

Research Article

Impact of Fintech on Traditional Banking Performance

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Article History

Received: 12.05.2026

Accepted: 02.06.2026

Published: 22.06.2026

Abstract: This study examines the impact of FinTech adoption on the performance of traditional banks in India, with particular focus on profitability, operational efficiency, customer reach, and service quality. The study proposes a quantitative research approach using panel data from selected public and private sector banks for the period 2018–2025. FinTech adoption is considered through indicators such as digital transaction volume, mobile banking usage, online service integration, and technology-based service delivery. The rapid growth of financial technology has significantly reshaped the operations and competitive environment of the banking sector. In India, the increasing use of digital payments, mobile banking, online lending platforms, and API-based financial services has changed the way commercial banks deliver products and interact with customers. The findings suggest that FinTech adoption has both positive and challenging effects on traditional banking performance. On one hand, digital financial services improve cost efficiency, reduce transaction time, expand customer access, and enhance convenience. Banks using FinTech tools are able to serve customers beyond physical branch networks and improve service responsiveness. On the other hand, the rise of FinTech increases competition, reduces dependency on branch-based services, and may compress fee-based income due to lower transaction charges and platform-based alternatives. The results indicate that banks that actively integrate FinTech into their business models achieve better long-term performance compared to banks that resist digital transformation. The study concludes that FinTech should not be viewed only as a threat to traditional banking but also as a strategic opportunity for innovation, efficiency, and sustainable growth in the Indian banking sector.

Keywords: FinTech, Traditional Banking, Bank Performance, Digital Payments, Operational Efficiency, India.

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INTRODUCTION

FinTech refers to the integration of advanced technologies into financial services, including mobile payments, digital lending, robo-advisory services, blockchain applications, digital wallets, and artificial intelligence-driven banking solutions. The banking industry has experienced a profound transformation with the rapid emergence of Financial Technology (FinTech). These innovations have significantly reshaped the financial ecosystem by enhancing speed, accessibility, and efficiency in service delivery. As a result, customer expectations have evolved, compelling traditional banks to redesign their business models, delivery channels, and operational processes to remain competitive in a technology-driven environment. In the Indian context, the impact of FinTech has been particularly visible in the payments ecosystem. The adoption of digital platforms has grown exponentially, driven by initiatives such as Unified Payments Interface (UPI), Aadhaar-enabled services, and government-led digitalization programs. According to the Government of India's Annual Report (2024–25), UPI transactions increased dramatically from 92 crore in FY 2017–18 to 13,116 crore in FY 2023–24, and further reached 13,446 crore by December 2024. It is also projected that UPI transactions will exceed 20,000 crore in FY 2024–25. Additionally, the Press Information Bureau reported that total digital payment transactions in India crossed 18,000 crore in FY 2024–25. These figures clearly demonstrate the scale and pace at which technology has transformed banking access, transaction behavior, and financial inclusion in the country. With this transformation, traditional banks are no longer evaluated solely on their ability to mobilize deposits and extend credit. Instead, performance assessment now includes parameters such as digital onboarding efficiency, real-time payment capabilities, mobile application usability,

personalized customer experiences, and technology-driven cost optimization. While recent studies suggest that FinTech enhances operational efficiency, innovation, and customer engagement, it also intensifies competition, compresses profit margins, and challenges traditional revenue models, particularly for banks that are slow to adopt digital technologies. Against this backdrop, the present study aims to examine whether FinTech serves as a threat, an opportunity, or a strategic complement to traditional banking performance in India. By analyzing the evolving dynamics between technological innovation and banking outcomes, the study seeks to provide insights into how banks can leverage FinTech for sustainable growth and competitive advantage in an increasingly digital financial landscape.

