

Digital Finance: Growth of online Payment Services and its Impact on Financial Fraud

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ABSTRACT

India's financial inclusion has significantly improved during the last several years. In recent years, there has been a rise in the number of Indians who have bank accounts, with this figure believed to be close to 80% at present. Fintech businesses in India are progressively becoming more noticeable as the Government of India continues to strive for expanding financial services to the rural sector of the population. The rapid growth of online payment services has revolutionized the global financial landscape, enhancing convenience, accessibility, and efficiency for consumers and businesses. This report examines the exponential rise of digital payment platforms, fueled by advancements in technology, increasing smartphone penetration, and the shift toward cashless economies. It highlights how innovations such as mobile wallets, contactless payments, and blockchain technology have transformed financial transactions. In this study I used regression tools to make an analysis on the secondary data collected from various sources like RBI, NPCI, kaggle to analyze this influence. The aim is to determine whether there is a correlation between rise in use of digital instruments and financial fraud. The report explores the interplay between technological advancements and fraud vulnerabilities, analyzing the measures implemented to mitigate risks, including robust encryption, multi-factor authentication, and artificial intelligence-driven fraud detection systems.

INTRODUCTION

Digital innovation is transforming financial services. Innovations in financial technology such as mobile money, peer-to-peer (P2P) or marketplace lending, insurance technology (insurtech) and crypto-assets have emerged around the world. In the past decade, fintech has already driven greater access to and convenience of financial services for retail users. Meanwhile, artificial intelligence (AI), cloud services are transforming wholesale markets in areas as diverse as financial market trading and regulatory and supervisory technology (regtech and suptech). A host of new firms have sprung up to apply new technologies to meet customer demand and indicate that digital transformation is a strategic priority. Indeed this is boosted by government's involvement in the fintech sector but a primary role has been played by private firms as the key player in this digitization wave which enabled easy access to every person in the country.

Financial services have undergone a transformation because to the Indian fintech industry, which has made them incredibly accessible and convenient for both individuals and enterprises. The introduction of Aadhaar-based verification systems after 2009 was a turning point that made digital KYC procedures easier. The Unified Payments Interface, which introduced rapid, affordable money transactions between people and businesses in 2016, revolutionized how Indians conducted business. Particularly during demonetisation, the uptake of cashless payments was accelerated by UPI's connection with digital wallets such as Paytm and PhonePe. By lessening reliance on currency and conventional banking infrastructure, these advancements have democratized access to banking and financial tools, which benefits both urban and rural communities.

This wave was further strengthened by RBI taking up action and giving heads-up to private fintech companies to open banking services which lead to rise of digital lending platforms, such as Lendingkart and KreditBee, leveraging AI and data analytics to offer quick loans to small businesses and individuals. The fintech industry in India is booming right now, helping to support an economy that depends more and more on digital-first solutions. As the fintech industry continues to revolutionize customer experiences, its estimated market size is expected to increase from \$111 billion in 2024 to over \$400 billion by 2029. The next wave of growth is being shaped by emerging technologies that are incorporating financial services into everyday life, such as blockchain, embedded finance, and artificial intelligence. These advancements have made financial management simpler and more accessible than before for millions of people by improving their access to credit, improving savings, and facilitating a seamless payment process.

Cashless payment methods or businesses that totally depend upon electronic payment methods are seem to be rapidly growing in India. To manage an overwhelming amount of monetary transactions, any financial sector of an economy must be reliable and transparent. Due to its popularity among citizens, India's e-payment system has accelerated growth in recent years. The Indian government is also acting, launching the "Digital India" initiative to increase awareness, availability, as well as adoption of digital technologies. However, People still prefer to conduct their transactions in cash. E-payment systems are broadly classified as On-line MasterCard Payment, Online Electronic Money System, Electronic Cheque, and Cards-based e-Payment System. Each payment system has advantages and disadvantages for retailers and buyers. The following edicts govern new payment systems: accessibility, cost, security, traceability, anonymity, acceptability, and control. To compete in the hyper-competitive market, most banks-built e-commerce, that supports an e-payment system. The first primary objective is to comprehend e-payments; the secondary purpose is to thoroughly examine the characteristics of e-payment systems; and the ultimate aim is to identify the characteristics of the ideal electronic payment system.

However, the proliferation of online payment systems has also introduced significant vulnerabilities, particularly in the realm of financial fraud. Cybercriminals are exploiting digital platforms through sophisticated techniques such as phishing, hacking, and social engineering to compromise sensitive financial data. As a result, incidents of fraud have surged, posing challenges to the trust and security of these payment ecosystems. The primary objective of this research is to understand the relation and growth in financial fraud with growth in value and volume of digital transactions. This paper seeks to explore the dual narrative of the growth of online payment services highlighting their benefits in fostering financial inclusion and economic efficiency while critically examining their role in increasing exposure to fraud.

