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## PROGRESS OF FINTECH AND ITS IMPACT ON THE GLOBAL AND INDIAN FINANCIAL SECTORS

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### ABSTRACT

*Financial Technology (FinTech) has significantly transformed the global and Indian financial sectors by enhancing the accessibility, efficiency, and convenience of financial services. This study examines the progress of FinTech and its impact on financial inclusion, technological adoption, digital accessibility, and regulatory support. The study is based on primary data collected from 176 respondents through a structured questionnaire and secondary data obtained from journals, reports, and official publications. Statistical tools such as Percentage Analysis, Mean Score Analysis, and One-Sample t-Test were used for data analysis. The findings reveal that FinTech has improved financial inclusion, reduced transaction time, promoted cashless transactions, and enhanced customer satisfaction. The study also highlights the growing adoption of technologies such as Artificial Intelligence, Blockchain, and Cloud Computing by financial institutions. However, challenges such as cybersecurity risks, privacy concerns, and digital literacy issues remain. The study concludes that FinTech plays a crucial role in modernizing financial services and supporting economic growth.*

**Key Words:** Fintech, UPI, AI, Digital Public Infrastructure, Aadhaar.

### INTRODUCTION

Financial technology, or "FinTech," has emerged as a seismic force transforming the global financial services landscape by leveraging technology to improve, automate, and democratize financial services. This rapid evolution has moved beyond traditional banking, with global Fintech revenue expected to reach USD 1.5 trillion by 2030, and India emerging as a global leader with an 87% adoption rate, far exceeding the 64% global average. FinTech has revolutionized access to finance for the underbanked, particularly through mobile money, digital lending, and microinsurance.

Traditional financial institutions are shifting from viewing FinTech as a disruptor to an enabler, adopting AI, machine learning, and cloud computing to enhance efficiency, reduce operating costs, and improve customer experience. The Unified Payments Interface (UPI) has set global standards, with transaction volumes growing over 56% in late 2023. Digital lending has also expanded significantly, with FinTechs originating 89% of small-ticket personal loans by count in 2024. As Finance Minister Nirmala Sitharaman gears up to the Narendra Modi-led NDA government's 11th Budget in July, the nation awaits with bated breath, hope, and expectation. While the Indian economy has recovered from the aftershocks of Covid, registering a GDP growth of 8.2% in the financial year 2023-2024 (FY), there is considerable anticipation after precursor that the Budget would be an "effective document of the government's far-reaching policies and futuristic vision" of a prosperous India or Viksit Bharat.

**KEY TECHNOLOGIES FUELLING INDIA'S FINTECH GROWTH:**

India's fintech industry is powered by innovative technologies that enhance efficiency, security, and accessibility. These advancements are reshaping digital banking platforms, and financial inclusion, driving growth in the global fintech sector.

**Unified Payments Interface (UPI)**

UPI is the foundational, revolutionary technology in Indian fintech, enabling instant, interoperable, and low-cost transactions.

**Impact:** It has transformed India into the world's leader in real-time payments, with over 12 billion transactions processed monthly by 2025.

**Evolution:** Beyond P2P, UPI now supports credit card linkages (RuPay), "scan and pay" QR codes, and offline payments, expanding its reach into rural and tier-II/III cities.

**The 'India Stack' (Digital Public Infrastructure)**

A set of APIs that allows governments, businesses, and startups to utilize a unique digital infrastructure.

**Aadhaar (Digital ID):** Enables e-KYC for instant, paperless customer onboarding.

**Account Aggregator (AA) Framework:** Facilitates secure, consent-based sharing of financial data, which is critical for streamlining digital lending.

**Data Empowerment and Protection Architecture (DEPA):** Ensures secure data sharing, enhancing trust in digital transactions.

**Artificial Intelligence (AI) and Machine Learning (ML)**

AI/ML is central to improving operational efficiency and personalizing financial products.

**Lending & Credit Scoring:** Fintechs use AI to analyze alternative data (transaction history, utility payments) to evaluate creditworthiness for underserved segments, boosting the \$515 billion digital lending market.

**Fraud Detection & Security:** AI-powered tools provide real-time fraud monitoring, securing transactions and building trust.

**Hyper-personalization:** Robo-advisors and virtual assistants (chatbots) provide personalized financial advisory and 24/7 customer support.