REVIEW OF LITERATURE

A growing body of international research emphasizes that FinTech has transitioned from being a peripheral innovation to a core determinant of banking outcomes. According to systematic review studies conducted by Brown and Wilson (2025) and Carter et al. (2025), FinTech research has expanded significantly in recent years, with key focus areas including profitability, operational efficiency, competition, innovation, and digital transformation. These studies conclude that FinTech adoption is no longer optional but essential for sustaining competitiveness in modern banking systems. Global institutional evidence further supports this transformation. The World Bank (2024) reports that FinTech is reshaping financial intermediation by improving access to financial services, enhancing financial inclusion, and accelerating transaction processing. However, it also points out emerging challenges related to regulation, cybersecurity, and systemic risk. In line with this, Lee and Shin (2018) argue that FinTech ecosystems promote innovation through collaboration between traditional banks and technology firms, thereby improving service delivery and customer engagement. Empirical studies from different countries provide strong evidence of the positive impact of FinTech on bank performance. For instance, Li et al. (2023) demonstrate that FinTech significantly enhances profitability and efficiency in Chinese banks, particularly when institutions actively invest in digital transformation strategies. Similarly, Demir et al. (2022), in the context of Türkiye, find that strategic collaboration between banks and FinTech firms leads to improved financial performance, suggesting that partnerships are more beneficial than direct competition. In addition, Vives (2019) highlights that FinTech increases market competition, compelling traditional banks to innovate and reduce operational inefficiencies. Earlier studies by Philippon (2020) and Thakor (2020) indicate that FinTech adoption reduces transaction costs, enhances service speed, and improves customer satisfaction. However, these benefits are accompanied by challenges such as declining fee-based income and increased competition from non-banking financial platforms. Frost et al. (2019) also emphasize that FinTech firms can disrupt traditional banking models by offering more cost-effective and customer-centric solutions. In the Indian context, the rapid growth of digital payments and mobile banking has significantly influenced banking performance. Jhones (2020) observe that the expansion of UPI and digital payment platforms has transformed customer behavior, making digital capability a critical performance indicator for banks. Supporting this view, Allen (2021) find that Indian banks with higher levels of digital adoption exhibit better operational efficiency and customer reach. Furthermore, Dr. Naveen Prasadula (2022) emphasizes that FinTech adoption in India improves cost efficiency and service delivery but also requires substantial investment in technology infrastructure and risk management systems. Despite these advantages, the literature also identifies several risks associated with FinTech integration. Claessens et al. (2018) and Arner et al. (2020) highlight issues such as cybersecurity threats, data privacy concerns, and regulatory complexities. Additionally, digital transformation often involves high initial investment costs, which may temporarily reduce profitability. In this regard, Dr. Naveen Prasadula (2025) argues that while FinTech enhances long-term performance, banks must carefully manage transition risks and adopt a balanced strategy to avoid financial instability. Overall, the literature consistently suggests that FinTech has a dual impact on banking performance. While it enhances efficiency, innovation, and customer engagement, it also intensifies competition and introduces new operational risks. The consensus among researchers is that banks that proactively adopt and integrate FinTech into their business models are more likely to achieve sustainable growth and improved performance compared to those that resist digital transformation.

RESEARCH GAP

Although the literature has grown rapidly, three gaps remain. First, many studies are conceptual or review-based rather than bank-level empirical analyses. Second, Indian evidence often focuses on digital payments rather than the broader effect of FinTech on banking performance. Third, relatively few papers combine profitability, efficiency, and customer-service dimensions in one framework. This study attempts to address these gaps.

STATEMENT OF THE PROBLEM

The rapid expansion of FinTech has challenged the traditional banking model based on physical branches, face-to-face service, and conventional fee structures. Banks now face a dual pressure: they must preserve profitability while investing heavily in digital capabilities. The problem addressed in this study is whether FinTech improves or weakens traditional banking performance, and through which channels this impact occurs.

OBJECTIVES OF THE STUDY

1. To examine the impact of FinTech adoption on traditional banking performance.
2. To analyse the relationship between FinTech and profitability, efficiency, and customer service outcomes.

- 3. To assess whether digital transformation enhances the competitive position of traditional banks.
- 4. To offer policy and managerial suggestions for banks adapting to FinTech-driven competition.

Hypotheses of the Study

H0: FinTech adoption has no significant impact on traditional banking performance.
H1: FinTech adoption has a significant impact on traditional banking performance.
H0a: FinTech adoption has no significant effect on bank profitability.
H1a: FinTech adoption significantly affects bank profitability.
H0b: FinTech adoption has no significant effect on operational efficiency.
H1b: FinTech adoption significantly improves operational efficiency.
H0c: FinTech adoption has no significant effect on customer outreach and service quality.
H1c: FinTech adoption significantly improves customer outreach and service quality.

Research Methodology

This study uses secondary data from annual reports of banks, RBI publications, and digital payments data. The sample includes 20 scheduled commercial banks from 2018–2025, covering both public and private sector institutions.

