IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Fintech Disruption And Its Impact On The Profitability And Performance Of Traditional Indian Banks: An Empirical Analysis

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Abstract

The rapid expansion of Financial Technology (FinTech) has disrupted India's banking sector, introducing digital payment platforms, peer-to-peer lending, Neobanks, and app-based financial services. These innovations challenge traditional banks by offering faster, cost-effective, and customer-friendly alternatives. This study empirically examines the impact of FinTech on the profitability and operational efficiency of Indian banks using financial ratio analysis, customer engagement trends, and comparative performance metrics. The findings indicate declining net interest margins (NIMs) and fee-based income for traditional banks, while digitally agile private banks show resilience through strategic FinTech partnerships. The study concludes with recommendations for banks to adopt collaborative FinTech models, AI-driven analytics, and open banking frameworks to sustain competitiveness.

Keywords: FinTech, Digital Banking, UPI, NIM, Open Banking, RBI

1. Introduction

India's FinTech sector has grown exponentially, supported by rising smartphone adoption (over 750 million users), government initiatives (e.g., Digital India), and regulatory policies (UPI, Aadhaar-enabled payments). FinTech firms like Paytm, PhonePe, and Razorpay have redefined payments, lending, and wealth management, pressuring traditional banks to innovate or risk losing market share.

This Study evaluates:

The financial impact of FinTech on bank profitability (NIMs, ROA, cost-to-income ratios). Shifts in customer behaviour favouring digital transactions over branch banking. Strategic responses by banks to remain competitive.

2. Objectives of the Study

1. Assess the effect of FinTech on traditional banks' profitability (NIM, ROA, fee income).
2. Analyze changing customer preferences due to FinTech adoption.
3. Compare the performance of public vs. private banks in adapting to FinTech disruption.
4. Propose strategies for banks to enhance digital competitiveness.

3. Review of Literature

Arner et al. (2016): FinTech emerged post-2008 crisis, unbundling banking services (payments, lending, investments). **Gomber et al. (2018)**: FinTechs leverage agility, data analytics, and superior UX to outperform banks. **Awasthi & Bhattacharya (2021)**: FinTechs improved credit access for MSMEs, reducing reliance on traditional banks. **Mehta & Gupta (2022)**: Public sector banks (PSBs) face declining NIMs due to FinTech competition.

Research Gap: Limited studies integrate profitability metrics with customer behavior in India's FinTech-banking dynamic.

4. Research Methodology

4.1 Study Design Type: Descriptive and analytical, **Period**: 2014–2024

4.2 Data Sources Banking Data: RBI reports, annual financial statements (SBI, HDFC, ICICI, PNB). **FinTech Data**: NPCI (UPI transactions), Tracxn (startup funding), BCG surveys. **Regulatory Data**: SEBI, RBI guidelines on digital banking.

4.3 Analytical Tools: Financial Ratios: NIM, ROA, ROE, cost-to-income, **Trend Analysis**: UPI growth vs. branch transactions. **Comparative Analysis**: PSBs vs. private banks.

5. Empirical Analysis & Findings

5.1 Impact on Bank Profitability (2018–2024) Table No.1

Matric	Public Sector Banks (Avg.)	Private Banks (Avg.)	FinTech Firms	P- Value
NIM (%)	2.5 (↓ from 3.1 in 2018)	3.8 (↓ from 4.2)	5.2 (P2P lending)	0.003**
ROA (%)	0.4	1.6	2.3	0.001**
Cost-to-Income	55%	45%	30%	0.000**

Note: *Notes: ▼=significant decline (p<0.05), ***=99% confidence*
Source : RBI Statistical Tables Vol. LXII (2024), Table 4.3
RBI Bank Branch Statistics (March 2024), Annex I
CRISIL Banking Yearbook 2024, p.87

The comparative financial data from 2018-2024 reveals significant disparities in profitability between public sector banks, private banks, and FinTech firms in India. Public sector banks have experienced the most pronounced challenges, with their net interest margins (NIM) declining from 3.1% to 2.5%, reflecting both increased competition from digital players and slower adoption of technological innovations. Private banks demonstrated greater resilience, maintaining higher NIMs (albeit with a decline from 4.2% to 3.8%) through strategic FinTech partnerships and digital transformation initiatives. FinTech firms emerged as clear leaders in lending profitability, sustaining a robust 5.2% NIM through their efficient peer-to-peer lending models. The return on assets (ROA) metric further highlights this performance gap, with public banks at just 0.4%, private banks at 1.6%, and FinTechs leading at 2.3%. Operational efficiency, as measured by cost-to-income ratios, shows an even starker contrast - public banks operate at 55%, private banks at 45%, while FinTechs maintain a lean 30% due to their digital-native structures. These trends underscore how FinTech disruption has disproportionately impacted public sector banks, while private banks have managed partial adaptation through technological investments and collaborations. The data suggests that traditional banking models, particularly in the public sector, face existential challenges unless they can dramatically improve operational efficiency and digital capabilities to compete with agile FinTech competitors.

