

Impact of Digital Payments [UPI] Financial Inclusion in India

Harvir Singh Choudhary*, Seema Mishra* & Amisha Kumari**

* Associate Professor, Deptt. of Economics, J V Jain Degree College, Saharanpur

** Student, M.A. Economics, (3rd Sem.), J V Jain Degree College, Saharanpur, UP

Abstract:

Financial inclusion is a critical policy objective for emerging economies aimed at providing equitable access to formal financial services. In India, the introduction of the UPI (Unified Payment Interface) has fundamentally transformed the digital payments ecosystem and accelerated the process of financial inclusion. This paper analyses the UPI's impact on financial inclusion in India using secondary data sourced from World Bank Global Findex data base, Reserve Bank of India, National Payment Corporation of India (NPCI) & the Government of India statistics. The study examines trends in UPI transactions, volume, growth in digital payment adoption, & financial access indicators such as account ownership and usage. The findings indicate a strong positive association between the rapid expansion of UPI and increased participation in the formal financial system, particularly among low income households and small merchants. The study concludes that UPI has emerged as a key instrument for advancing digital financial inclusion in India and highlights the need for strengthening digital infrastructure & financial literacy to sustain inclusive growth.

Keywords: Financial Inclusion, Unified Payment Interface (UPI), Digital Payments, India economy, Global Findex, RBI.

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Corresponding Author:

Amisha Kumari, Student, M.A. Economics, (3rd Sem.), JV Jain Degree College, Saharanpur, UP

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1. Introduction

Financial Inclusion has emerged as a central pillar of Inclusive and sustainable economic development, particularly in developing economies such as India. It refers to the availability & effective usage of affordable financial services including saving, credit, insurance, & payment systems by all segments of society, especially the poor, women & rural populations. Access to formal financial services enhances economic participation, reduces income inequality and supports poverty alleviation by integrating marginalized groups into the mainstream economy.

In recent years, digital financial services have played a transformative role in advancing financial inclusion. The rapid expansion of mobile technology, internet connectivity, & digital identification systems has enabled government and financial institutions to deliver financial services more efficiently & at lower cost. In this context, India has witnessed a remarkable shift towards digital payments, driven by initiatives such as Digital India, Pradhan Mantri Jan Dhan Yojana (PMJDY), Aadhaar and the promotion of cashless transactions.

A major milestone in India's digital payment journey was the launch of the Unified Payment Interface (UPI) by the National Payments Corporation of India (NPCI) in 2016. UPI is a real time payment system that facilitates instant, secure and low cost fund transfers between bank accounts using mobile devices. Unlike traditional payment systems, UPI eliminates the need for complex banking details, thereby lowering entry barriers for the first time users. Its user-friendly design and interoperability across banks & denominations have widespread adoption across urban & rural areas.

The growth of UPI has been unprecedented with transaction volumes increasing exponentially over the years. It has become the dominant mode of digital payment in India, accounting for a substantial share of total digital transactions. UPI has enabled small merchants, informal sector workers, low income households to participate in the formal financial system by providing a simple & accessible digital payment platform. Its expansion has also contributed to reducing cash dependency, improving transaction transparency, and strengthening the efficiency of the payment ecosystem. Despite significant progress in account ownership, challenges related to active usage of financial services persist. The World Bank's Global Findex data highlights that while a large proportion of adults in India have bank accounts, a comparatively smaller share regularly use their accounts for digital transactions. This gap underscores the impact of digital payment systems such as UPI in converting financial access into meaningful financial inclusion. Against this background, the present study seeks to analyse the impact of UPI in financial inclusion in India by examining trends in digital payment growth & key financial inclusion indicators. By using data from the World Bank, RBI, NPCI (National Payment Corporation of India) & Government of India reports, the study aim to provides empirical insights into the role of UPI in promoting inclusive financial development.

2. Review of Literature

The relationship between digital payment & financial inclusion has attracted increasing attention. In recent years, particularly in context of developing economies. Several studies have examined how technological innovation in the financial sector can expand access to formal financial services & improve economic participation among underserved populations.

The World Bank, through its Global Findex data base (2021, 2025), provides comprehensive evidence on the state of financial inclusion worldwide. The Global Findex report (2021) indicates that India has made substantial progress in expanding bank A/c ownership, with nearly 78% of adults having access to a formal financial A/c. However, the report also highlights a significant gap between A/c ownership and active usage, especially in digital transactions. This suggests that access alone is insufficient and efficient digital payment systems are necessary to deepen financial inclusion.

The RBI (2023) in Payment Systems Report, emphasizes the rapid growth of digital payments in

India & identifies UPI as the most dominant platform, according to RBI findings UPI accounts for more than 80% of total digital transaction volumes, reflecting its widespread acceptance. The RBI notes that UPI has reduced transaction costs, improved payment efficiency and enabled small merchants & informal sector participants to access digital financial services.