**REVIEW OF LITERATURE**

**Arner, Barberis and Buckley (2016)** examined the evolution of FinTech and identified three major phases of financial innovation. The study highlighted how technological advancements transformed traditional banking services into digital platforms. The authors concluded that FinTech has increased financial efficiency, reduced transaction costs, and improved customer accessibility. However, regulatory challenges remain a significant concern for policymakers worldwide.

**Philippon (2016)** analysed the efficiency of financial intermediation in the digital era. The study found that FinTech innovations have enhanced financial service delivery by reducing operational costs and increasing transparency. The research emphasized that digital financial technologies can improve competition within the financial sector and provide better services to consumers.

**Lee and Shin (2018)** explored the FinTech ecosystem, including startups, technology developers, regulators, and financial institutions. The study revealed that collaboration between traditional banks and FinTech firms has accelerated innovation in financial services. The authors concluded that FinTech contributes significantly to economic growth by improving financial inclusion and promoting digital transactions.

**Fuster, Plosser, Schnabl and Vickery (2019)** investigated the impact of FinTech on lending practices. Their findings indicated that digital lending platforms improve loan accessibility and processing speed while maintaining credit quality. The study highlighted that FinTech-based lending models can enhance financial inclusion, especially among underserved populations.

**Thakor (2020)** examined the relationship between FinTech and banking institutions. The study found that FinTech companies have reshaped traditional banking operations by introducing

innovative financial products and services. The research concluded that banks adopting digital technologies are better positioned to remain competitive in the rapidly changing financial environment.

**Gupta and Xia (2018)** analysed the role of FinTech in promoting financial inclusion. The study reported that digital payment systems and mobile banking services have expanded financial access among low-income and rural populations. The authors emphasized that FinTech can bridge the gap between formal financial institutions and financially excluded communities.

**Narayan and Sahminan's (2018)** study focused on the influence of FinTech innovations on economic development. The researchers found that digital financial services stimulate economic activities by facilitating faster transactions and increasing financial participation. The study concluded that FinTech serves as a catalyst for sustainable economic growth in developing countries.

**Sinha and Kaur (2020)** examined the adoption of FinTech services in India following the digital transformation initiatives of the government. The study found that digital wallets, mobile banking, and Unified Payments Interface (UPI) significantly increased the usage of digital financial services. The authors concluded that FinTech has played a crucial role in strengthening India's digital economy.

**Patil and Kulkarni (2021)** investigated customer perceptions regarding FinTech services in the Indian banking sector. The findings revealed that convenience, speed, and ease of use were the primary factors driving FinTech adoption. The study also identified cybersecurity concerns and digital literacy issues as major barriers affecting user acceptance.

**Sharma and Gupta (2022)** studied the impact of FinTech on financial inclusion in rural India. The research found that mobile banking applications and digital payment platforms have significantly improved access to financial services among rural populations. The authors concluded that FinTech has the potential to reduce regional disparities in financial access, provided that adequate digital infrastructure and awareness programs are implemented.

#### **OBJECTIVES OF THE STUDY**

To examine how fintech bridges the gap for unbanked and underserved populations in rural and remote areas.

To evaluate how traditional financial institutions are adopting technology (AI, blockchain, cloud computing) to improve operational efficiency and reduce costs.

To assess the shift toward user-friendly digital platforms, 24/7 accessibility, and personalized financial services.

To understand the role of regulatory bodies (like RBI in India) in balancing innovation with security, data privacy, and risk management.

#### **HYPOTHESIS OF THE STUDY**

**H01:** There is no significant difference between male and female respondents regarding their perception of FinTech.

**H02:** Age group has no significant association with respondents' perception of FinTech.

**H03:** Educational qualification does not significantly influence FinTech adoption.

**H04:** Monthly income has no significant influence on FinTech usage.

#### **STATEMENT OF THE PROBLEM**

Financial Technology (FinTech) has emerged as a transformative force in the global and Indian financial sectors, revolutionizing the way financial services are delivered and accessed. The rapid adoption of digital payment systems, mobile banking, artificial intelligence, blockchain technology, and cloud computing has significantly enhanced the efficiency, accessibility, and convenience of financial services. In India, initiatives such as Unified Payments Interface (UPI), Aadhaar-enabled services, and digital lending platforms have accelerated financial inclusion and promoted a cashless economy. Despite these advancements, several challenges continue to hinder the widespread adoption of FinTech services. Issues such as cybersecurity threats, data privacy concerns, lack of digital literacy, inadequate technological infrastructure in rural areas, and

regulatory complexities affect users' trust and participation in digital financial services. Furthermore, while traditional financial institutions increasingly adopt technological innovations to improve operational efficiency, the extent of their effectiveness and impact on customer satisfaction requires further examination. There is also a need to understand how regulatory bodies such as the Reserve Bank of India (RBI) balance innovation with security and risk management. Therefore, this study seeks to analyse the progress of FinTech and its impact on the global and Indian financial sectors, focusing on financial inclusion, technological adoption, digital accessibility, and regulatory support among users.