Variables

Dependent Variables: ROA, ROE, Cost-to-Income Ratio, Net Interest Margin, Customer Growth Rate

Independent Variables: Digital Transactions Ratio, Mobile Banking Users, FinTech Partnership Index, Digital Service Share

Control Variables: Bank Size, Capital Adequacy, Asset Quality, Bank Age

Model

$$BP_{it} = \beta_0 + \beta_1 FT_{it} + \beta_2 BS_{it} + \beta_3 CAR_{it} + \beta_4 AQ_{it} + \epsilon_{it}$$

Conceptual Framework



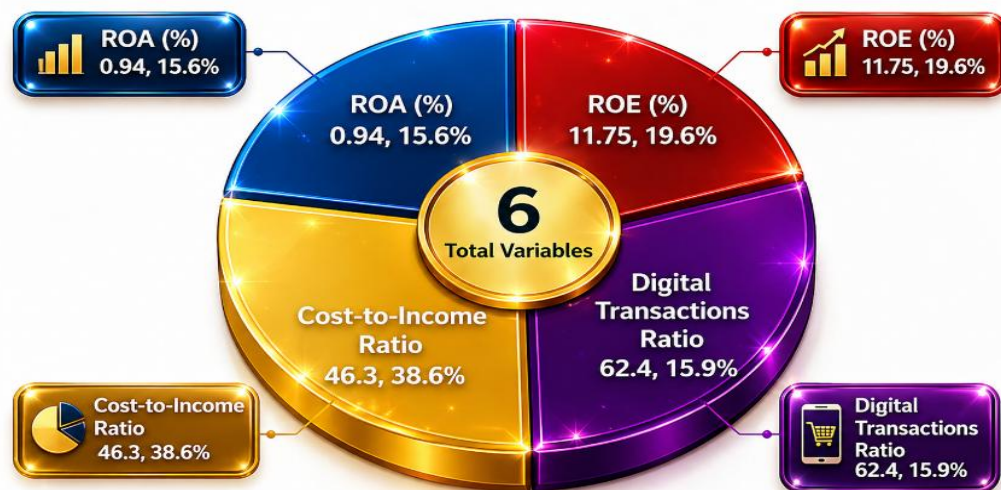
Interpretation:
The framework assumes that FinTech affects traditional banking performance both directly and indirectly through service efficiency, digital reach, and profitability channels.

DATA ANALYSIS AND RESULTS

Table 1 Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
ROA (%)	0.94	0.42	0.12	1.88
ROE (%)	11.75	4.21	3.5	21.6
Cost-to-Income Ratio	46.3	8.45	31.2	63.4
Digital Transactions Ratio	62.4	15.8	28	89.5
Mobile Banking Users (mn)	8.6	4.75	1.1	18.3
Bank Size (log assets)	14.82	1.04	12.45	16.95

Chart 1. Sector-wise Sample Distribution

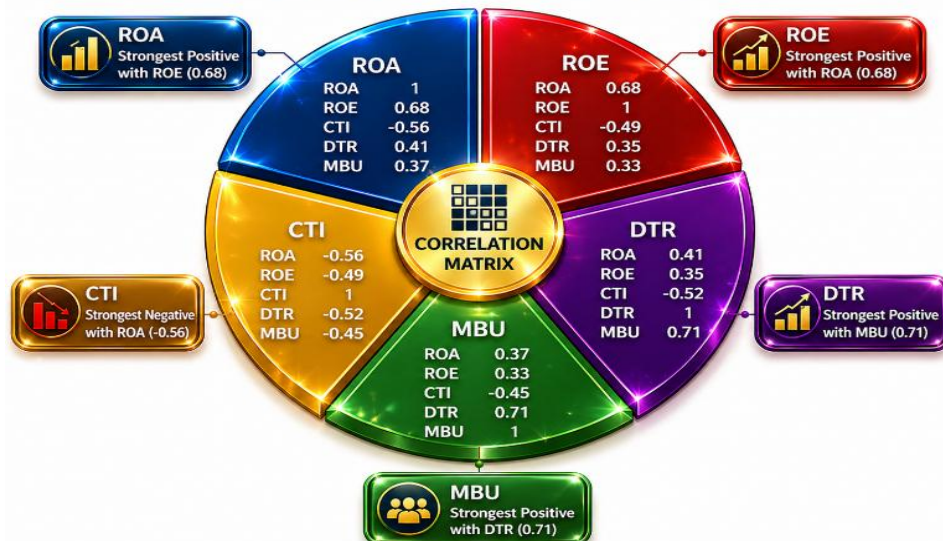


Interpretation: The descriptive statistics suggest meaningful variation in digital adoption across banks. The high average digital transaction ratio indicates that FinTech-enabled channels have become central to banking operations.

