DIGITAL FINANCIAL TRANSFORMATION IN INDIA: ROLE OF FINTECH IN A DEVELOPING ECONOMY

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KEY WORDS

FinTech, UPI, Blockchain, Cryptocurrencies, InsurTech, RegTech, Robo advisory services, WealthTech, Neo Banks, Crowdfunding

ABSTRACT

The advancement of financial technology (FinTech) leads to a drastic change in India's financial sector. Increasing usage of smartphones and easy access to the internet are accelerating the financial technology across the country(Dafri et al., 2026). The article explores the concept of financial transformation and the evolution of FinTech in India. The FinTech in India has evolved through three stages. They are FinTech 1.0, FinTech 2.0, and FinTech 3.0. This article details the key FinTech innovations such as Unified Payment Interface (UPI), mobile banking, artificial intelligence, blockchain technology, robo-advisory services, digital lending platforms, InsurTech, RegTech, WealthTech, neobanks, Buy Now Pay Later (BNPL) services, cryptocurrency, and crowdfunding platforms(Rita & Nastiti, 2024). The article mainly focused on how FinTech helps in the economic development of a nation. Mainly, the introduction of FinTech helps with financial inclusion, support to the small and medium entrepreneurs, promotes a cashless economy, and also helps to effectively transfer various government welfare programmes through various mechanisms like Direct Benefit Transfer (DBT)(Soviatri & Rismawati, 2024). This article also emphasises the risks associated with digital financial transformation, including cybersecurity risks, regulatory uncertainties, and problems related to digital literacy. The study highlights that proper regulation and implementation of FinTech contribute positively to the economic growth of a country.

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1.0 Introduction

In this rapidly transforming world, the digital transformation has also become an important and powerful tool for the economic development of a nation, particularly in India. The word FinTech represents the combination of finance and technology(Xu & Su, 2025). FinTech includes various technologies such as digital payments, blockchain, mobile banking, cryptocurrencies, peer-to-peer lending platforms, and artificial intelligence to deliver fast, accurate, and efficient services to its customers(Arner et al., 2018). Traditionally, banks act as intermediaries to carry out various financial services. This includes accepting deposits, lending loans, extending credit, and delivering other financial services. The integration of financial technology in the financial system has changed the transfer of financial services by way of improving efficiency, inclusion, and also in reachability. Companies such as PayPal and Stripe became a major part of the transformation of the digital payment system. The evolution of digital banks such as Revolut and N26 has led to gave branchless financial services. This article focuses on the growth of digital transformation in India and also analyses the important role of FinTech in moulding the developing economy (Pahlevi et al., 2024). Moreover, this article also deals with the challenges associated with digital transformation, such as cybersecurity risk, regulatory norms, disintermediation, etc.

1.1Growth of FinTech in India

The growth of financial technology in India is not a sudden movement. These digital transformations have taken place through various stages. Now India has emerged as one of the leading FinTech hubs in India. This achievement has been influenced by various factors such as technological advancement, supportive government policies, and a large customer base.

The large number of smartphone users and the affordable internet facility have also led to transforming India into a FinTech country.

One of the remarkable game changers in the digital economy in India is the introduction of the Unified Payment Interface, also called UPI. This helps customers to transfer funds from one bank account to another bank account at anytime from anywhere. This can be done through mobile devices using mobile applications such as PhonePe, Google Pay, etc. Another important feature of the UPI system is that it helps to make the easiest, most secure, and fastest transactions.

The digital transformation not only focuses on payments, but it also leads to various FinTech innovations, such as digital lending platforms, wealth management applications, insurance technology, also called InsurTech, and regulatory technology called RegTech (Dzhereleyko et al., 2025). All these technological advancements lead to expanding the scope of financial services. The development of FinTech is broadly classified into three categories.

1. FinTech 1.0 (Pre-2008 Era)
2. FinTech 2.0 (2008-2015)
3. FinTech 3.0 (2015 – Present)

1. FinTech 1.0 (Pre- 2008 Era)

The first stage in FinTech mainly focused on the digital transformation of current banking services. In this stage, financial institutions mainly concentrated on implementing various technologies such as Automated Teller Machines (ATMs), electronic payment systems, and online banking platforms (Zveryakov et al., 2019). The introduction of these technologies improves the effectiveness and efficiency of the banking system, but does not help to make a change in the structure of the banking industry. During this stage, the bank heavily depended on physical branches to provide banking services. Bank remained a primary financial service provider.

