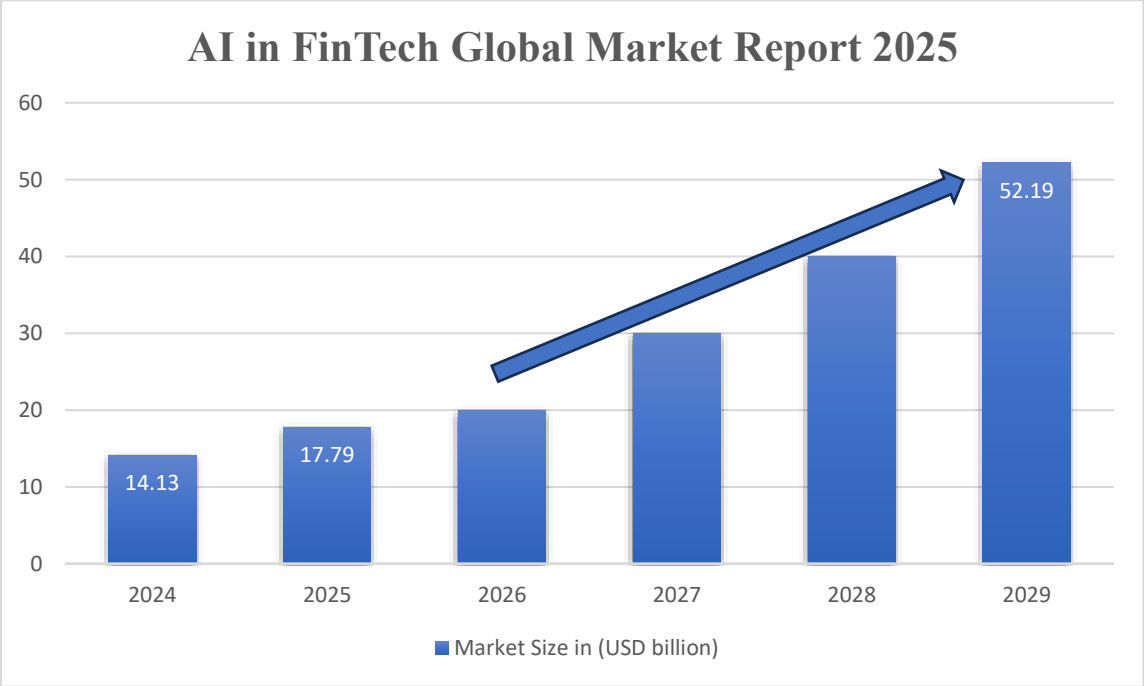
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2050. It will be the transformation from human-machine collaboration to machine-machine collaboration using biotechnology, nanotechnology, blockchain, quantum computing, neurotechnology, etc. It will be an intelligent manufacturing system that can be operated without or with minimal human intervention. Industry 6.0 will be a futuristic industry with a broader vision than still ongoing industrial revolutions.

TRANSFORMATION OF FINTECH

1. AI as a Transformative Force

Artificial intelligence plays a vital role in transforming financial technology services. It helps boost accuracy, efficiency, and customer experiences. AI chatbots provide instant answers to their questions and reduce the human workload. These chatbots transform traditional banking and give a new shape to the digital banking system. Risk management is an important concern. With AI's help, we can easily evaluate clients' historical databases and credit history and reduce the risk of bad debts. AI also supports fraud detection by identifying behavior patterns to minimize the liability of financial losses. Cybersecurity is another perspective that relies on AI for support. In today's world financial planning can be done with the help of AI you need to tell how much amount you would like to invest, the time duration, and the level of risk, AI will reveal alternative investment opportunities like stocks, bonds, mutual fund, gold, exchange-traded funds, future & options, PPF, FD's, etc. as per the report of business research company the market size of AI in Fintech is 14.13 billion dollars in the year 2024 and it is expected to reach at 17.79 billion dollars in 2025 with a CAGR (compound annual growth rate) of 25.9%. It is forecast that the market size of AI in the global fintech market will be 52.19 billion dollars in 2029 at a CAGR of 30.9%.