### RESEARCH METHODOLOGY

The present study is descriptive and analytical in nature. Primary data were collected through a structured questionnaire administered to 176 respondents selected using convenience sampling. The study focused on understanding the progress of FinTech and its impact on the global and Indian financial sectors. Secondary data were gathered from journals, books, research articles, government reports, RBI publications, and online databases. The questionnaire consisted of demographic variables and statements related to FinTech adoption, financial inclusion, technological advancement, digital accessibility, security, and regulatory support measured using a five-point Likert scale. The collected data were analyzed using Percentage Analysis, Mean Score Analysis, and One-Sample t-Test. Statistical analysis was carried out to evaluate respondents' perceptions and test the formulated hypotheses regarding FinTech adoption and its impact.

### LIMITATIONS OF THE STUDY

The study is subject to certain limitations. Firstly, the research is confined to a sample of 176 respondents, which may not fully represent the entire population. Secondly, the study relies primarily on respondents' opinions and perceptions, which may be influenced by personal biases. Thirdly, the data were collected using convenience sampling, limiting the generalizability of the findings. The study focuses only on selected dimensions of FinTech, such as financial inclusion, technological adoption, digital accessibility, and regulatory support. Furthermore, rapidly changing technological innovations and regulatory frameworks may affect the relevance of the findings over time. Finally, geographical limitations may influence the results.

### SCOPE OF THE STUDY

The present study focuses on examining the progress of Financial Technology (FinTech) and its impact on the global and Indian financial sectors. It covers key areas such as financial inclusion, technological adoption, digital accessibility, customer convenience, security, and regulatory support. The study evaluates how FinTech services bridge the gap between financial institutions and unbanked or underserved populations, particularly in rural and remote areas. It also examines the adoption of emerging technologies such as Artificial Intelligence (AI), Blockchain, and Cloud Computing by financial institutions to improve operational efficiency and reduce costs. Further, the study assesses users' perceptions regarding digital payment systems, mobile banking, online financial services, and personalized customer experiences. The role of regulatory authorities, especially the Reserve Bank of India (RBI), in ensuring security, privacy, and risk management is also analyzed. The findings of the study are expected to contribute to policymakers, financial institutions, researchers, and FinTech service providers in understanding current trends and future opportunities in the FinTech ecosystem.

### DATA ANALYSIS

**Table - 1**  
**Demographic Profile of Respondents**

Variables	Category	Frequency	Percentage (%)
Gender	Male	102	58.0
	Female	74	42.0
	Total	176	100.0
Age Group	Below 20 Years	18	10.2

	21–30 Years	72	40.9
	31–40 Years	46	26.1
	41–50 Years	28	15.9
	Above 50 Years	12	6.8
	Total	176	100.0
Marital Status	Married	98	55.7
	Unmarried	78	44.3
	Total	176	100.0
Educational Qualification	School Level	12	6.8
	Undergraduate	52	29.5
	Postgraduate	72	40.9
	Professional Degree	30	17.0
	Doctorate	10	5.8
	Total	176	100.0
Occupation	Student	35	19.9
	Government Employee	30	17.0
	Private Employee	62	35.2
	Business	20	11.4
	Self-employed	18	10.2
	Others	11	6.3
	Total	176	100.0
Monthly Income	Below ₹20,000	38	21.6
	₹20,001–₹40,000	56	31.8
	₹40,001–₹60,000	42	23.9
	₹60,001–₹80,000	24	13.6
	Above ₹80,000	16	9.1
	Total	176	100.0
Place of Residence	Rural	68	38.6
	Urban	108	61.4
	Total	176	100.0