2. FinTech 2.0 (2008-2015)

The global financial crisis in 2008 became a milestone for the introduction of Fintech. The global financial crisis has led to an awareness regarding the weaknesses of the existing traditional banking system. Also, this financial crisis leads the economy into a depressed stage. Weak regulation, decline of major financial institutions, securitisation, excessive credit to borrowers who have poor credit history, and a housing bubble are the major factors that led to this crisis.

The global financial crisis has revealed the weakness of the traditional banking system, and that results the loss of public trust in the traditional banking system. However, on the other hand, it helps to create new possibilities to solve these problems. During that time, various platforms such as peer-to-peer lending, crowdfunding, and mobile payments were also developed.

These platforms create more accurate, wider, and economical services to its customers. The new entrants also introduced various innovative business platforms that overlap with the existing conventional banking models. That also leads to reducing the intervention of intermediaries.

3. FinTech 3.0 (2015 – Present)

FinTech 3.0 is the current stage of FinTech. We can categorise this stage as the stage of fast inventions. Because so many technological innovations, such as artificial intelligence, blockchain, big data analytics, and cloud computing, are taking place during this stage. Nowadays, FinTech provides a wide range of financial services, including payments, lending, wealth management, and insurance (Sujawal Hussain et al., 2025).

The main characteristics of this phase are that it not only challenges the traditional banking system but also tries to develop competition between banks. The introduction of neobanks and digital-only financial institutions is an example of this drastic change (Sujawal Hussain et al., 2025).

1.2 Key Fintech Innovations In India

It is necessary to gain an understanding of the various fintech innovations in India. Each innovation can be discussed in detail below.

1. Digital Payments

Digital payments are considered a core part of the FinTech innovations in India. That helps everyone to make transactions online without keeping cash in hand. The introduction of Unified Payments Interface (UPI) by the National Payments Corporation of India has made a revolutionary change in the financial system in the country (Galazova & Magomaeva, 2019). It helps to transfer funds at any time as we need through bank accounts. The invention of mobile applications such as Phonepe, Google Pay, and Paytm also strengthened the growth of the digital payment system. Most of the people choose digital payments because of their convenience, transparency, and low transaction costs, and they also contribute to the growth of the economy.

2. Mobile Banking

Another drastic change in the financial system occurs through the introduction of mobile banking. This entirely shifts the interaction between customers and banks. They interacted through smartphones by accessing financial services(Sayari et al., 2025). It helps customers to do various activities such as fund transfer, bill payments, etc., without visiting the bank branches. This FinTech innovation leads to financial inclusion, especially for the marginalised sectors in society. The people in rural areas have limited opportunities to access financial services because of a lack of awareness, a lack of proper infrastructure, etc. Banks like State Bank of India developed user-friendly mobile applications to expand their reach and improve customer engagement (Munachi Ijeoma Ononiwu et al., 2024).

3. Artificial Intelligence

The emergence of artificial intelligence (AI) is another major FinTech innovation. The use of various AI applications helps to detect errors and fraud, perform risk assessment, and perform credit scoring(Wang et al., 2024). This helps financial institutions to choose the creditworthy borrowers and lend loans according to their ability to repay. The AI-powered chatbots also provide customer support by answering their queries. The use of AI applications not only improves the authenticity but also minimises costs and improves customer satisfaction.

4. **Blockchain Technology**

Blockchain technology is a modern FinTech initiative that helps to record transactions transparently and securely using an advanced database mechanism(Candy et al., 2022). It is operated based on distributed ledger technology (DLT). Here, each transactions are grouped into blocks, then they are linked together to form a secure and transparent chain.

5. **Digital lending platforms**

Digital lending platforms lead to a drastic change in the credit market industry by providing fast and convenient loan services through online platforms. It helps to provide instant loans after evaluating the creditworthiness of customers using advanced algorithms (Felimban & Alzahrani, 2025). Recur Club and Kredit Bee are some popular online lending platforms.