To understand this study uses a regression model on a primary data set of online transactions via NEFT, IMPS and UPI. This aims to figure out how the increase in the volume of digital transaction is also caused increasing financial fraud and the report ends with new measures taken by fintech firms to catch and try to reduce these frauds.

REVIEW OF LITERATURE

Digital payment in India led to a cashless economy and a digitally empowered fellowship. Digital Payments are promoted by launching various digital payment modes such as banking cards, mobile wallets, internet banking, and mobile banking. According to a report by "*Firstpost Jan 2022*", Over the last several years, India's booming digital payment sector has developed significantly, leading the way in the P2P (person-to-person) and P2M (person-to-merchant) segments of payment digitization. The Union Budget for 2022-23 allows the finance minister to develop its digital payment ecosystem to spell out the government's strategy for financial inclusion through digitization. The COVID-19 epidemic has advanced the payment industry's digitalisation, boosting digital payment systems. In FY2021, more than 40 billion digital transactions worth more than quadrillion rupees were recorded; making digital payments is among the fastest-growing fintech areas. To improve the digital payment environment, the government needs to solve the industry's issues, such as internet availability, promotion of UPI transactions, and reduction of transaction costs.

Another sector that saw a rise due to expansion of Financial services is the loan and micro finance sector. The promotion of much-needed financial sector growth was the fundamental reason for the introduction of the concept of microfinance in the country who's major population is rural based (*Duncombe and Boateng 2009; Wry and Zhao 2018; Iqbal et al. 2019; Chavan and Birajdar 2009*). Financial inclusion and economic expansion and development are strongly associated with each other (*Mia et al. 2018*).

Aron (2018) carried out an empirical analysis of mobile money and found evidence of the role of mobile money in enhancing risk-sharing. Other noteworthy studies, such as that conducted by *Mbiti and Weil (2013)* and *Wieser et al. (2019)*, demonstrate that increased use of fintech leads to a reduction in the use of informal methods of savings and an intensification in the number of remittance transactions. A significant lack of infrastructure is the reason many facilities that the Fintech sector can offer are not available in the rural sector in India. As a consequence, the economy cannot grow to its full potential as people are not making full use of their own economic opportunities (*Singh et al. 2013*). As a direct consequence of this, microfinance programs have been launched in industrialized nations, such as India, in order to provide assistance to those living in impoverished areas, such as inner-city neighborhoods (*Singh and Singh 2012*). Since that time, the majority of the needs of the poor regarding financial services have not been met (*Singh and Singh 2012*), which has resulted in a boom in the process of financial inclusion in the underdeveloped region of India which has also led to social and economic upliftment of those living in those regions.

A study conducted by RBI focusses on the relation between digital payment and cyber-crimes. They stated that as more individuals opt for digital payments, the potential for cyber-attacks such as online fraud increases. They found that increase

in digital payment leads to rise in cyber-attacks and lack of knowledge and infrastructure contribute to cybercrime. (Fernandes, 2013) studied the increase in electronic payment systems and the corresponding rise in electronic frauds. The study found that e-payment frauds are increasing with the growth of e-business and preventive measures and fraud detection techniques are necessary to minimize frauds. (Adigwe, 2012) identified the types of frauds associated with electronic payment and suggests measures to control them. The researcher stated that payment fraud is pervasive and requires constant attention and safeguarding.

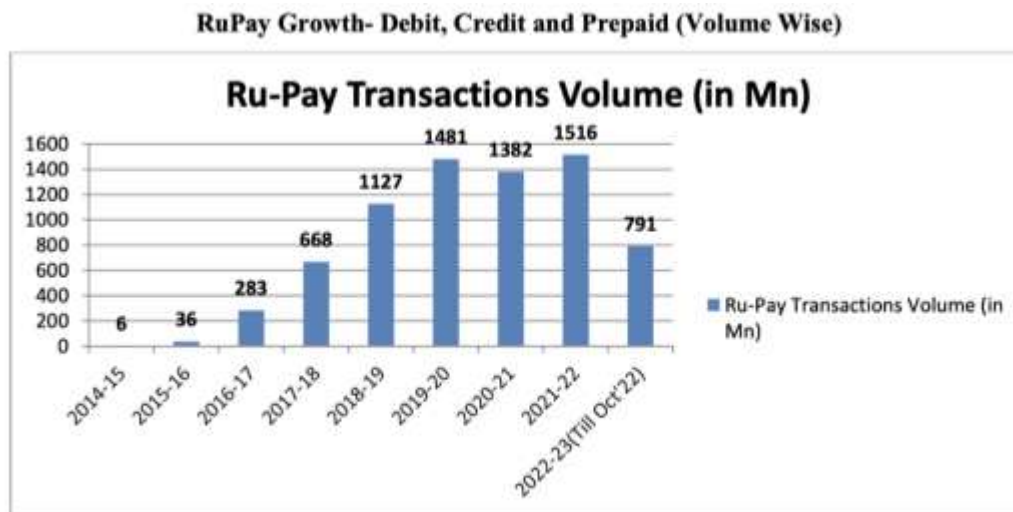
The socio-economic impact of digital payment adoption in India is profound, reshaping the financial landscape and contributing to the country's economic development (Arora, 2016). This shift has benefited small and medium enterprises (SMEs), constituting a substantial portion of the Indian economy. Digital payments have enabled these businesses to expand their customer base beyond local boundaries, improve cash flow management, and access credit more efficiently, contributing to their growth and, by extension, job creation and economic expansion (Sahil et al., 2022).

