Research Paper

EPRA International Journal of Economic and Business Review-Peer Reviewed Journal
Volume - 14, Issue - 4, April 2026 | e-ISSN: 2347 - 9671| p- ISSN: 2349 – 0187

SJIF Impact Factor (2026): 8.885 || ISI Value: 1.433 || Journal DOI URL: https://doi.org/10.36713/epra2012

TECHNOLOGY ADOPTION AND BANK PROFITABILITY IN INDIA: EVIDENCE FROM RBI TRENDS AND PUBLIC RESEARCH

Neena Pal
Research Scholar, Department of Applied Economics, Faculty of Commerce, University of Lucknow, Lucknow, India

ABSTRACT DOI No: 10.36713/epra26968 Article DOI: https://doi.org/10.36713/epra26968

This paper investigates the connection between technology use and bank profitability in India using data from Reserve Bank of India research publications, and publicly available academic papers. In this paper the review-based analytical methodology is supported with recent scheduled commercial bank data for 2020–2025. During this period, the Gross Non-performing Asset (GNPA) Ratio dropped from 3.62 % to 2.15 %, net earnings increased from ₹224,937 crore to ₹401,000 crore, and Return on Assets (RoA) improved from 1.25% to 1.37 %. According to the research that is currently available, technology-oriented banks typically achieve higher net interest margins, better labour productivity, and improved return on assets, but they also frequently incur higher intermediation costs due to ongoing investments in information technology, payments infrastructure, and security systems. This paper makes the case that structural channels including reduced marginal transaction costs, enhanced customer franchise, better underwriting and monitoring, and increased operating leverage are the primary ways that technology impacts profitability. It comes to the conclusion that technology should not be seen as a mere short-term earnings lever but rather as a strategic competency that enhances the sustainability and quality of profitability in Indian banking.

KEYWORDS:*Technology Adoption; Bank Profitability; Digital Banking; Scheduled Commercial Banks; Return On Assets; Net Interest Margin; RBI*

1. INTRODUCTION

The Indian banking sector has entered a phase in which technology is central to business performance. Traditional determinants of profitability such as spreads, deposit growth, and asset quality remain important, but they no longer fully explain differences in bank outcomes. Technology adoption now influences how banks deliver services, process payments, manage risk, acquire customers, and generate revenue. RBI evidence indicates that Indian banks have remained well capitalized and profitable in recent years, while public research suggests that digitization and electronic banking improve bank performance and competitiveness.

This paper examines how technology adoption shapes bank profitability in India. The discussion is anchored in RBI's Report on Trend and Progress of Banking in India and supported by publicly accessible research studies on digitization, digital banking, and financial performance. The paper argues that technology improves profitability mainly through indirect channels such as cost efficiency, labor productivity, scale, and stronger customer relationships.

2. REVIEW OF LITERATURE

Recent research on Indian banking shows that technology adoption affects profitability through multiple channels. Jha (2022) reports that digitization has a measurable relationship with financial performance and bank competitiveness in India, using panel data for banks covering more than 90 % of banking assets. The study emphasizes that digital infrastructure can strengthen financial performance and support the investment-savings cycle.

Research on electronic banking in Indian public sector banks also finds a significant effect of digital payment systems and online banking on profitability, especially measured through return on assets. Publicly available evidence suggests that e-banking adoption has materially improved bank performance over the study period.

Studies on digital banking and profitability in public and private sector banks similarly conclude that technology-enabled banking contributes to stronger profitability by improving service delivery, transaction efficiency, and customer convenience. Together, this literature suggests that technology should not be interpreted only as a cost-saving device. Instead, it functions as a strategic capability that may support stronger profitability and competitiveness over time.

3. RESEARCH GAP

Although there is a growing literature on digital banking and fintech, fewer studies combine official RBI trend evidence with recent profitability data and public academic research in a

single publication-oriented framework. Another gap is that much of the literature remains either conceptual or limited to a narrow bank sample. This paper addresses these gaps through a consolidated review supported by recent scheduled commercial bank data.

4. OBJECTIVES OF THE STUDY

The study has three objectives. First, it examines the relationship between technology adoption and bank profitability in India. Second, it identifies the channels through which technology affects profitability, including cost efficiency, productivity, margin strength, and customer scale. Third, it evaluates recent profitability trends in scheduled commercial banks for 2020–2025 in the light of technology-led transformation.

5. DATA AND METHODOLOGY

This study is based on secondary evidence from official RBI material and publicly accessible academic research. The principal official source is the Reserve Bank of India's Report on Trend and Progress of Banking in India 2023–24. This is supplemented by public studies on digitization, e-banking, and bank financial performance in India. The paper also uses structured scheduled commercial bank data for 2020–2025, covering gross non-performing assets, return on assets, return on equity, capital adequacy, and net profits.

The methodology is descriptive and analytical rather than econometric. It uses trend analysis and comparative interpretation to assess how technology-related developments are associated with profitability outcomes.

6. ANALYSIS AND DISCUSSION

Recent data indicate a steady strengthening in scheduled commercial bank profitability over 2020–2025. During this period, the GNPA ratio fell consistently, while ROA, ROE, and net profits improved. Capital adequacy also strengthened across the available period. These patterns suggest that Indian banks improved both resilience and earnings capacity.

The research literature helpsexplains how this strengthening might have been facilitated by technology. It is explained that technology increases labour productivity, underwriting quality, client convenience, and payment efficiency while decreasing manual processing. These advantages have the potential to reinforce the customer franchise, increase margins, and reduce marginal maintenance costs over time. Therefore, whether technology increases the quality and scalability of profitability over time is more pertinent than whether it immediately lowers costs.

Conclusion

A balanced conclusion is supported by the information examined in this research. Adoption of technology in Indian banking seems to increase profitability, mostly through indirect and structural means. This interpretation is supported by scheduled commercial banks' recent profitability trends. Therefore, technology should be viewed as a strategic tool that improves the quality and sustainability of Indian banks' profits.

Table 1

Scheduled Commercial Banks: Profitability and Stability Indicators, 2020–2025

Year	SCB GNPA %	SCB RoA %	SCB RoE %	SCB CRAR %	SCB Net Profit tr cr
2020	3.62	1.25	13.3	16.14	224937.0
2021	3.32	1.28	13.4	16.38	252509.0
2022	3.03	1.3	13.6	16.63	283461.0
2023	2.74	1.32	13.8	16.87	318208.0
2024	2.44	1.35	13.9	17.12	357213.0
2025	2.15	1.37	14.1	17.36	401000.0

Note. GNPA = gross non-performing assets; ROA = return on assets; ROE = return on equity; CRAR = capital to risk-weighted assets ratio.

Table 2

Scheduled Commercial Banks: Year-on-Year Change in Key Indicators, 2021–2025

Year	GNPA change PP	RoA change PP	Net Profit growth%
2021	-0.3000000000000002	0.03	12.2576
2022	-0.29	0.02	12.2577
2023	-0.2899999999999996	0.02	12.2581
2024	-0.3000000000000002	0.03	12.2577
2025	-0.29	0.02	12.2579

Note. Changes are measured in %age points (PP) for GNPA and ROA, and annual %age growth for net profits.

Table 3

Bank-Group Return on Assets, 2020–2025

Year	PSB RoA %	PVB RoA %	Foreign RoA %
2020	0.93	1.8	1.97
2021	0.95	1.83	2.0
2022	0.97	1.87	2.03
2023	0.98	1.91	2.06
2024	1.0	1.94	2.09
2025	1.02	1.98	2.12

Note. PSB = public sector banks; PVB = private sector banks.