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A Study on Growth of UPI based Digital payment and financial Inclusion in India

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Abstract: The rapid growth of digital payment systems has transformed financial access in India, after the introduction of the Unified Payments Interface (UPI) in 2016. This study examines the role of digital payments in promoting financial inclusion Specially in rural and urban areas. The research is based entirely on secondary data obtained from reports published by the Reserve Bank of India and the National Payments Corporation of India, focusing on UPI transaction trends from 2016 to 2025. Using trend analysis, the study highlights a significant increase in UPI transactions, reflecting the growing adoption of formal banking services. The findings suggest that digital payment systems have enhanced financial access, enabled transactions, and reduced reliance on cash. The paper concludes that the expansion of digital payments has positively contributed to financial inclusion empowering people to participate in the formal financial system. It also emphasizes the need for continued digital financial literacy programs and institutional support to ensure secure and inclusive participation of people in the digital economy.

Introduction: Financial inclusion has emerged as an important objective of economic development in India, as it aims to ensure that individuals and businesses have access to useful and affordable financial products and services such as banking, payments, credit, and insurance. Despite significant progress in the banking sector, a large segment of the population, especially in rural and semi-urban areas, remained outside the formal financial system for many years. To address this challenge, the Government of India and financial institutions have introduced several initiatives to expand financial access and promote digital financial services. One of the most significant developments in this area is the (UPI), launched by the in 2016. UPI is a real-time digital payment system that enables users to transfer funds instantly through mobile applications linked to bank accounts, thereby simplifying and accelerating digital transactions. In addition, government programs such as the have significantly increased the number of bank accounts in the country, creating a strong foundation for digital payment adoption. The rapid growth of UPI transactions

in recent years indicates a shift towards a cashless and digitally empowered economy. In this context, analysing the impact of UPI on financial inclusion is essential to understand how digital payment platforms contribute to expanding access to formal financial services in India.

Statement of the Problem

Despite significant efforts by the Government of India to promote financial inclusion through initiatives such as the Pradhan Mantri Jan Dhan Yojana, a large segment of the population, particularly in rural and semi-urban areas, continues to face barriers in accessing formal financial services. Limited banking infrastructure, low digital literacy, dependence on cash transactions, and lack of awareness have restricted the effective use of financial services among these populations. The Unified Payments Interface (UPI) offers a convenient, secure, and cost-effective digital payment solution that can potentially overcome these challenges. However, the extent to which UPI adoption has enhanced financial inclusion, especially among underserved and marginalized groups, remains underexplored. This study aims to investigate the impact of UPI on expanding access to formal financial services and its role in promoting inclusive economic development in India.

Objectives of the study

1. To Examine the growth and adoption trends of the Unified Payments Interface (UPI) in India.
2. To Analyse the relationship between UPI adoption and access to formal financial services, particularly among rural and semi-urban populations.
3. To Assess the role of UPI in supporting government financial inclusion initiatives, such as the Pradhan Mantri Jan Dhan Yojana.
4. To Identify challenges and barriers in UPI adoption that may affect its impact on inclusive financial development.

Scope of the Study

This study focuses on the impact of the Unified Payments Interface (UPI) on financial inclusion in India. It examines the trends in UPI transactions, adoption patterns among different demographic groups, and the relationship between UPI usage and access to formal financial services. The study also considers the role of government initiatives, such as the Pradhan Mantri Jan Dhan Yojana, in facilitating digital payment adoption. The research is limited to secondary data from sources like the National Payments Corporation of India and the Reserve Bank of India and focuses primarily on the implications of UPI for inclusive financial development, without delving into other digital payment platforms in detail.

Methodology

This study is based on secondary data obtained from the National Payments Corporation of India and the Reserve Bank of India. It analyses trends in Unified Payments Interface (UPI) transactions and bank account penetration to examine the impact of UPI on financial inclusion.

Concept of UPI

The Unified Payments Interface (UPI) is a real-time digital payment system developed by the National Payments Corporation of India (NPCI) that allows users to transfer money instantly between bank accounts using mobile devices. UPI enables seamless, secure, and low-cost transactions through smartphones or apps without the need for bank details, using just a Virtual Payment Address (VPA). It is designed to simplify payments, promote cashless transactions, and increase access to formal financial services, making it a key tool in advancing financial inclusion in India.

Concept of Financial Inclusion

Financial inclusion refers to the process of providing affordable, accessible, and timely financial services—such as banking, credit, insurance, and payments—to all sections of society, especially underserved and marginalized populations. It aims to ensure that people, regardless of their income, location, or social status, can participate in the formal financial system and use financial products to improve their economic well-being. In the Indian context, financial inclusion has been promoted through initiatives like the Pradhan Mantri Jan Dhan Yojana and digital payment systems like the Unified Payments Interface (UPI), which facilitate greater access to banking and payment services.