IDENTIFYING DIGITAL PAYMENTS IN ENHANCING FINANCIAL INCLUSION

Fintech enterprises enhance financial inclusion in India through cost reduction and improved accessibility of financial services for individuals in low-income demographics, rural regions, and other marginalized sectors of the Indian economy. Fintech solutions, such as mobile banking apps, digital solutions, card-based payment solution and growth in UPI transactions, etc. enhance financial inclusion by providing convenient and accessible financial services to individuals who may have limited access to traditional banking infrastructure.

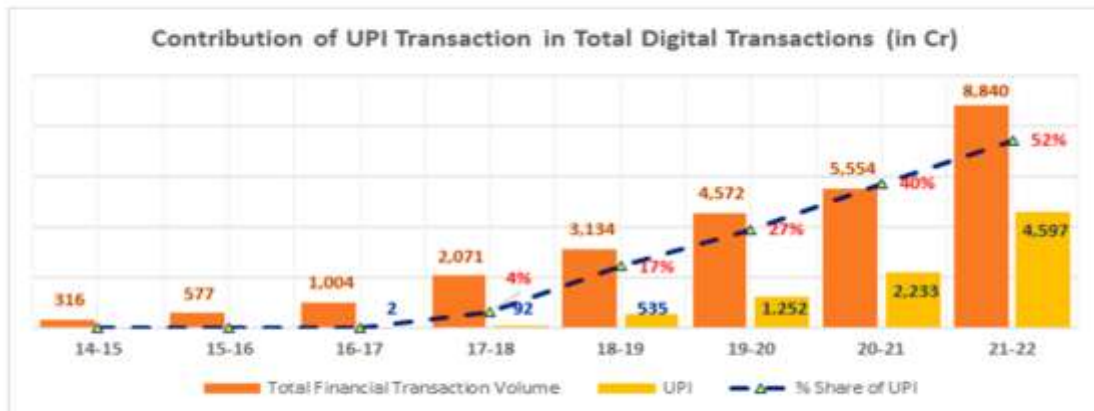
Digital payment solutions: During last five years, various easy and convenient modes of digital payments, including Bharat Interface for Money-Unified Payments Interface (BHIM-UPI), Immediate Payment Service (IMPS), and National Electronic Toll Collection (NETC) have registered substantial growth and have transformed digital payment ecosystem by increasing person-to-person (P2P) as well as person-to-merchant (P2M) payments. BHIM UPI has emerged as the preferred payment mode of the citizens and has recorded 803.6 crore digital payment transactions with the value of ₹ 12.98 lakh crore in January 2023. Digital payment transactions have significantly increased as a result of coordinated efforts of the Government as a whole, along with all stake holders concerned, from 2,071 crore transactions in FY 2017-18 to 8,840 crore transactions in FY 2021-22.

RuPay-: During its journey of last eight years, RuPay has made a significant impact on the retail payment systems in the country. To- day, over 1,240 banks, including Private Sector Banks, Public Sector Banks, Small Finance Banks, Cooperative Banks and Regional rural banks.



Source-NPCI, 2023

Growth of UPI transactions in comparison to Total Digital Transactions



Growth in UPI transactions: UPI has made buying and selling through fintech app solutions, easier for both e-commerce providers as well as consumers. This has created a huge demand in the FinTech industry. The benefits of UPI were observed in full glory during the COVID-19 pandemic when UPIs served as critical lifeline especially for small and micro merchants. Further, UPI has processed 21 billion contactless merchants' transactions with total value over ₹ 16.1 Lakh Crores in FY 2022-23 (till Oct'22).