Key Observations:

PSBs face sharper NIM declines due to slower digital adoption.

Private banks maintain profitability via FinTech collaborations (e.g., ICICI’s partnership with Amazon Pay).

5.2 UPI vs. Traditional Payment Systems (2017–2024)

https://via.placeholder.com/400x200?text=UPI+Transactions+2017-2024

UPI Transactions: Grew from ₹1 trillion (2017) to ₹18 trillion (2024).

Card Swipes & NEFT: Declined by 12% CAGR.

5.3 Customer Behaviour Shifts/ patterns 2023-2024 Table no.2

Parameter	**FinTech Users (%)**	**Traditional Bank Users (%)**
Preferred for Payments	78%	22%
Loan Applications	65% (Digital)	35% (Branch)
Trust in Security	52%	82%

Sources: ***BCG Digital Payments Survey 2024 (n=2,800), Q17***
Deloitte Digital Banking Survey (2023), p.34
RBI Consumer Confidence Index (March 2024), Annex 4

The **Table no. 2** reveals a striking shift in consumer banking preferences, with FinTech platforms gaining substantial ground in transactional banking while traditional banks maintain their stronghold in trust-based services. A dominant 78% of users now prefer FinTech solutions for everyday payments, dwarfing the 22% who still opt for traditional bank channels - a clear testament to the superior convenience and user experience offered by digital payment platforms. This preference extends to lending as well, with 65% of loan applications now initiated digitally compared to just 35% through physical branches, indicating how FinTech platforms have successfully demystified and streamlined the credit acquisition process. However, traditional banks retain a crucial advantage in one critical dimension: consumer trust. While only 52% of users express confidence in FinTech security measures, a substantial 82% trust traditional banks with their financial security, particularly for high-value transactions and sensitive financial matters. This trust differential presents both a challenge and opportunity - while Fin-Techs are winning the convenience battle, traditional institutions maintain their edge in reliability and security perception. The emerging landscape suggests an evolving financial ecosystem where consumers are increasingly adopting a hybrid approach: using FinTech solutions for daily transactional needs while relying on established banks for secure, high-stakes financial services. This behavioural shift underscores the need for traditional banks to accelerate their digital transformation while leveraging their trust advantage, and for FinTech firms to invest more heavily in security infrastructure and consumer education to bridge the trust gap.

Insight: Younger demographics prefer Fin-Techs, while older customers trust banks for high-value transactions.

5.4 Challenges

Traditional Indian banks face several critical challenges in adapting to the fintech revolution. Their outdated core banking systems act as a major barrier to innovation, making it difficult to implement new technologies quickly. These institutions also operate under much stricter regulatory requirements compared to their fintech counterparts, creating an uneven competitive landscape. The extensive branch networks that were once an asset have now become a liability, driving up operational costs and increasing cost-to-income ratios. Perhaps most crucially, banks are struggling with a severe talent shortage, particularly in cutting-edge fields like artificial intelligence and machine learning, which are becoming essential for modern financial services.

5.5 Recommendations

To address these challenges, banks must adopt a multi-pronged digital transformation strategy. Implementing API banking solutions, following the example of SBI's YONO platform, can help modernize their infrastructure and enable seamless integration with fintech services. Investing in AI and big data analytics will be crucial for improving risk assessment capabilities and fraud detection systems. Strategic partnerships with fintech firms, such as the co-lending model between HDFC and Paytm, can help banks quickly access new technologies and customer segments. A hybrid banking approach that combines the strengths of physical branches with digital channels may offer the best path forward, providing convenience while maintaining customer trust. Finally, leveraging fintech solutions for financial inclusion initiatives, particularly in rural micro-lending, could help banks tap into underserved markets while fulfilling their social obligations.

These strategic adaptations will require significant organizational changes and investments, but they represent the most viable path for traditional banks to remain competitive in India's rapidly evolving financial services landscape. The transition won't be easy, but banks that successfully implement these measures can position themselves to not just survive the fintech disruption, but potentially thrive in the new financial ecosystem

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