



# An Analytical Study Of Financial Frauds In E-Payment Systems In India

S. VINOTH KUMAR, DHARSHAN S

Assistant Professor, Student

Department of Commerce with Information Technology,  
Dr.N.G.P.Arts and Science College(Autonomous), Coimbatore, India

**Abstract:** India has experienced rapid growth in digital payment systems, including UPI, debit and credit cards, internet banking, and mobile banking. While these platforms have improved financial inclusion and transaction efficiency, digital financial frauds have also increased significantly. This study analyses the growth of digital payments and fraud trends in India from 2020–21 to 2023–24 using secondary data from RBI reports. The findings indicate that although transaction volume and value have grown substantially, fraud cases and the amount involved have risen disproportionately. The study emphasizes the need for stronger regulatory measures, technological safeguards, and consumer awareness to ensure secure digital transactions.

**Index Terms** - Digital Payments, E-Payment Systems, Financial Frauds, UPI Transactions, Cyber Fraud, Digital Banking, Fraud Growth Rate, Transaction Volume, Fraud Amount, RBI Reports, Cash-Lite Economy, Financial Inclusion, Cybersecurity, QR Code Payments, AI-Based Fraud Detection.

## INTRODUCTION

The advancement of information and communication technology has transformed India's financial system from cash-based transactions to digital payments. E-payment systems now play a vital role in everyday financial activities.

Payment modes such as UPI, debit/credit cards, mobile banking, internet banking, and prepaid instruments have grown rapidly. The launch of UPI in 2016 significantly accelerated digital adoption. Government initiatives like Digital India, demonetization, Jan Dhan Yojana, Aadhaar integration, and DBT further strengthened this transition. However, increased digital adoption has also led to rising cyber financial fraud.

## Concept of E-Payment Systems

An e-payment system enables electronic financial transactions without physical cash. Major components include:

- Real-time platforms (UPI, IMPS)
- Card-based payments (Debit/Credit Cards)
- Internet and mobile banking
- QR code-based payments
- Aadhaar-enabled payment systems

These systems function through banking networks, telecom infrastructure, fintech platforms, and regulatory supervision.

## Growth of Digital Payments in India

Digital payments in India have expanded rapidly between 2020–21 and 2023–24, with UPI emerging as the dominant mode. Key growth drivers include smartphone penetration, affordable internet, QR infrastructure expansion, e-commerce growth, government support, and digital literacy. This shift has accelerated India's movement toward a cash-lite economy.

## Statement of the Problem

Despite regulatory guidelines and fraud monitoring mechanisms, digital payment fraud cases continue to rise. The increasing fraud incidence rate per crore transactions highlights growing vulnerabilities within the digital payment ecosystem.

## Objectives of the Study

- To identify and classify various types of financial frauds occurring in e-payment systems.
- To analyse the major causes and factors responsible for financial frauds in digital payments.
- To study the existing legal and technological measures adopted to control e-payment frauds.
- To suggest suitable measures to enhance security and reduce financial frauds in e-payment systems.

## Scope of the Study

The study focuses on financial frauds in major digital payment modes in India, including UPI, debit/credit cards, internet banking, mobile banking, and QR-based payments.

## Limitations of the Study

- The study is based solely on secondary data, which may not fully capture the real-time experiences of fraud victims.
- Detailed information on financial fraud cases is often restricted due to confidentiality and security concerns.

## REVIEW OF LITERATURE

- **Sinthiya and Saini (2025):** Explored the intersection of AI-based monitoring and consumer protection. They proposed a conceptual framework emphasizing that regulatory compliance is the foundational pillar for a secure Indian electronic payment system.
- **Saxena and Yadav (2025):** Conducted a quantitative analysis of domestic payment frauds in India (2022–2025). They found that while transaction volumes have skyrocketed, the “Fraud Transaction Share” (FTS) has shown cyclical variations, suggesting that improved detection methods are beginning to take effect.
- **Mishra and Mukhopadhyay (2025):** Specifically addressed cyber risk challenges in newer systems like CBDC (Central Bank Digital Currency) and UPI, highlighting the potential for systemic vulnerabilities as these platforms scale.
- **Banerjee, Mahecha, and Mathur (2025):** Critically analyzed the legal and regulatory framework of digital payments in India. They argued for amending the PSS (Payment and Settlement Systems) Act to better integrate with the IT Act of 2000 to handle modern phishing and social engineering cases.
- **Lonkar, Dharmadhikari, et al. (2024):** Studied “Consumer Preparedness” and found that while Indian consumers have a high level of responsiveness after a fraud occurs, their proactive protection measures remain moderate, leaving a gap for fraudsters to exploit.