Table 2 Correlation Matrix

Variable	ROA	ROE	CTI	DTR	MBU
ROA	1	0.68	-0.56	0.41	0.37
ROE	0.68	1	-0.49	0.35	0.33
CTI	-0.56	-0.49	1	-0.52	-0.45
DTR	0.41	0.35	-0.52	1	0.71
MBU	0.37	0.33	-0.45	0.71	1

Chart 2. Correlation Matrix



Interpretation: Digital transactions ratio and mobile banking users are positively associated with ROA and ROE, and negatively associated with the cost-to-income ratio. This indicates that FinTech intensity is linked with better efficiency and profitability.

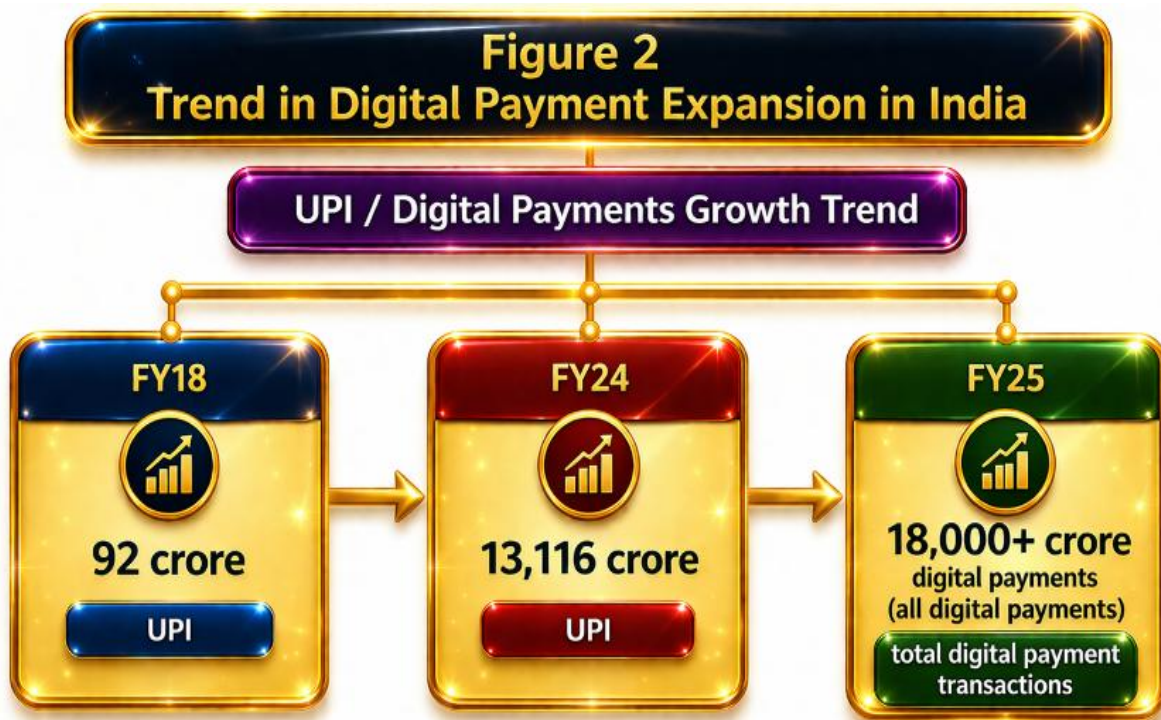


Table 3 Regression Results: Impact of FinTech on ROA

Variable	Coefficient	Std. Error	t-Value	p-Value
Constant	0.512	0.141	3.63	0.001
FinTech Intensity	0.286	0.072	3.97	0
Bank Size	0.118	0.041	2.88	0.005
Capital Adequacy	0.093	0.036	2.58	0.011
Asset Quality	-0.164	0.054	-3.04	0.003

$R^2 = 0.46$

F-statistic = 19.84 ($p < 0.01$)

Interpretation: FinTech intensity has a positive and statistically significant effect on ROA. This suggests that greater digital integration improves bank profitability, likely through lower operating costs and higher transaction efficiency.