ASSESSING THE CURRENT STATE OF ONLINE E-TRANSACTIONS

An Electronic Payment System is a sort of inter-organizational information system that connects several associations and individual clients for money-related activities. Complex interactions among partners may be necessary, which can be facilitated by banks and inter-switch houses who enable financial transactions to be conducted electronically. Another point of view is expressed by those who define an e-payment system as any sort of money exchange through the internet. Similarly, a system of electronic payment refers to an electronic technique for making payments for goods purchased on the internet or at marketplaces and shopping centres. Over the past ten years, India's payment environment has undergone a dramatic change, with online e-transactions now playing a crucial role in financial activities. Technology breakthroughs and government programs like Digital India have fueled the growth of digital payment methods, which has changed how people and businesses handle transactions. An examination of India's online e-transactions, divided into traditional and new modalities, is provided below.

Traditional online transaction method

National Electronic Funds Transfer (NEFT): NEFT is one of the oldest and most popular digital fund transfer systems in India. The Reserve Bank of India introduced NEFT in 2005, and it completely changed how people and companies conduct interbank transactions. It makes it possible for bank branches that take part in the NEFT network to electronically transfer money from one to another. NEFT has expanded over time to include practically all Indian banks, making it a crucial component of the nation's digital payment system.

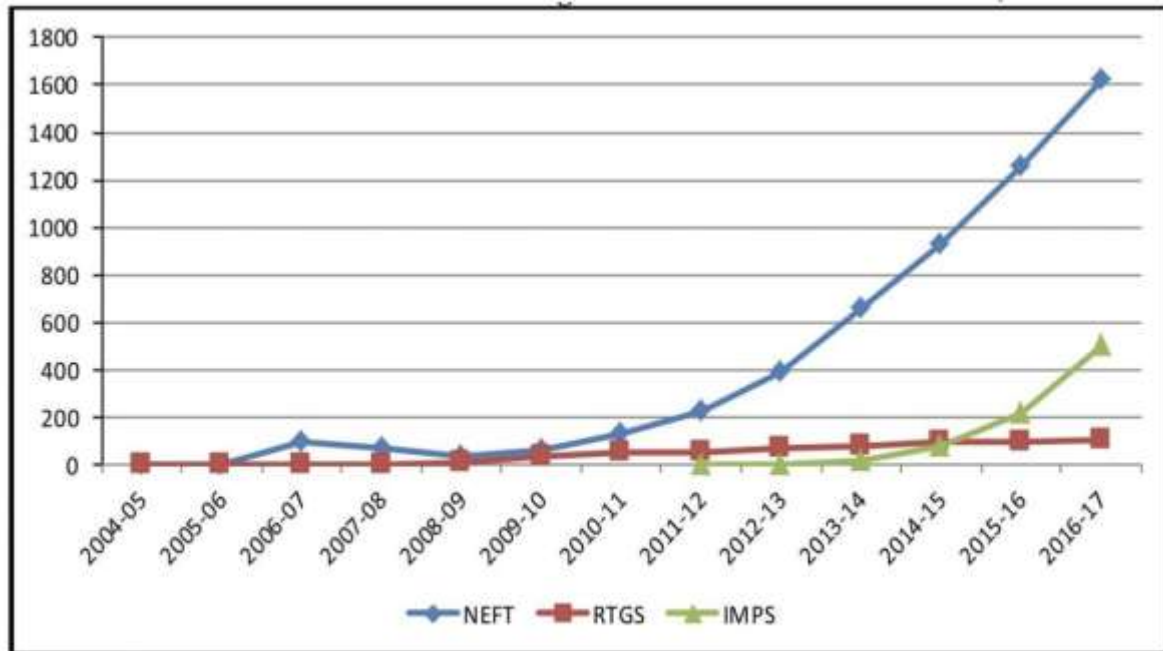
Real Time Gross Transfer (RTGS): RTGS was launched in 2004 by the Reserve Bank of India, RTGS enables the immediate and continuous settlement of transactions on a gross basis, meaning each transaction is processed individually without any batching. RTGS is primarily used for large-value transactions, with a minimum transfer limit of ₹2 lakhs, making it ideal for businesses and individuals handling substantial amounts of money. Unlike other systems, such as NEFT, RTGS processes payments in real time, ensuring that funds are credited instantly to the recipient's account. This feature is particularly beneficial for transactions requiring urgent settlement, such as corporate payments, interbank transfers, and high-value purchases.

Immediate Payment Services (IMPS): The Immediate Payment Service is a revolutionary digital payment system in India that provides instant interbank fund transfers 24/7. Introduced in 2010 by the National Payments Corporation of India (NPCI), IMPS was one of the first systems to enable real-time payments across banks, offering users unparalleled convenience and accessibility. IMPS allows individuals to transfer money instantly through various channels, including mobile banking, internet banking, ATMs, and bank branches. It is particularly well-suited for small to medium-value

transactions, with a maximum transfer limit of ₹5 lakhs (subject to individual bank policies). Unlike older systems such as NEFT, IMPS does not rely on batch processing, making it an ideal choice for users who require immediate payment settlements.