Source: *(The Business Research Company Report 2025)*

2. Internet of Things

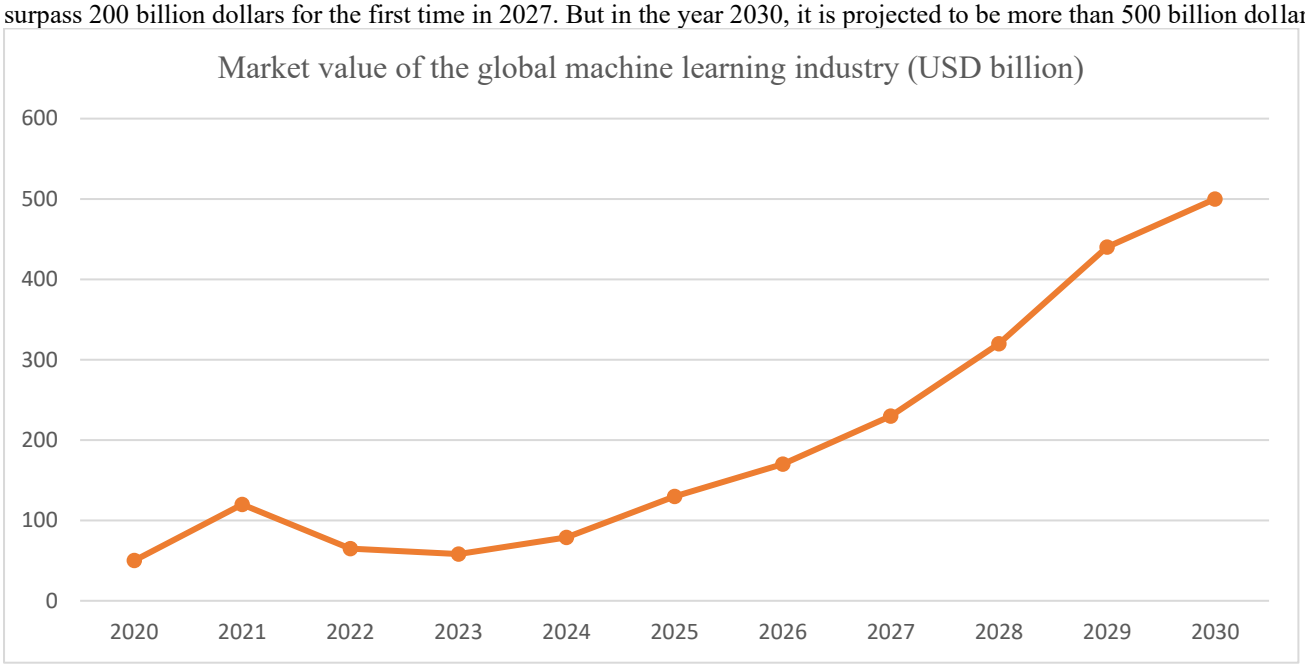
The Internet of Things, usually known as IoT, means physical devices connected over the internet that are embedded with software or sensors. IoT includes household items to industrial products such as smart watches, smart rings, smart health care products like smart bands, smart cars, and smart homes where electronic equipment such as AC, refrigerators, lights, fans, and even washing machines are controlled from smartphones. In Fintech, IoT devices are used to detect and prevent fraudulent activities. It helps to improve the security of financial transactions. IoT is a revolutionary concept in the banking industry because it puts the bank branch directly in the customer's hands.

3. Machine Learning

Machine learning is a type of Artificial Intelligence that uses algorithms to analyze data and making of decisions. It identifies the pattern of data and creates a model that can make a prediction. Some examples of machine learning are data analysis, predictive modeling, and image recognition. Machine learning helps to forecast the pattern by using their predictive algorithm these patterns like trends of stock, loan default rate, credit history, etc. we can classify the customers into various groups based on their demographical patterns such as income, education qualification, gender, and region wise then compare the current data with their historical records by statistical analysis and trend analysis. So, this approach is useful for fraud detection, KYC verifications, personalized financial advice, and real-time decision-making. The market value of global machine learning is 79 billion dollars,

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which increased by almost two-fifths (38%) from 2023. The figures from 2024 onwards are just projections, and it is expected to surpass 200 billion dollars for the first time in 2027. But in the year 2030, it is projected to be more than 500 billion dollars.



