



“Enhancing Customer Experience: The Role of Digital Payments in India’s Economy”

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Abstract

Digital payments have revolutionized India's economy by enhancing customer experience, increasing financial accessibility, and driving economic growth. This paper examines the impact of digital payment solutions such as UPI, mobile wallets, and contactless transactions in transforming consumer interactions and business operations. The shift towards a cashless economy has led to faster, safer, and more transparent transactions, benefiting individuals and enterprises alike. However, challenges such as cybersecurity threats, digital literacy, and infrastructure gaps persist. The study also explores the role of government initiatives and regulatory frameworks in promoting digital payments, highlighting their significance in shaping India's financial landscape and fostering inclusive economic development.

Keywords: Digital Payments, Customer Experience, Financial Inclusion, UPI, Mobile Wallets, Cashless Transactions, FinTech, Cybersecurity, Digital Literacy, Economic Growth, Digital India.

1. Introduction

People around the world expect things to be done faster and more efficiently, which is why technology plays a vital role in banking. Technology makes it easy for people to complete even the most difficult tasks. Demonetization created a lot of growth. India has a lot of potential for digital payments and digital wallet companies have tapped into it to increase their market share. Demonetization gave Indian customers a once-in-a-lifetime opportunity to accept digital payment as an alternative to cash. (Nishad and Mude, 2022)

The demonetisation drive boasts of an electronic payment route and technical inclusion, highlighting the importance of digital payment services in today's times. The Digital India campaign promoted digitization of the payment process and boasted about digital inclusion in the digital economy. (Dawatwal, 2020)

The Ministry of Electronics and Information Technology (MeitY) launched the 'Digital India' program in 2015 with a vision to transform India into a digital society and knowledge economy. One of the main parts of this larger program is a special focus on the digital payments' ecosystem. (Vaidya Manjul et al. 2020)

The adoption of digital payments in India has seen an unprecedented surge, driven by technological advancements, government policies, and consumer preferences. This shift has not only facilitated cashless transactions but has also improved customer experience by offering speed, convenience, and security. This paper delves into the factors influencing digital payment adoption and its impact on India's economy.

2. Evolution of Digital Payments in India

India's digital payment landscape has evolved through various phases:

1. Pre-2000 Era - Limited electronic payment options, mainly through credit/debit cards.
2. 2000-2015 - Growth of internet banking, NEFT, RTGS, and early mobile wallets.
3. 2016-Present - Introduction of UPI, increased smartphone penetration, and government-driven cashless initiatives post-demonetization.

3. Key Digital Payment Methods

3.1 IMPS: IMPS facilitates immediate 24*7 electronic fund transfer among peer to peer, person to account and person to merchant settlement through mobile, internet and ATMs. It is a multidimensional and multichannel platform that helps in making payments possible within a fraction of second with all the standards and integrity sustained for security for large number of transactions.

3.2 UPI: NPCI (National Payment Corporation of India) introduced the UPI in 2016 as a



collection of standard Application Programming Interface specializations in performing payment online. UPI performs a variety of functions such as fulfilling a money request, in-app payment within the same mobile of the customer, DTH payment from home or anywhere, UPI auto pay, credit card bill payment, peer-to-peer, and merchant payment.

3.3 AEPS: Aadhaar authentication is the process wherein, UIDAI (Central Identities Data Repository - CIDR) has the data of Aadhar holder such as Aadhar number, and personal information such as, biometric/demographic information which is used for matching the information of Aadhaar holder submitted in UIDAI. If you have an Adhar linked Bank Account, you can use AEPS for various banking services, like transferring funds to other Adhar linked accounts.

3.4 Rupay: Rupay is India's proud response to international payment networks, establishing itself as the country's first fully domestic card payment network. Rupay not only promotes the growth of digital transactions but also protects against phishing. Rupay stands as a symbol of our national identity and pride of our country's capabilities and achievements in the world of financial technology.

3.5 NACH: NPCI has introduced NACH which is a web-based solution that helps banks, financial institutions, corporates, and the government to conduct electronic fund transfers on a large scale, particularly for recurring and periodic in nature. This system proves beneficial for facilitating substantial transactions related to distributing subsidies, dividends, interest, salaries, pensions etc.

3.6 NUUP: *99# services have been introduced to get banking services benefit to each section of society across the country. By dialing *99# on the mobile phone an interactive menu is displayed and customers get benefit of this scheme in remote areas also. It includes many functions such as an interbank account to account transactions, balance inquiries, and changing UPI PIN besides a host of other services to all GSM mobiles in remote areas of the country.

3.7 NETC: NETC system enables payment of toll plazas by using Radio identification technology. It provides consistent nationwide toll payment solution which includes dispute management and clearing house services for settlement. It consists of business rules, a collection of specialized processes and technical capabilities that enables customers to utilize FAS Tag mode at any toll plaza.

3.8 BBPS: Bharat BillPay is the mode of payment that provide immediate payment confirmation through SMS or receipt. It offers uncountable Bill collection categories like water bills, telecom, DTH and electricity bills, etc., and other recurring transactions such as insurance premiums, mutual funds, school fees, institution fees, FAS Tag recharge, and other payments etc.