Modern online Transaction methods

Digital wallet: Digital wallets are mobile-based applications or software that allow users to store money electronically and make payments conveniently. Popular wallets in India, such as Paytm, PhonePe, and Google Pay, emerged prominently after 2010, particularly following the demonetization in 2016. These wallets enable users to pay for a wide range of services, including e-commerce purchases, utility bills, and peer-to-peer transfers. Integrated with UPI, many digital wallets offer seamless transactions without the need for bank account details. Their ease of use, cashback incentives, and widespread merchant acceptance have made them a significant part of India's digital payment ecosystem.

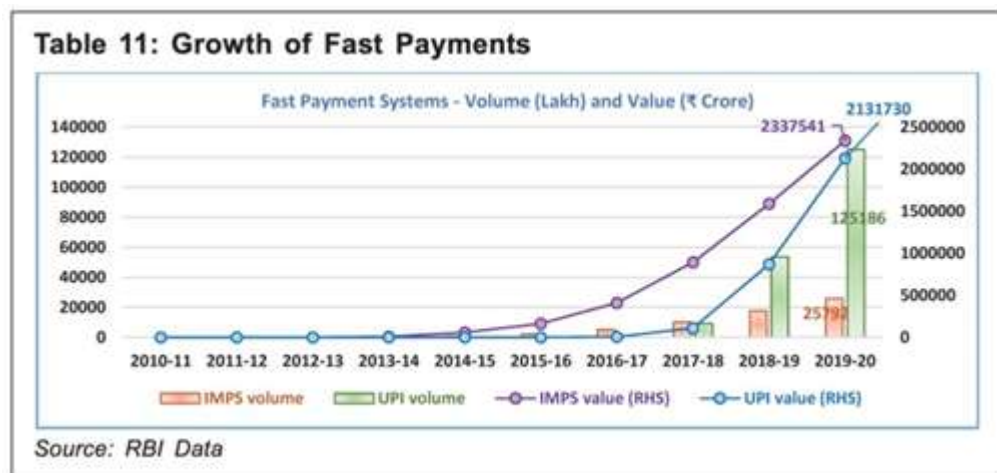
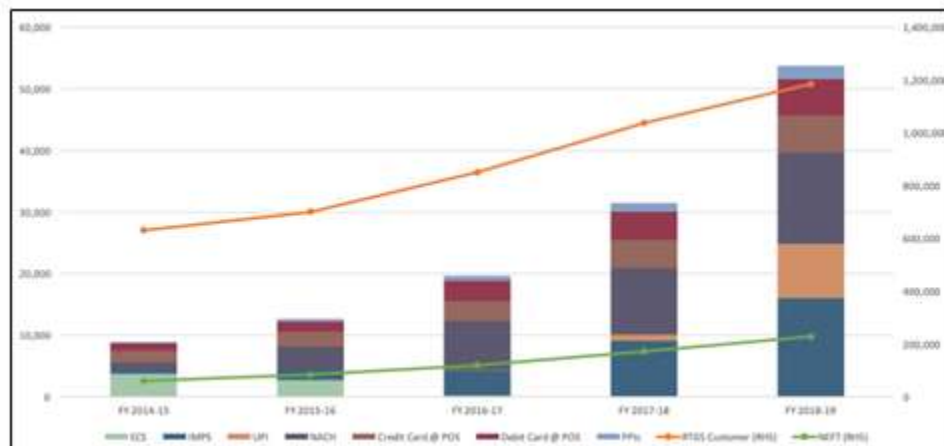


Source: RBI data base

National Automated Clearing House (NACH): NACH, introduced by the National Payments Corporation of India (NPCI) in 2016, replaced the older Electronic Clearing Service (ECS) to streamline bulk and recurring payments. NACH is widely used for direct debit mandates, such as loan EMIs, utility bills, insurance premiums, and salary disbursements. Unlike ECS, NACH offers faster processing, better automation, and enhanced security, making it the preferred choice for high-volume recurring transactions. Businesses and institutions benefit from its ability to handle bulk payments efficiently, while individuals enjoy uninterrupted services for recurring commitments.

Bharat Bill Payment System (BBPS): The Bharat Bill Payment System (BBPS) is a unified platform launched by the NPCI in 2017 to simplify and consolidate bill payments across various sectors. BBPS allows consumers to pay bills for utilities, telecom, insurance, school fees, and more through a single platform, accessible via banks, digital wallets, and retail outlets. It enhances user convenience by offering real-time payment confirmations and ensuring security with end-to-end encryption. BBPS has significantly improved the bill payment experience by integrating multiple service providers into one network, making it easier for customers to manage their obligations seamlessly.