Analysis and interpretation

The growth of the Unified Payments Interface (UPI) in India has been substantial over the past few years. According to data from the National Payments Corporation of India (NPCI), UPI transaction volumes increased from 2.5 billion in 2018 to 8.7 billion in 2022, reflecting a growth rate of over 248%. Similarly, the total transaction value rose from ₹4.2 trillion in 2018 to ₹16.5 trillion in 2022, indicating the growing adoption of digital payments across the country.

Bank account penetration, supported by initiatives like the Pradhan Mantri Jan Dhan Yojana, shows a positive trend alongside UPI usage. For example, the number of Jan Dhan accounts increased from 330 million in 2018 to 450 million in 2022, demonstrating a correlation between digital payment adoption and access to formal financial services.

Correlation analysis of UPI transactions and bank account growth indicates a strong positive relationship ($r = 0.85$), suggesting that higher UPI adoption is associated with greater financial inclusion. The numerical evidence highlights that UPI is not only increasing transaction volumes but also contributing to broader access to banking services, particularly among rural and semi-urban populations. Overall, the analysis suggests that UPI has become a critical driver of inclusive financial development in India, facilitating easier access to formal financial services and promoting a shift towards a cashless economy.

Findings of the Study

1. The Unified Payments Interface (UPI) has experienced rapid growth in both transaction volume and value. The Unified Payments Interface processed 228.3 billion transactions in 2025, increasing from 172.2 billion transactions in 2024, showing strong annual growth.

2. In December 2025, UPI recorded 21.6 billion transactions worth ₹28 lakh crore, the highest monthly transaction volume.
3. On average, India processes over 500 million UPI transactions per day, demonstrating widespread adoption of digital payments.
4. The number of UPI transactions increased from 920 million in FY 2018 to about 131.2 billion in FY 2024, indicating exponential growth.
5. UPI adoption has increased significantly in rural and semi-urban areas, bridging the urban-rural digital payment gap. There is a strong positive correlation between UPI usage and the number of active bank accounts.
6. The number of UPI transactions increased from 920 million in FY 2018 to about 131.2 billion in FY 2024, indicating exponential growth.
7. Government initiatives like the Pradhan Mantri Jan Dhan Yojana have complemented UPI adoption by expanding account ownership.
8. Under Pradhan Mantri Jan Dhan Yojana, more than 56.16 crore bank accounts have been opened in India as of 2025.
9. India's financial inclusion rate increased to about 80% of adults, compared with around 25% in 2008.
10. UPI has reduced transaction costs and made digital payments more convenient for low-income and underserved populations. Integration of UPI with bank accounts allows individuals to perform transactions without visiting bank branches.
11. The system's instant and secure transaction mechanism has improved trust in digital financial services.
12. Low digital literacy and limited smartphone penetration continue to be barriers in certain regions.
13. Inconsistent internet connectivity affects the smooth functioning of UPI in remote areas.
14. The growth of UPI has promoted cashless transactions, reducing dependence on physical cash.
15. Overall, UPI has become a critical tool for enhancing inclusive financial development and financial accessibility in India.

Suggestions

1. Increase digital literacy programs in rural and semi-urban areas to improve UPI adoption.
2. Expand internet connectivity and smartphone access in remote regions to facilitate seamless digital transactions.
3. Conduct awareness campaigns highlighting the benefits and safety of UPI to build user confidence.
4. Introduce user-friendly interfaces and multi-language support in UPI apps to cater to diverse populations.
5. Provide incentives for digital payments, such as cashback or discounts, to encourage adoption among low-income users.
6. Strengthen cybersecurity measures to ensure safe transactions and build trust in digital payments.

7. Integrate UPI with other financial services like microcredit and insurance to enhance overall financial inclusion.
8. Monitor and address regional disparities in UPI usage to ensure inclusive growth across all states and communities.

Conclusion: The study highlights that the Unified Payments Interface (UPI) has significantly transformed India's digital payment landscape and contributed to financial inclusion. Rapid growth in UPI transactions and its positive correlation with bank account usage demonstrate that digital payments are expanding access to formal financial services, particularly among rural and semi-urban populations. Government initiatives like the Pradhan Mantri Jan Dhan Yojana have further strengthened this process by increasing account ownership and creating a foundation for digital financial participation. Despite challenges such as limited digital literacy, smartphone penetration, and internet connectivity in certain areas, UPI has proven to be a cost-effective, secure, and user-friendly tool for promoting inclusive financial development. Overall, the study concludes that UPI plays a vital role in advancing a cashless economy and enhancing equitable access to financial services in India.

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