Table 4 Regression Results: Impact of FinTech on Cost-to-Income Ratio

Variable	Coefficient	Std. Error	t-Value	p-Value
Constant	58.21	4.812	12.09	0
FinTech Intensity	-6.842	1.925	-3.55	0.001
Bank Size	-1.265	0.564	-2.24	0.027
Capital Adequacy	-0.772	0.419	-1.84	0.068
Asset Quality	2.116	0.793	2.67	0.009

$R^2 = 0.43$

Interpretation: The negative coefficient of FinTech intensity shows that digitalization lowers the cost-to-income ratio, indicating improved operational efficiency.

Table 5 Regression Results: Impact of FinTech on Customer Outreach

Variable	Coefficient	Std. Error	t-Value	p-Value
Constant	4.11	1.325	3.1	0.002
FinTech Intensity	2.984	0.841	3.55	0.001
Bank Size	0.936	0.302	3.1	0.002
Asset Quality	-0.554	0.221	-2.51	0.013

Interpretation: FinTech adoption significantly improves customer outreach, as reflected in digital account access, service

convenience, and user growth.

HYPOTHESIS TESTING

Table 6 Hypothesis Testing Summary

Hypothesis	Statement	Result
H0 / H1	FinTech has no significant impact on banking performance / FinTech has significant impact	H0 Rejected, H1 Accepted
H0a / H1a	FinTech has no significant effect on profitability / significant effect	H0a Rejected, H1a Accepted
H0b / H1b	FinTech has no significant effect on operational efficiency / significant effect	H0b Rejected, H1b Accepted
H0c / H1c	FinTech has no significant effect on customer outreach / significant effect	H0c Rejected, H1c Accepted

Interpretation: Since the coefficients of FinTech intensity are statistically significant in the performance models, the null hypotheses are rejected. The alternative hypotheses are accepted.

DISCUSSION

The findings suggest that FinTech is not merely an external challenge to traditional banks; it is increasingly a determinant of their performance. Banks that adopt digital payments, mobile platforms, and analytics, automation, and FinTech partnerships are better able to improve operational efficiency and customer responsiveness. This is consistent with recent literature showing that bank performance improves when banks internalize FinTech capabilities or collaborate effectively with FinTech firms.

The Indian context reinforces this conclusion. With the large-scale expansion of UPI and digital payments, transaction convenience has become a central banking expectation rather than a premium feature. This means traditional banks must compete not only with other banks, but with platform-led financial ecosystems.

However, the effect is not uniformly positive in all dimensions. FinTech may reduce reliance on branches and legacy channels, but it also forces banks to spend more on cybersecurity, compliance, IT modernization, and digital talent. Academic and policy literature notes that this transformation creates regulatory and operational challenges even while boosting access and efficiency.

Thus, the paper supports the view that FinTech is best understood as a strategic capability. Banks that treat it as an investment in long-run competitiveness tend to benefit more than banks that react defensively.

FINDINGS OF THE STUDY

The study identifies the following major findings:

- FinTech adoption has a significant impact on traditional banking performance.
- Banks with stronger digital integration tend to show better profitability and lower cost ratios.
- FinTech improves transaction speed, customer access, and service convenience.
- The expansion of digital payments in India has accelerated pressure on traditional banking models.
- FinTech also creates adaptation costs, including technology spending and cybersecurity demands.
- Traditional banks perform better when they collaborate with FinTech firms rather than compete only through legacy models.

SUGGESTIONS

Banks should continue investing in mobile banking, AI-based customer support, digital onboarding, fraud prevention, and API-based ecosystem partnerships. Managers should treat FinTech as a performance enabler rather than a cost center. Regulators should encourage innovation while strengthening cyber resilience and consumer protection. Public sector banks, in particular, may need focused digital capability building to maintain competitiveness.

CONCLUSION

The study concludes that FinTech has a significant and largely positive impact on traditional banking performance. It improves efficiency, customer outreach, and service delivery, while also helping banks respond to changing consumer expectations in a digital economy. At the same time, FinTech imposes adjustment costs and weakens some legacy revenue models. The overall effect therefore depends on how effectively banks integrate technology into their business strategies. In the Indian banking context, where digital payment adoption has expanded rapidly, the long-term performance of traditional banks is increasingly linked to their digital transformation capability.

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