Crypto-currency Payments: Cryptocurrencies, such as Bitcoin, Ethereum, and others, represent a modern and decentralized form of digital payments. Built on blockchain technology, cryptocurrency transactions are secure, transparent, and operate independently of traditional banking systems. While not yet mainstream in India due to regulatory concerns, cryptocurrencies are gaining traction for cross-border payments, investment opportunities, and niche uses in tech-savvy communities.



CHALLENGES FOR DIGITAL PAYMENT ADOPTION

The barriers or challenges to digital payment adoption in India are not uniform across all population segments, and addressing them may require a combination of policy measures, education, improved infrastructure, and culturally sensitive approaches to encourage wider adoption of these services. It includes:

Technological challenges: One of the major hurdles is the lack of cybersecurity infrastructure to safeguard digital transactions. Rising incidents of phishing, data breaches, and payment frauds undermine user trust in digital payment systems. Moreover, system outages and technical glitches in digital payment platforms, such as UPI and internet banking, cause delays and dissatisfaction among users.

Absence of legal identity and gender biasness: Minorities, economic and political migrants, refugee workers and women's are excluded from accessing financial services due to lack of legal identities such as original birth certificates and identity cards. It is generally difficult to access credit facilities for those females, who do not possess property and assets. They also needed male guarantee to access the credit from any financial institutions.

Limited knowledge of financial services: Incomplete basic education and financial literacy are the major hurdles in order to access various financial services to the individuals. They do not Know the significance of different financial products i.e., bank accounts, cheque facility, bank loan or overdraft and insurance.

Rigid terms and conditions: People are also least interested using such type of financial products or services which are attached with some inflexible terms and conditions. Many financial institutions having different rules relating with the use of accounts like minimum balance requirements.

Cultural and behavioral factors: India has a deep-rooted preference for cash transactions, especially in small-value payments. This cultural inclination toward cash as a secure and tangible form of payment is difficult to overcome. Additionally, users in rural areas often lack trust in banks and digital financial systems, further slowing the adoption of digital payments.

FINANCIAL FRAUD IN DIGITAL TRANSACTIONS

India's digital payment landscape has grown exponentially, led by platforms like UPI, making transactions faster and more accessible. However, this rapid adoption has been paralleled by a sharp rise in financial fraud, particularly in online banking and payment systems. With cybercriminals leveraging sophisticated techniques, the risks associated with digital transactions are significant. Understanding the reasons behind these frauds is crucial to mitigate their impact and safeguard users.

In India financial frauds happen of many types, the different types of these frauds are:

Phishing Scams: Phishing involves deceitful practices where attackers impersonate trustworthy entities to obtain sensitive information like passwords and bank details. Common methods include fake emails, SMS messages, or phone calls. Example: In 2021, a group of fraudsters impersonated bank officials through SMS, tricking customers into sharing their ATM PINs, resulting in multiple unauthorized withdrawals. This highlights the importance of verifying communications from financial institutions.

Identity Theft: Identity theft involves stealing personal information to impersonate someone else for financial gain. This can include stealing documents, hacking into accounts, or using social engineering techniques. Example: In 2019, a woman discovered her identity had been used to open multiple loan accounts, resulting in a financial liability of ₹10 lakh. Such cases emphasize the need for robust identity verification processes.

Investment Scams: Investment scams promise high returns with little risk, often involving schemes that do not exist or are heavily inflated. These scams can take various forms, including Ponzi schemes and fake investment platforms. Example: In 2021, a Ponzi scheme masquerading as a cryptocurrency investment platform defrauded investors of ₹50 crore before collapsing.

Credit/Debit Card Fraud: Credit and debit card fraud involves unauthorized use of a card for transactions. Techniques such as skimming or data breaches are commonly employed to steal card information. Example: In 2022, a data breach at a major Indian retail chain led to the loss of sensitive card details, resulting in fraudulent transactions worth crores. This illustrates the risks associated with digital payment systems and the importance of secure transactions.

Key Reasons for Financial Frauds in Online Transactions

Weak Authentication Systems:

Over-reliance on OTP-based authentication is a critical vulnerability. Cybercriminals exploit weaknesses in SMS delivery systems and phishing attacks to intercept OTPs.

Account takeover fraud, accounting for 55% of cases in India, highlights the inefficiency of traditional methods.

Low Financial Literacy and Awareness:

Many users lack the necessary knowledge to identify phishing attempts or fraudulent apps.

The increase in digital literacy has not matched the pace of adoption, making users easy targets for impersonation and social engineering scams.