Studies by Sharma (2021) & Kumar & Patel (2022) focus on the role of UPI in transforming payment behaviour in India. Sharma (2021) finds that UPI adoption has significantly reduced cash dependency and encouraged small businesses to accept digital payments. Kumar & Patel (2022) argue that UPI has enhanced financial inclusion by providing a user-friendly & interoperable payment system that requires minimal technological knowledge, making it accessible to rural & low income population.

The National Payments Corporations of India (NPCI) reports highlight the exponential growth of UPI transaction since its launch in 2016. NPCI data show that the expansion of UPI QR codes and mobile based applications has facilitated digital payment even in semi-urban and rural regions. These developments have played a crucial role in integrating informal economic activities into the formal financial system.

Government of India Initiative under the Digital India programme & Pradhan Mantri Jan Dhan Yojana (PM JDY) has also been examined in the literature. Studies suggest that the combination of universal bank accounts & digital payment infrastructure has created a strong foundation for financial inclusion. However, researchers such as (Singh (2020) point out that digital literacy, Internet connectivity, and cyber security concerns, remain key challenges in achieving inclusive digital finance.

While existing literature knowledge the positive impact of digital payment on financial inclusion, most studies focus either on account ownership or general digital payment growth. There are limited empirical research that specifically look the rapid expansion of UPI with broader financial inclusion indicators using international and national datasets. The present study seeks to address this gap by systematically analysing the impact of UPI on financial inclusion in India using data from the World Bank, RBI, NPCI, & government of India sources.

3. Objective of the study

1. To examine the growth & adoption of the UPI in India.
2. To analyse the role of UPI in promoting digital payment across different section of society
3. To assess the impact of UPI on financial inclusion in terms of access to formal financial service.
4. To study the relationship between UPI usage and reduction in cash based transaction.
5. To evaluate financial Inclusion trends in India using World Bank Global Findex Indicators.
6. To identify key challenges & policy implications related to digital financial Inclusion.

4. Hypothesis

H₀ (Null Hypothesis)

The adoption of Unified Payment Interface (UPI) has no significant impact on financial inclusion in India.

H₁ (alternative Hypothesis)

The adoption of the Unified Payment Interface (UPI) has a significant positive impact on financial inclusion in India.

5. Methodology

The present study adopts a descriptive & analytical research approach to examine the impact of the Unified Payment Interface (UPI) on financial Inclusion in India. The study is based on secondary data, which allows an in-depth analysis of digital payments trends and their relationship with financial inclusion at the national level.

The data for the study have been collected from reliable & authorised sources such as World Bank Global Findex database, RBI report, NPCI publication & Government of India digital payment statistics released under the Digital India Initiative. These sources provide accurate &

comprehensive information on financial inclusion indicators and UPI transaction growth.

The period of the study covers (2016-2024) beginning with the introduction of UPI & lending to its widespread adoption across the country. This time period captures the growth & expansion of UPI as a major digital payment platform.

In this study, the growth & adoption of UPI, measured through transaction volumes & usage trends is treated as the independent variable. Financial Inclusion Indicators such as access to bank A/c, usage of digital payment services & reduction in cash-based transactions are considered as dependent variables.

The analysis of data is carried out using simple statistical tools such as tabular presentation, percentage analysis & graphical representation including line graphs, pie charts. Trend analysis is used to observe changes over time and to examine the relationship between UPI growth & financial inclusion.

However, the study is limited by its reliance on secondary data & does not attempt to establish causal relationship.

6. Data analysis and Interpretation

This section analyses the growth of Unified Payment Interface (UPI) & its implications for financial inclusion in India using secondary data from RBI, NPCI, World Bank's Global Findex Database. The analysis focuses on trends in UPI transaction volume, its share in digital payments, & financial inclusion indicators such as account ownership & digital payment usage.

6.1. Growth of UPI transactions in India

UPI has shown exponential growth since its introduction in 2016. According to RBI, NPCI data, UPI transaction volume increased sharply during the post-2016 period, especially after demonetization and the digital India push.

Table1: Growth of UPI transformation in India

Year	UPI Transaction Volume (Crore)	UPI Transaction Value (LakhCrore)
2018	375	5.86
2019	1254	21.31
2020	2234	41.03
2021	4594	83.75
2022	8375	139.10
2023	11761	182.84
2024	17221	200+

Source: RBI payment System Reports: NPCI Statistics

Interpretation: The table clearly shows that UPI transaction volume increased from 375 crore in 2018 to over 17000 crore in 2024. Indicating massive adoption. This rapid growth reflects increased trust in digital payments. Improved smartphones, penetration, and ease of use. UPI rising transaction value also suggests that UPI is being used for not only for small payments but also for higher-value transactions.