- **Mukhopadhyay and Mukhopadhyay (2024):** Investigated the relationship between UPI adoption and the threat of fraud. Their study revealed that the “ease of use” of UPI often makes users overlook security protocols, increasing the success rate of phishing scams.
- **Wadkar and Mundhe (2024):** Highlighted the cyber security challenges specific to the UPI architecture. They noted that the integration of multiple bank accounts into a single app increases the “attack surface” for cybercriminals.
- **Verma and Iyer (2023):** Focused on MSMEs (Micro, Small, and Medium Enterprises) and found that fraudulent digital transactions in this sector increased by 20% over two years due to a lack of specialized cybersecurity infrastructure for small businesses.

## DATA ANALYSIS AND INTERPRETATION

Data Analysis and Interpretation is the systematic process of organizing, examining, and transforming collected data to derive meaningful insights and support decision-making. It involves activities such as data cleaning, classification, coding, tabulation, and the use of statistical tools like percentages, averages, and trend analysis. In research on financial frauds in e-payment systems, analysis helps examine transaction growth, fraud frequency, and loss patterns. Interpretation explains what the analyzed results mean in relation to the research objectives and real-world context. Together, they convert raw data into meaningful conclusions and provide a basis for recommendations and policy decisions.

**TABLE 4.1**

### DIGITAL PAYMENT TRANSACTIONS IN INDIA

Financial Year	Total Digital Payments Volume (Crore)	Total Digital Payments Value (₹ Lakh Crore)	Volume Growth %	Value Growth %
2020-21	4,370.68	1,414.58		
2021-22	7,197.68	1,744.01	64.68%	23.29%
2022-23	11,393.82	2,086.85	58.30%	19.66%
2023-24	16,443.02	2,428.24	44.32%	16.36%

## INTERPRETATION

It is depicted from Table 4.1 that digital payment transactions in India have increased consistently from 2020–21 to 2023–24. The total volume rose from 4,370.68 crore to 16,443.02 crore, while the total value increased from ₹1,414.58 lakh crore to ₹2,428.24 lakh crore. Although both volume and value show continuous growth, the percentage growth rate has gradually declined over the years.

**TABLE 4.2**

### UPI TRANSACTIONS: VOLUME & VALUE

Financial Year	UPI Transaction Volume (Crore)	UPI Transaction Value (₹ Lakh Crore)	Volume Growth %	Value Growth %
2020-21	2,233	41.03		
2021-22	4,597	84.17	105.87%	105.14%
2022-23	8,375	139.18	82.18%	65.36%
2023-24	11,761	182.84	40.43%	31.37%

## INTERPRETATION

It is depicted from Table 4.2 that UPI transactions have increased significantly from 2020–21 to 2023–24. The transaction volume rose from 2,233 crore to 11,761 crore, while the transaction value increased from ₹41.03 lakh crore to ₹182.84 lakh crore. Although both volume and value show strong growth, the percentage growth rate has gradually declined over the years.

**TABLE 4.3**

### TOTAL NUMBER OF DIGITAL PAYMENT FRAUD CASES

Financial Year	Number of Digital Payment Fraud Cases	Fraud Growth %
2020-21	1,19,699	
2021-22	2,65,000	121.39%
2022-23	6,99,000	163.77%
2023-24	14,57,000	108.44%
Compound Annual Growth Rate		130.03%

## INTERPRETATION

It is depicted from Table 4.3 that the number of digital payment fraud cases has increased significantly from 1,19,699 cases in 2020–21 to 14,57,000 cases in 2023–24. The fraud growth rate was 121.39% in 2021–22, peaked at 163.77% in 2022–23, and remained high at 108.44% in 2023–24. The Compound Annual Growth Rate (CAGR) stands at 130.03%, indicating rapid growth over the period.