Growing Use of Mule Accounts and Sophisticated Cyber Tactics:

Fraudsters increasingly use mule accounts to launder money and avoid detection.

Advanced tactics, such as using VPNs to mask locations and manipulating multiple devices, make fraud detection more challenging and increase the risk of financial frauds.

METHADODOLOGY & ANALYSIS

The objective of this research is to know the relationship between digital payments transactions and financial fraud. Here the value and volume of fraud are used as proxy of financial fraud, in IMPS, NEFT, and UPI transactions are used as proxy of digital payment transactions and number of UPI QR is used as proxy of payment infrastructures. The research is conducted by using statistical software (SPSS).

Ho: There is no significant relationship of value and volume of fraud with payment infrastructures, value of digital payments, and volume of digital payments.

H1: There is significant impact of payment infrastructures, value of digital payments, and volume of digital payments on value and volume of fraud.

This above table presents descriptive statistics for selected variables under study, focusing on four categories:

	WALLETS	UPI_QR	CARDS	ATM_AND_CRM
Mean	13307.11	2431.499	10345.99	2.562509
Median	13335.10	2442.342	10283.92	2.557960
Maximum	13509.02	2667.571	10616.74	2.585340
Minimum	13106.33	2164.298	10162.40	2.547180
Std. Dev.	117.9829	170.3392	162.1937	0.012570
Skewness	-0.057325	-0.150402	0.466534	0.628378
Kurtosis	2.550527	1.806974	1.834464	2.199953

WALLETS, UPI_QR, CARDS, and ATM_AND_CRM. The mean values provide an average perspective, revealing that WALLETS have an average of 13,307.11 Lakh transactions, UPI_QR has 2,431.499 Lakh transactions, CARDS show an average of 10,345.99 Lakh transactions, and ATM_AND_CRM has an average of 2.562509 transactions. The skewness of WALLETS and UPI_QR is negative signifying that the curve is leftward skewed, this is reflecting that a majority of the volume of transaction are lower than the median value of 13335.10 lakh for WALLETS and 2442.342 lakh for UPI_QR. Similarly, for CARDS, and ATM_AND_CRM the skewness is positive showing that major volumes lies to the right of the median meaning a lot of transactions volume are greater than the median of 10283.92 lakh transactions for CARDS and 2.5579 lakh for ATM_AND_CRM.

The descriptive statistics table provides a comprehensive overview of selected variables, offering insights into the central tendencies and distributions of financial transactions in the study. The mean values serve as key indicators, revealing the average levels across various parameters. Notably, the mean values for Value of Fraud (VA_FRAUD),

	VA_FRAUD	VA_NEFT	VA_IMPS	VA_UPI	VO_FRAUD	VO_IMPS	VO_NEFT	VO_UPI
Mean	259.2143	2942932.	489193.9	1293900.	1.888298	4789.696	4756.783	79697.76
Median	257.0429	2810180.	477491.5	1281971.	1.793570	4824.590	4798.310	78288.95
Maximum	333.0123	3750569.	546234.7	1489145.	2.291570	5015.490	5469.057	94151.85
Minimum	194.9630	2726827.	454451.3	1116438.	1.536220	4478.132	4332.454	67808.00
Std. Dev.	47.96296	322371.7	33983.22	121305.5	0.280203	183.3732	335.4235	8556.678
Skewness	0.141118	1.958126	0.569869	0.235055	0.220288	-0.347969	0.815059	0.360462
Kurtosis	1.850116	5.623683	1.807319	1.939842	1.648728	1.900612	3.443809	2.003609

Value of NEFT transactions (VA_NEFT), Value of IMPS transactions (VA_IMPS), and Value of UPI transactions (VA_UPI) provide a snapshot of the typical volumes involved, with averages of ₹259.21 Crore, ₹2,942,932.0 Lakh, ₹489,193.9 Crore, and ₹1,293,900.0 Crore, respectively.

Dependent Variable: VA_FRAUD				
Method: Least Squares				
Date: 07/16/23 Time: 11:21				
Sample (adjusted): 2021M06 2023M05				
Included observations: 8 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	26.62924	33.71389	0.78986	0.47380
VO_IMPS	-0.14684	0.25894	-0.56710	0.60100
VO_NEFT	0.11809	0.06976	1.69283	0.16570
VO_UPI	-0.00707	0.01187	-0.59578	0.58340
R-squared	0.598507	Mean dependent var		4.446719
Adjusted R-squared	0.297387	S.D. dependent var		58.35002
S.E. of regression	48.91016	Akaike info criterion		10.9247
Sum squared resid	9568.816	Schwarz criterion		10.96442
Log likelihood	-39.6988	Hannan-Quinn criter.		10.6568
F-statistic	1.987604	Durbin-Watson stat		1.409272
Prob(F-statistic)	0.258124			