6.2. Share of UPI in total Digital Payments

UPI has become the dominant mode of digital payment in India.

Table 2: Share of UPI in total Digital Payments

Year	Share of UPI (%)
2019	34
2020	51
2021	63
2022	73
2023	79

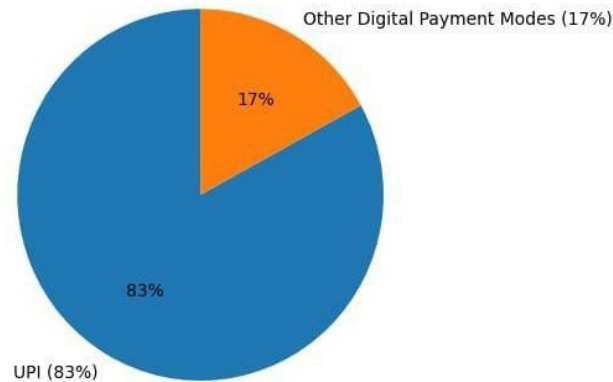
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2024	83
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Source: RBI annual reports.

Interpretation: UPI share in digital payments increased from 34% to 83% in 2024 showing its central role in India's digital financial ecosystem. This dominance highlights UPI's contribution to financial inclusion by offering a low cost & accessible platform for digital transactions.

Share of Digital Payment Modes in India (2024)



6.3. Financial inclusion indicators: World Bank Global Findex Data

The World Bank Global Findex Database provide internationally comparable data on financial inclusion.

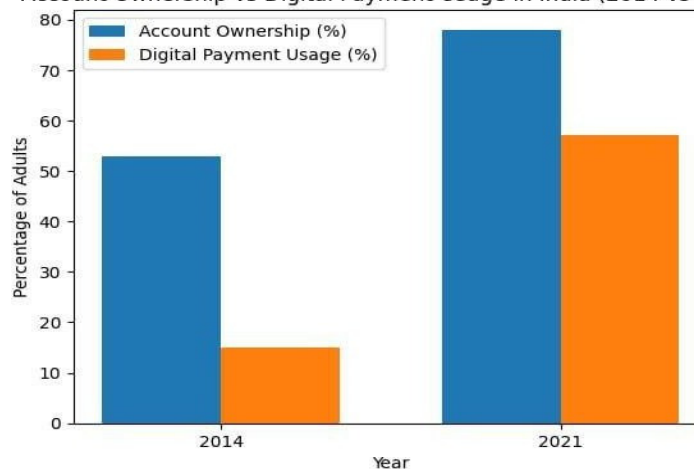
Table3: Financial Inclusion Indicators – India

Indicators	2014(%)	2021(%)
Adult with a bank account	53	78
Adult using digital payments	15	35
Adult with mobile money usage	2	12

Source: World Bank Global Findex Database

Between 2014 & 2021 the rise is 53% to 78% (adults with bank A/c) due to PMJDY. However the rise in digital payment usage from 15% to 35% (highlight the role of digital platform such as UPI in converting account access into active usage). This suggests that UPI has strengthened the usage dimension of financial inclusion.

Account Ownership vs Digital Payment Usage in India (2014 vs 2021)



7. Findings of the study

Based on the analysis of secondary data from RBI, NPCI, & The World Bank Global Findex Database, the following key findings emerge:

1. The UPI has recorded extraordinary growth in transaction volume & value since its introduction in 2016. Indicating widespread acceptance among users.
2. UPI has become the dominant digital payment mode in India, accounting for more than 80% of total digital payment transactions by 2024.
3. Financial inclusion in India has improved significantly in terms of bank A/c ownership which increased from 53% in 2014 to 78% in 2021 supported by Government initiatives such as PMJDY.
4. The usage of digital payments increased substantially from 15% in 2014 to 35% in 2021, highlighting the role of UPI in converting financial access into active financial participation.
5. UPI has facilitated greater inclusion of small merchants, informal workers, & low-income households, by providing low-cost & easy to use digital payment platform.
6. The expansion of UPI has contributed to a reduction in cash-based transactions, improving transparency & efficiency in the payment system.

8. Conclusion:

The study concluded that the UPI has played a transformative role in strengthening financial inclusion in India. While government initiatives significantly expanded bank account ownership, UPI has been instrument in promoting the usage dimension of financial inclusion by enabling digital transactions across socio-economic groups. The rapid growth in UPI transactions reflect increased trust in digital payments system & improved access to formal financial services.

UPI's user-friendly design, interoperability and minimal transaction cost have lowered barriers to entry for first-time users & small businesses, thereby integrating a larger segment of the population into the formal financial system. However, challenges such as digital illiteracy gap, uneven internet connectivity & cyber security concerns remain. Addressing these issues through targeted policy measures & digital awareness programs can further enhance the contribution of UPI to inclusive and sustainable economic development in India.

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