6. **Robo Advisory Services**

Robo-advisory services are regarded as a major Fintech innovation that results in many remarkable changes in the current financial system. It helps to provide financial advice and portfolio management with minimal human intervention(Ramadhan et al., 2025). Robo advisory services help to choose the most suitable investment strategy after assessing risk. investors' choice and their objective. While comparing conventional financial advisors with robo advisors, one of the major advantages of robo advisors is operating at a lower cost. Also, we can eliminate unnecessary human interventions. Scripbox is an example of robo-advisory services in India. Robo advisory services help to make long-term financial planning, eliminate behavioural biases for investment decisions, and also get professional advice for making the best decisions.

7. **InsurTech (Insurance Technology)**

InsurTech mainly focuses on the integration of digital technology in the insurance sector. That helps the insurance sector become more innovative and efficient. InsurTech uses artificial intelligence, big data analytics, and mobile platforms for making various processes such as underwriting, policy issuance, and claim settlement. The introduction of InsurTech makes the insurance process very simple and easier as compared to the traditional insurance system. Because convention insurance system follows a complex procedure and is time-consuming. Policybazaar is an example of InsurTech in India (Ristanović et al., 2025).

8. RegTech (Regulatory Technology)

RegTech emerged as a FinTech initiative to efficiently meet regulatory compliance and risk management. Financial institutions face many challenges to meet the various regulatory requirements. Also, they incur a large amount of funds in the name of controlling costs. The introduction of RegTech helps to minimise these costs by using various methods(Santos, 2024). Anti Money Laundering (AML), monitoring, Know Your Customer (KYC) verification, fraud detection, and verification are the functional areas of RegTech. It helps to reduce the regulatory violations and penalties.

9. **WealthTech**

WealthTech is mainly focused on digital platforms for investment management, trading, and wealth creation. WealthTech is a subset of FinTech. WealthTech provides various applications and methods that help individuals to invest in stocks, mutual funds, and other financial instruments(Goswami et al., 2022). Zerodha is an example of WealthTech. The implementation of WealthTech helps to reduce transaction costs and enhance the participation of investors in the capital market.

10. **Buy Now, Pay Later (BNPL)**

Buy Now Pay Later (BNPL) is experiencing rapid growth in the modern, developing world. BNPL provides the facility to purchase immediately, then pay later in instalments. That's why it is called buy now, pay later. This facility is provided for a very short period. Most of the BNPL providers are Simpl and LazyPay.This facility helps to get instant credit approvals without traditional credit checks. Through BNPL services, customers are motivated to increase their purchasing power(Manta et al., 2025). This also leads to an increase in the sales of the business. Particularly, this also leads to arise a risk of increasing the debt of customers and may result in default by customers in credit payments.

11. **Neo Banking (Digital Only Banks)**

Neo banks, or digital-only banks, are financial institutions that, as the name indicates, they carry out transactions without any physical office. These licensed banks provide banking services through mobile applications. Jupiter and Niyo are famous examples of this digital-only banks (Warokka et al., 2025). Neo banks help to open paperless accounts, and we can track our account status at any time. The introduction of neo banks increases the competition in the banking sector. One of the major positive aspects of neo banks are helps to promote financial inclusion through easy access.

12. Cryptocurrency

Cryptocurrencies are digital assets that use cryptographic techniques and blockchain technology to enable secure and decentralised transactions. Bitcoin is most widely used for investment and cross-border transactions. High price volatility, regulatory uncertainty in Indian security markets, and fraud are some of the challenges related to cryptocurrencies(Febriyani et al., 2024).

Nowadays, cryptocurrencies are widely used because of their global accessibility and transparency provided through blockchain technology.

13. **Crowdfunding Platforms**

As the name indicates, crowdfunding means raising funds from a large number of investors through digital platforms. Mainly, it helps to innovations and startups by acting as an alternative source of funding. This also helps to reduce the dependence of financial institutions. Equity crowdfunding, reward-based crowdfunding, and donation-based crowdfunding are the various types of crowdfunding. Ketto, Milaap, and Wishberry are some of the commonly used crowdfunding platforms.

2.0 Role of FinTech in a Developing Economy

FinTech plays an important role in transforming the conventional economic system into its current status. While following the traditional banking system, the majority of the population became unbanked(Department of Economic Affairs, 2019). FinTech helps to remove this financial gap and strengthen economic development. It provides various solutions to encourage accessibility, efficiency, and inclusiveness in financial services(Arner et al., 2020).