The regression analysis explores the impact of the volume of digital payment transactions on digital payment fraud (DependentVariable: VA_FRAUD). The model includes three independent variables: VO_IMPS, VO_NEFT, and VO_UPI, representing the volume of IMPS, NEFT, and UPI transactions, respectively. The coefficients indicate the estimated impact of each variable on digital payment fraud. The constant term (C) is **26.62924**, suggesting that when all independent variables are zero, the predicted digital payment fraud is **26.63**. However, none of the independent variables (VO_IMPS, VO_NEFT, VO_UPI) show statistically significant coefficients, as their p-values are above conventional significance levels (0.05). The R-squared value is **0.5985**, indicating that approximately 59.85% of the variability in digital payment fraud can be explained by the model. The adjusted R-squared adjusts for the number of predictors and is **0.2974**. The standard error of the regression is **48.91016**, representing the average deviation of the observed values from the predicted values.

RESULT

The analysis conducted in this study reveals no significant correlation between the value and volume of fraud and , digital payment value, and digital payment volume. Regression results further support this, showing that the volume of digital payment transactions does not exert a significant influence on the occurrence of digital payment fraud, and the selected digital payment infrastructures are not substantial predictors of such fraud. However, the analysis indicates that the value of UPI transactions has a significant negative impact on digital payment fraud, suggesting that higher values of UPI transactions may have a protective effect against fraud.

CONCLUSION

It is generally agreed that financial inclusion is necessary for the alleviation of poverty, the promotion of balanced economic growth, and the maintenance of economic stability. In India, a significant portion of the population do not have access to even the most fundamental banking services. The provision of fundamental monetary services, such as banking, is still largely out of reach for millions of individuals, particularly those living in India's most rural and isolated areas. It is necessary to make use of financial technology and services related to mobile money in order to complete financial transactions and to improve one's standard of living by investing in the creation of new enterprises or initiatives related to self-employment. The sharing economy, legislation, and information technology are all contributing to the rapid progress that is being made owing to these initiatives.

The Report also highlighted the significant fraud. Digital transaction carry due to their high volume and growth. However, this growth estimates fraud incidents rise fivefold to ₹14.57 billion by 2025. Major contributors include identity theft, and social engineering scams, exacerbated by low digital literacy among users. Indian companies, such as Paytm, Razorpay, and Pine Labs, have adopted AI-driven fraud detection systems to analyze transaction patterns and flag anomalies. These platforms often employ blockchain technology to enhance security and multi-factor authentication (MFA) to safeguard user accounts. The banking sector, supported by FinTech firms, promotes awareness through campaigns, real-time fraud alerts, and tokenization of sensitive card details.

The government has stepped up with initiatives like the Cyber Swachhta Kendra, the Cyber Crime Reporting Portal, and the Personal Data Protection Act, 2023. Regulatory oversight from the Reserve Bank of India (RBI) includes awareness campaigns and guidelines mandating secure payment methods. A collaborative effort between regulators, firms, and consumers is vital to ensuring a secure, inclusive digital payment ecosystem. Continued education, robust cybersecurity infrastructure, and technological innovation are central to minimizing fraud risks.

REFERENCES

1. Quresh, M., Ismail, M., Khan, M., Gill, M. A., & Kishwer, R. (2023). Examining the Challenges of Fintech Adoption and Recommending Strategies for Inclusive Financial Ecosystems. *The Impact of Fintech on Financial Inclusion: Opportunities, Challenges, and Future Perspectives PJAEE*, 20(2),2023
2. Neelam, & Sonali Bhattacharya (2022). Financial Technology Solutions for Financial Inclusion: A review and future agenda. *AABFJ Volume 16 Issue 5*, 2022.
3. Allmen et al. (2020). Digital Financial Inclusion in the Times of COVID-19. *IMFBlog: Insights & Analysis on Economics and Finance* (online).
4. India FinTech Report 2019.
5. Jack, William, and Tavneet Suri. 2014. Risk Sharing and Transactions Costs: Evidence from Kenya's Mobile Money Revolution. *American Economic Review* 104: 183–223.
6. PwC. FinTech for the underserved - Future of FinTech and payments to drive financial inclusiveness.

7. Aron, Janine. 2018. Mobile Money and the Economy: A Review of the Evidence. The World Bank Research Observer 33: 135–88
8. Singh, N. Dhaneshwar, and H. Ramananda Singh. 2012. Social Impact of Microfinance on SHG Members: A Case Study of Manipur. Prabandhan: Indian Journal of Management 5: 43–50.
9. Reserve Bank of India - <https://www.rbi.org.in/>