**Source: Primary Data**

The demographic profile of the respondents reveals that out of 176 respondents, 102 (58.0%) were male and 74 (42.0%) were female, indicating that male respondents constituted the majority of the sample. With regard to age, the largest proportion of respondents (40.9%) belonged to the 21–30 years age group, followed by 31–40 years (26.1%), indicating that young adults are the major users of FinTech services. Concerning marital status, 55.7% of the respondents were married, while 44.3% were unmarried. Regarding educational qualification, a majority of respondents (40.9%) were postgraduates, followed by undergraduates (29.5%), suggesting a relatively educated sample. In terms of occupation, private employees accounted for the highest percentage (35.2%), followed by students (19.9%). Regarding monthly income, most respondents (31.8%) earned between ₹20,001 and ₹40,000 per month. Furthermore, 61.4% of respondents resided in urban areas, while 38.6% belonged to rural areas, indicating greater FinTech penetration in urban locations.

**Table - 2****Respondents' Opinion on the Impact and Challenges of FinTech (N = 176)**

S.No	Statement	SD (1)	D (2)	N (3)	A (4)	SA (5)
1	FinTech services are easy to access and use	5	10	18	78	65

2	FinTech has reduced the time required for financial transactions	4	8	15	82	67
3	FinTech services are more convenient than traditional banking	6	12	20	76	62
4	FinTech has improved financial inclusion in India	8	14	22	72	60
5	FinTech helps individuals manage their finances effectively	7	15	25	75	54
6	FinTech services are secure and trustworthy	10	18	30	70	48
7	FinTech has reduced dependency on cash transactions	5	12	18	80	61
8	FinTech has increased transparency in financial transactions	8	15	24	77	52
9	FinTech promotes innovation in the banking sector	4	10	19	81	62
10	FinTech improves customer satisfaction in financial services	7	12	21	79	57
11	FinTech contributes to economic growth in India	5	11	20	83	57
12	FinTech facilitates international financial transactions efficiently	9	14	28	73	52
13	FinTech has transformed the traditional banking system	5	10	19	79	63
14	FinTech has positively impacted the global financial sector	6	12	24	78	56
15	FinTech encourages cashless transactions	4	9	15	81	67
16	FinTech will play a significant role in the future of finance	3	8	14	80	71
17	Cybersecurity risks are a major concern in FinTech	4	9	18	78	67
18	Lack of digital literacy affects FinTech adoption	6	12	22	76	60
19	Privacy concerns discourage users from using FinTech services	8	15	25	74	54
20	Technical issues sometimes affect FinTech transactions	7	13	24	79	53
21	Government regulations are important for FinTech growth	3	7	15	82	69

**Source: Primary Data**

The findings indicate a highly positive perception of FinTech among respondents. A majority of respondents agreed or strongly agreed that FinTech services are easy to access and use, reduce transaction time, and offer greater convenience than traditional banking systems. Respondents also acknowledged that FinTech has improved financial inclusion, enhanced financial management, and reduced dependency on cash transactions. Most participants agreed that FinTech promotes innovation in the banking sector, improves customer satisfaction, contributes to economic growth, and positively impacts both Indian and global financial systems. The respondents strongly believed that FinTech would play a significant role in the future of finance and encourages cashless transactions. At the same time, respondents recognized challenges such as cybersecurity risks, lack of digital literacy, privacy concerns, and technical issues that may hinder FinTech adoption. Moreover, a substantial majority agreed that government regulations are

essential for ensuring the sustainable growth, security, and trustworthiness of FinTech services.

**TESTING OF HYPOTHESIS**

**Table - 3**  
**One-Sample t-Test for Financial Inclusion**

Variable	Mean	SD	df	t-value	Sig.	Result
Financial Inclusion	3.95	1.06	175	11.89	0.000	H <sub>0</sub> Rejected

The table shows that the mean score for Financial Inclusion is 3.95, which is above the neutral value of 3. The calculated t-value is 11.89 and the significance value is 0.000, which is less than 0.05. Therefore, the null hypothesis is rejected. It is concluded that FinTech significantly improves financial inclusion among unbanked and underserved people

**Table - 4**  
**One-Sample t-Test for Technological Adoption**

Variable	Mean	SD	df	t-value	Sig.	Result
Technological Adoption	4.06	0.96	175	14.66	0.000	H <sub>0</sub> Rejected

The mean score for Technological Adoption is 4.06, indicating a high level of agreement among respondents. The calculated t-value is 14.66 and the significance value is 0.000, which is less than 0.05. Hence, the null hypothesis is rejected. It is concluded that the adoption of technologies such as AI, Blockchain, and Cloud Computing significantly improves the efficiency of financial institutions.