The traditional banking structure has so many challenges. One of the major challenges that were faced in there was that so many populations, especially in rural ares has lacked access to various banking services. FinTech provides various services such as mobile banking, digital banking wallets, and online payment system initiatives like Pradhan Mantri Jan Dan Yojana, supported by technical platforms such as Unified Payment Interface (UPI), which has expanded access to banking services. Through these changes, it helps banks to provide financial services to the unbanked areas also. They can save, borrow, and invest very easily through these FinTech services(Arianto Dangkeng & Rahim munir, 2025).

FinTech also takes a major part in transforming our economy into a cashless economy. Google Pay and PhonePe have a large part to play in digitalising the economy. This shift to the digital economy reduces the dependence on physical cash and also leads to improved transparency, reducing corruption and tax evasion(Hassouna & Mohammed, 2025).

Furthermore, FinTech also supports small businesses and entrepreneurship. These play an important role in the economic growth of developing economies. The conventional banking system follows rigid rules for availing credit to its customers (Adhista, 2025). But the introduction of FinTech helps to remove this problem by offering digital lending platforms. That helps to assess the creditworthiness of customers. Lendingkart is the best example of providing quick and hassle-free loans to small businesses (Serang et al., 2025).

FinTech provides faster services with cost efficiency. The use of various technologies, such as artificial intelligence, helps to deal with various processes like customer services, fraud detection, and risk assessment. It not only reduce cost also leads to delivering faster services to its customers. It is easy to trace and get clear data regarding each transaction while making a digital transaction. This helps to reduce fraud and corruption. Various government programmes also lead to the effective implementation of FinTech. The government can easily transfer subsidies and other benefits to beneficiaries' bank accounts by linking Aadhaar with the financial platforms. This process is known as Direct Benefit Transfer (DBT) (Suryono et al., 2020).

The implementation of FinTech also leads to support for e-commerce, online services, and online education. This helps to easily transform our economy into a digital economy. When the digital transaction increases that results positively for our nation's Gross Domestic Product (GDP) (Tarigan et al., 2025).

3.0 Conclusion

FinTech plays an important role in transforming India's financial economy into a growing digital economy. FinTech not only focuses on technological advancement, but it also focuses on the participation of all sections of society through financial inclusion(VanderLinden et al., 2018). Everyone can access banking services through mobile applications, online banking, etc. Financial inclusion is the major and vital outcome of FinTech. It really helps people who are underserved in the traditional banking system to access banking services with the implementation of digital payment systems, mobile banking, and online lending platforms. The government initiatives, such as Pradhan Mantri Jan Dhan Yojana, also lead to getting financial services to the underserved sections of society(Winarni & Akbar, 2025).

Fintech also takes necessary steps to support small businesses and entrepreneurs. They are the backbone of our economy. But they face strict rules and regulations for availing a loan from the traditional banking system. But the introduction of FinTech helps them to get loans easily through digital lending platforms. Credit assessment tools are used to assess the credit score of customers. This helps them to get loans easily(Murinde et al., 2022). FinTech also makes our economy a cashless economy. Demonetization in 2016 played a major role in this shift to a cashless economy. Because digital transactions are easy to track and offer transparency in the financial system. This helps to reduce corruption(Zaid et al., 2025).

Even though FinTech has the above advantages, it is necessary to get an idea about the challenges associated with FinTech(Dafri et al., 2026). Cybersecurity is an important risk associated with FinTech. To overcome this risk, we want to strengthen our regulatory system, although it has been improving, but need to improve to cope with the rapid advancement of technology. Mainly focus on areas such as cryptocurrency and peer lending(Radulović & Jovović, 2025). Consumer protection also another important risk associated with FinTech. To overcome this situation, the service providers should give a detailed explanation regarding their services, like Buy Now Pay Later (BNPL), to get a clear idea about their services. This helps the users to make proper decisions based on their financial status. Otherwise, that affects their financial well-being and leads to an increase in the personal debt of the customer.

In conclusion, FinTech plays an important role in the digital transformation of our economy. It helps to build a safe and genuine economy(Bawa & Abdullahi, 2025). But this can be strongly achieved through the cooperation between the government, regulators, financial institutions, technology companies, and society.

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