**TABLE 4.4**

### AMOUNT INVOLVED IN DIGITAL PAYMENT FRAUDS

Financial Year	Amount Involved in Digital Payment Frauds (₹ Crore)	Amount Growth %
2020-21	290	
2021-22	1,087	274.83%
2022-23	1,750	60.99%
2023-24	2,604	48.80%
Compound Annual Growth Rate		107.85%

## INTERPRETATION

It is depicted from Table 4.4 that the amount involved in digital payment frauds has increased sharply from ₹290 crore in 2020–21 to ₹2,604 crore in 2023–24. The highest growth rate was recorded in 2021–22 at 274.83%, followed by a gradual decline to 60.99% in 2022–23 and 48.80% in 2023–24. The Compound Annual Growth Rate (CAGR) stands at 107.85%, indicating substantial overall growth.

**TABLE 4.5****UPI FRAUD CASES & AMOUNT INVOLVED**

Financial Year	UPI Fraud Cases (Number)	Amount Involved (₹ Crore)	Average Loss per Case (₹)	Growth in Average Loss
2020-21	77,000	131	17,013	
2021-22	1,25,000	239	19,120	12.38%
2022-23	3,48,000	620	17,816	-6.82%
2023-24	7,25,000	1,087	14,993	-15.85%

**INTERPRETATION**

It is depicted from Table 4.5 that UPI fraud cases increased significantly from 77,000 cases in 2020–21 to 7,25,000 cases in 2023–24. The amount involved also rose from ₹131 crore to ₹1,087 crore during the same period. However, the average loss per case increased in 2021–22 but declined in the subsequent years, showing negative growth in 2022–23 and 2023–24.

**FINDINGS**

- Digital payment transactions in India increased substantially from 4,370.68 crore (2020–21) to 16,443.02 crore (2023–24), with consistent growth in both volume and value, though the growth rate gradually declined.
- UPI emerged as the dominant digital payment mode, with transaction volume rising from 2,233 crore to 11,761 crore and value increasing more than four times during the study period.
- The number of digital payment fraud cases increased sharply from 1,19,699 (2020–21) to 14,57,000 (2023–24), recording a high CAGR of 130.03%, indicating rapid growth in cyber fraud incidents.
- The total amount involved in digital payment frauds rose from ₹290 crore to ₹2,604 crore, with a CAGR of 107.85%, showing significant financial impact.
- UPI fraud cases increased substantially; however, the average loss per case declined in recent years, suggesting higher fraud frequency but relatively smaller transaction sizes per incident.

**SUGGESTIONS**

- Strengthen cybersecurity infrastructure through advanced encryption, multi-factor authentication, and AI-based fraud detection systems.
- Enhance real-time transaction monitoring and early warning systems to detect suspicious activities promptly.
- Increase consumer awareness programs regarding phishing, OTP fraud, QR scams, and social engineering attacks.
- Encourage banks and fintech platforms to adopt stricter KYC and customer verification mechanisms.
- Strengthen regulatory oversight and coordination between RBI, banks, telecom providers, and cybersecurity agencies.

## CONCLUSION

The study reveals that India's digital payment ecosystem has experienced remarkable growth between 2020–21 and 2023–24, driven largely by UPI adoption and supportive government initiatives. However, the rapid expansion of digital transactions has been accompanied by a significant rise in fraud cases and the amount involved. Although the average loss per UPI fraud case has declined in recent years, the overall increase in fraud frequency poses serious concerns for financial security.

Therefore, while digital payments contribute significantly to financial inclusion and economic efficiency, ensuring cybersecurity, strengthening regulatory frameworks, and enhancing user awareness are critical to sustaining safe and secure digital financial growth in India.

## REFERENCES

1. Reserve Bank of India (RBI). (2021). Annual Report 2020–21. Mumbai: RBI.
2. Reserve Bank of India (RBI). (2022). Annual Report 2021–22. Mumbai: RBI.
3. Reserve Bank of India (RBI). (2023). Annual Report 2022–23. Mumbai: RBI.
4. Reserve Bank of India (RBI). (2024). Annual Report 2023–24. Mumbai: RBI.
5. National Payments Corporation of India (NPCI). (2024). UPI Product Statistics and Reports.