3.9 RuPay NCMC: NCMC stands for National Common Mobility Card payment. This innovative card envisions the widespread adoption of cashless payments across various public transport systems in the country, including buses, cab, metros, and many more. NCMC cards leads a pivotal role in expanding the reach of digital payment mechanisms within public transportation.

3.10 NEFT: National Electronic Fund transfers system is launched by RBI. It is the system through which funds are transfer by customers from one bank to another bank in India. It is safe, reliable, economical, and efficient system of funds transfer between the banks.

3.11 RTGS: Real Time Gross Settlement system is developed by RBI which helps to fund transfer between banks on "real-time" and "gross basis". Real-time means the transaction is done quickly as soon as processed. Gross settlement refers to the settlement of transaction is done one to one basis without netting and bundling with other transactions and settlement means one's transaction is processed then it can't be revocable Shaikh et al. (2023).

4. Role of Digital Payments in Enhancing Customer Experience

4.1 Speed and Convenience

Digital payments significantly reduce transaction time, providing customers with a seamless experience.



4.2 Security and Fraud Prevention

Advancements in encryption, tokenization, and biometric authentication have strengthened security, enhancing trust in digital transactions.

4.3 Financial Inclusion

Digital payments bridge the gap for unbanked populations, enabling access to financial services through mobile phones and Aadhaar-based authentication.

4.4 Cost Reduction

Lower transaction costs for businesses and customers promote higher adoption rates and financial savings.

5. Challenges in Digital Payment Adoption

5.1 Cybersecurity Threats

Rising cybercrimes necessitate stronger security frameworks to protect consumer data and transactions.

5.2 Digital Literacy and Awareness

A significant portion of the population lacks the necessary knowledge to use digital payments effectively.

5.3 Internet and Infrastructure Limitations

Rural areas still face connectivity challenges, impacting digital payment penetration.

5.4 Resistance to Change

Some consumers and businesses remain hesitant due to habits, trust issues, or preference for cash transactions.

6. Government Initiatives and Regulatory Framework

The Indian government has introduced several measures to promote digital payments, including:

- Digital India Programme - Encouraging digital infrastructure and literacy.
- Pradhan Mantri Jan Dhan Yojana (PMJDY) - Providing banking access to all citizens.
- Demonetization (2016) - Accelerating digital payment adoption.
- RBI Guidelines on Digital Payments - Ensuring security, interoperability, and consumer protection.

7. Future Trends in Digital Payments

- Artificial Intelligence and Machine Learning for fraud detection and customer support.
- Blockchain Technology for enhanced security and transparency.
- Voice-based and Biometric Payments improving accessibility.
- 5G and IoT Integration for faster and more seamless transactions.

8. Accelerating Growth of Digital Payment

UPI has helped in reducing modes of cash requirement like ATMs and Branches which contraction in operational costs and improved experience of customers and also anchors expanded retinue of fintech applications such as digital insurance products, micro pensions and flexible loans. The proportion of digital payment transaction turnover to current GDP to increase by 10.37% to 12.29% in the year 2019 and 2020 and further increase in 2021 is 14.80%. The country's fintech market has experienced remarkable progress, outpacing other nations whose current GDP at US\$2.62 trillion and awaited to achieve US\$5 by 2026. The global average and world's fintech adoption rate is 64% and 87%. In September 2021, India's fintech market, valued at US\$31 billion (third largest in the world), had more than 2100 players. In India 47% internal fraud and leakage from pension payment has reduced. and Govt. save millions of dollars annually in administrative costs Government played active role in popularizing digital payment instruments by organizing different conferences, workshops and many other programs to boost digital transactions.

- **Digi Dhan Mela:** It is introduced on 31 December 2016 by our Prime Minister to attain "Faceless, Paperless, and Cashless" goal of India. Digi Dhan mission is mainly for promoting digital payment ecosystem. Digital payments have registered tremendous growth in India.



- **Digi Dhan Vyapari Yojana:** This scheme was launched December 2016 to promote digital transaction and reduce the cash transactions. Merchant and Trader can win weekly prize from 5000 to 50000 for accepting more digital payment like UPI, USSD, AEPS and Rupay card. To participate in this scheme merchants, have to register themselves in Digi Dhan Vyapari Yojana Portal.
- **Lucky Grahak Yojana:** This scheme was launched in December 2016 by NPCI for promotion of digital payment in rural and urban areas of India. Customers who make digital transactions between Rs. 50 and Rs. 3000 are eligible for the lucky draw under the scheme. This scheme is open to all citizens and the winners are selected through a computerized random draw.
- **Cashback Offers at fuel stations:** Cashback offers at fuel stations are offered by banks, credit card companies and digital payment providers to encourage consumers to use their digital payment methods while purchasing fuel. Fuel stations benefit from increased sales volume and reduced transaction cost.

8. Conclusion and Policy Recommendations

Digital payments have significantly enhanced customer experience in India by providing convenience, security, and accessibility. However, challenges such as cybersecurity risks and digital literacy need to be addressed. Policymakers should focus on strengthening security frameworks, promoting financial literacy, and improving infrastructure to ensure sustainable digital payment growth.

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