Source: *(Statista Report 2024)*

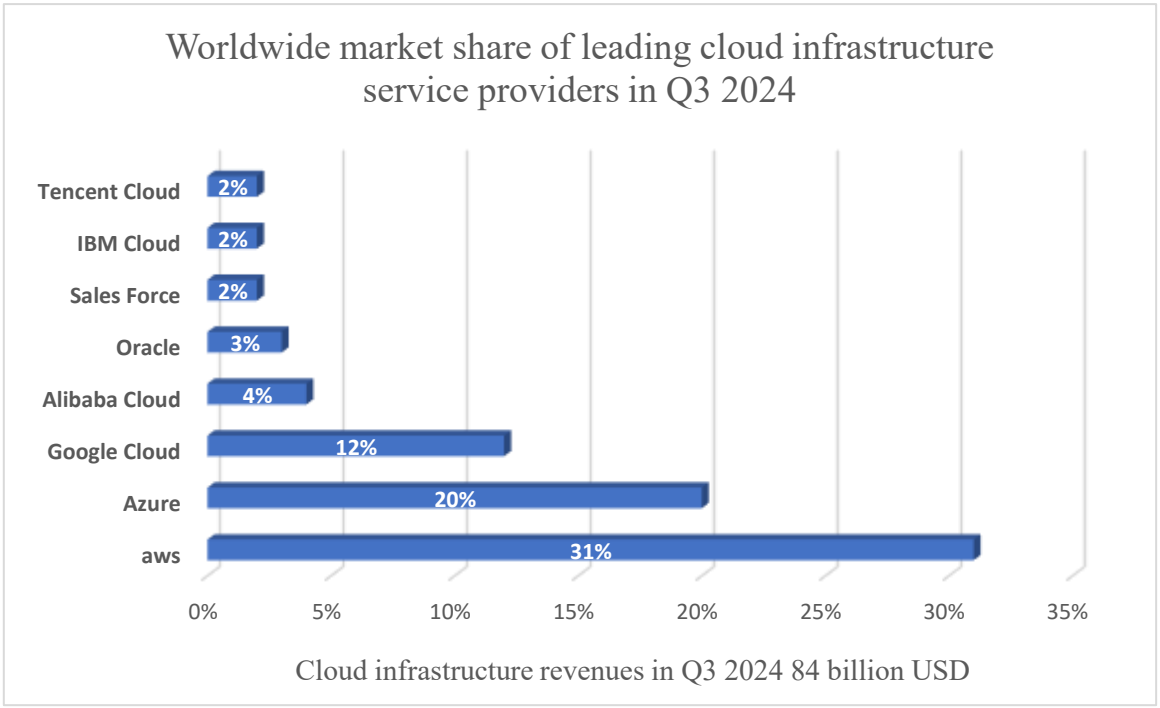
4. Robo Advisory

Robo advisors reshape the financial industry, especially in the area of wealth management. It is created to reduce the workload of employees working in the finance sector. As per the report of Statista, the global assets managed by robo advisors are expected to reach 2.33 trillion dollars in the year 2028. The term robo advisory is a combination of two words: robo which means robots with the help of artificial intelligence, and another word is advisory which means consultation. Robo advisory is the use of mathematical algorithms to provide financial advice with minimal human intervention. Robo advisory can support tax optimization, risk tolerance assessment, portfolio management, asset allocation, diversification, and investor education. On the other side, there are some challenges concerns to robo advisory, such as data privacy, regulatory compliance, and trust issues etc.

5. Cloud Computing

Cloud computing means intangible forms of services such as storage, database, networking software, and analytics rather than any physical storage, such as a hard drive or any local drive. We can access the data with a single click, and it is possible to save remotely. Cloud computing plays a crucial role in Fintech companies because it helps in the storage & management of large financial databases and customer records that can be smoothly extracted at any time. It is a very safe and secure method of handling the data. Cloud computing supports cost reduction because initially large amount was paid to the IT houses to manage & store the data but now fintech companies do not rely on these storage houses so this cost-cutting increases the profitability of the fintech sector and indirectly benefits customers by offering the services at the lowest price and better customer experience by providing fast and reliable financial services. At the global level, Amazon Web Service (AWS) is the leading cloud service provider, having a market share of 31%, followed by Azure, Google Cloud, Alibaba Cloud, and others.

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Source: *(Synergy Research Group 2024)*

6. Blockchain Technology

Blockchain technology is a popular concept because it creates an invariable record of financial transactions and tracks asset records. It is just like a decentralized digital ledger. This eliminates the need for intermediaries such as clearing houses and financial institutions to promote transparency and reduce the risk of fraud detection. The concept of cryptocurrency is entirely based on blockchain technology because transactions are completely performed digitally, and it does not have any physical existence. Maintaining the record of every single transaction from the source of origin to the destination is executed by blockchain technology. Some instances of blockchain in fintech are HSBC-implemented blockchain-based trade finance platforms to digitize operations by using R3 Corda. It is designed for secure sharing of trade documents like letters of credit and invoices. Another example is JP Morgan created their own (Onyx) for tokenizing assets to speed up cross-border transactions with the help of blockchain technology. Other financial institutions are also focusing on how they can utilize blockchain technology to explore the possibilities of crypto or digital assets.

CONCLUSION

Industry 6.0 is a visionary concept, but we can imagine the technology, especially artificial intelligence, will not pause for a second because it is an evolutionary thing. In every sector of the economy, such as manufacturing, medicine, agriculture, energy, and tourism, only AI will dominate. No doubt in the Fintech industry, AI will play a crucial role through the help of blockchain technology, robo advisory, cloud computing, machine learning, and big data analytics, banks or financial institutions can provide tailor-made financial services to users as fast as possible. In the future, financial decision-making will be easier because innovations in robo-advisory reduce human intervention. However, this journey is not without hurdles, such as data privacy issues, cybersecurity, fraud, and regulatory compliance that will persist in the future. But still, the venture will focus on innovative ethical artificial intelligence, which will be a balanced approach to promote fairness and privacy.

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