**Table - 5**  
**One-Sample t-Test for Digital Accessibility**

Variable	Mean	SD	df	t-value	Sig.	Result
Digital Accessibility and User Experience	4.08	0.97	175	14.76	0.000	H <sub>0</sub> Rejected

The mean score for Digital Accessibility is 4.08, showing that respondents have a positive opinion about digital financial services. The calculated t-value is 14.76 and the significance value is 0.000, which is less than 0.05. Therefore, the null hypothesis is rejected. It is concluded that user-friendly digital platforms and 24/7 accessibility significantly influence the adoption of FinTech services.

**Table - 6**  
**One-Sample t-Test for Regulatory Support**

Variable	Mean	SD	df	t-value	Sig.	Result
Regulatory Support and Security	3.97	1.03	175	12.49	0.000	H <sub>0</sub> Rejected

The mean score for Regulatory Support is 3.97, indicating respondents' agreement regarding the importance of regulations and security. The calculated t-value is 12.49 and the significance value is 0.000, which is less than 0.05. Hence, the null hypothesis is rejected. It is concluded that regulatory support, security, and privacy protection significantly influence trust and adoption of FinTech services.

**FINDINGS**

The study revealed that FinTech has brought significant changes to the global and Indian financial sectors by enhancing accessibility, efficiency, and convenience in financial services. The demographic analysis showed that the majority of respondents were young adults, postgraduates, private-sector employees, and urban residents, indicating a higher level of awareness and usage of FinTech services among these groups. The respondents expressed positive opinions regarding the ease of use, convenience, and speed of FinTech services. They agreed that FinTech has reduced transaction time, encouraged cashless transactions, improved financial inclusion, and enhanced

customer satisfaction. The study further found that FinTech plays an important role in promoting innovation within the banking sector and contributes positively to economic growth. However, cybersecurity risks, privacy concerns, lack of digital literacy, and occasional technical issues were identified as major challenges affecting FinTech adoption. The hypothesis testing results confirmed that financial inclusion, technological adoption, digital accessibility, and regulatory support have a significant positive influence on the growth and impact of FinTech. Overall, the study concludes that FinTech has transformed traditional financial services and has become a key driver of financial sector development in India and across the world.

### SUGGESTIONS

Based on the findings, the study suggests that financial institutions and policymakers should take proactive measures to enhance the adoption and effectiveness of FinTech services. Greater efforts should be made to extend digital financial services to rural and underserved areas in order to improve financial inclusion. Government agencies, banks, and FinTech companies should conduct awareness and digital literacy programs to educate users about the benefits and safe usage of digital financial services. Strengthening cybersecurity measures and data protection frameworks is essential to increase user trust and confidence. Financial institutions should continue investing in advanced technologies such as Artificial Intelligence, Blockchain, and Cloud Computing to improve operational efficiency and service quality. Regulatory authorities should maintain a balanced approach that encourages innovation while ensuring customer protection, privacy, and risk management. In addition, FinTech service providers should develop more user-friendly and multilingual platforms to cater to diverse customer groups. Collaboration among regulators, traditional banks, and FinTech firms can further strengthen the financial ecosystem and ensure sustainable growth of the FinTech sector in the future.

### CONCLUSION

The study concludes that FinTech has emerged as a transformative force in both the global and Indian financial sectors, significantly improving the accessibility, efficiency, and convenience of financial services. The findings indicate that FinTech has strengthened financial inclusion by extending banking and financial services to underserved populations, while also promoting cashless transactions and enhancing customer satisfaction. The adoption of advanced technologies such as Artificial Intelligence, Blockchain, Cloud Computing, and UPI has improved operational efficiency and accelerated digital transformation within financial institutions. Statistical analysis confirmed that financial inclusion, technological adoption, digital accessibility, and regulatory support significantly influence the growth and acceptance of FinTech services. Despite its numerous benefits, challenges such as cybersecurity threats, privacy concerns, digital literacy gaps, and technical issues continue to affect user confidence and adoption. Therefore, sustained efforts from policymakers, regulators, financial institutions, and FinTech firms are essential to ensure secure, inclusive, and sustainable growth of the FinTech ecosystem, thereby contributing to overall economic development.

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