

Impact of AI Adoption on Profitability and Risk Management of Indian Fintech Firms: A CMIE-Based Study

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ABSTRACT

In India's fintech ecosystem, rapid AI adoption drives risk mitigation and performance optimization. Using firm-level financial data from the Center for Monitoring Indian Economy (CMIE), this study analyzes AI's impact on profitability and risk management for select Indian fintech firms, Paytm, PhonePe, CRED, Groww, and Razorpay, over the latest two financial years, marked by digital expansion and surging transaction volumes. Employing a quantitative framework, we assess profitability via Return on Assets (ROA), operating profit margins, and revenue growth, alongside risk metrics like cost variability ratios, operational expense intensity, and earnings volatility. Results show fintechs with advanced AI automation and analytics achieved 18–32% average revenue growth, versus 10–15% for those with lower integration. AI-driven efficiencies cut operating expense ratios by 4–7 percentage points through process automation and predictive analytics. On risk management, AI enhanced margin stability and reduced cost volatility by 12–20% across sampled firms. Companies leveraging AI for credit evaluation, transaction monitoring, and fraud detection exhibited operational resilience, with earnings variability below $\pm 8\%$ amid rapid growth. Some firms scaled transaction volumes over 40% without proportional cost hikes, underscoring AI's scalability benefits. This study provides empirical evidence on AI's financial impacts, enriching the limited Indian fintech literature. It underscores AI as a strategic enabler of sustainable profitability and robust risk governance for executives, investors, and regulators, balancing innovation with stability.

Keywords: Artificial Intelligence, Fintech Firms, Profitability Metrics, Risk Management, CMIE Database, Indian Financial Services

