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## Unified payment interface: Gap analysis and directions for future research

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### Abstract

The Unified Payments Interface (UPI) has revolutionized India's digital payment ecosystem, positioning the country as a global leader in real-time payment systems. This study explores the dynamic evolution of UPI adoption, focusing on key factors such as user perceptions, adoption patterns, and satisfaction levels that drive its sustained success. A comprehensive review of existing literature identifies critical determinants of user satisfaction, including concerns over privacy, digital literacy, and the impact of major government initiatives like demonetization and the COVID-19 pandemic. Despite UPI's rapid expansion, significant gaps persist in understanding the obstacles to broader adoption and the limited utilization of its diverse features. Notably, research on users' continuance intention, trust development, and fraud prevention remains scarce. This study highlights the importance of assessing continuance intention as a crucial predictor of long-term user engagement. The findings emphasize the need for NPCI to implement strategies that not only enhance user satisfaction but also raise awareness of UPI's full range of functionalities. By addressing continuance intention, trust, and fraud prevention, this research provides valuable insights into strengthening user retention and long-term engagement in the evolving UPI landscape.

**Keyword:** UPI, Mobile payments, NPCI

### Introduction

India has made significant strides toward becoming a cashless economy with the introduction of UPI, which effectively transforms smartphones into virtual payment gateway. The widespread adoption of digital payments has been largely driven by UPI, making financial transactions more accessible to the public.

UPI plays a pivotal role in promoting financial literacy, which in turn fosters financial inclusion and contributes to economic growth (Rastogi, 2021) <sup>[34]</sup>. According to the *Prime Time for Real-Time 2022* report, India's real-time payment ecosystem comprises both the Immediate Payment Service (IMPS) and UPI, both of which have witnessed a remarkable surge in usage in recent years.

In 2021, India recorded the highest number of real-time transactions globally, reaching 48.6 billion—far surpassing China's 18 billion transactions. This means India's transaction volume was 2.7 times higher than that of China and nearly seven times greater than the combined real-time payments of major global economies such as the US, Canada, the UK, France, and Germany, which together accounted for 7.5 billion transactions.

Payments through UPI facilitate seamless transactions by eliminating geographical constraints, ensuring secure payment processing, and providing digital records of spending history. However, despite these advantages, UPI also faces certain challenges, including system downtimes, the need for technical knowledge, transaction limits, concerns over security, and a lack of awareness regarding the psychological impact of digital payments.

### Objectives of the Study

1. To examine the evolutionary path of the UPI
2. To delineate research gaps through an in-depth review of the current literature on UPI
3. To furnish insights for prospective research endeavors

## Literature Review

The existing scholarly research on a particular subject is compiled and synthesized in a literature review. In this report, the study tries to analyse the papers chronologically to understand the progress of UPI and the progress of UPI-based research studies. The study focuses on the impact of the Unified Payments Interface (UPI), a system launched in August 2016, with analysis covering its development and adoption since 2017.

## Articles on UPI

1. Gochchwal (2017) <sup>[16]</sup> traced the evolution of India's payment systems, detailing UPI's architecture and security through empirical and theoretical review of qualitative data. Findings suggest that UPI, still in its early stages, could benefit from merchant-focused solutions to enhance user acceptance, making it a powerful tool for financial inclusion and extending digital economy access to a larger population.
2. Kakade (2017) <sup>[21]</sup> strived to raise knowledge about the UPI which is a step toward a cash-free society. Conceptual and Descriptive Research methods are used, and data are collected from secondary sources like Government sites, articles, etc. UPI is set to transform business transactions, heralding a new era of digital payments where smartphones become the central tool for completing all types of transactions. With time, UPI will eliminate cash transactions and lessen the use of currency notes. As a result, the economy will become cashless, and the system will be transparent.
3. Sathishkumar (2018) <sup>[40]</sup> analysed the growth and trend of UPI transactions to estimate future UPI transaction volume and evaluate other payment systems during the past year. This analysis relies entirely on secondary data collected from NPCI, RBI, and a range of books and articles published in various journals and publications. According to the study, the UPI system will grow rapidly because of the distinctive features that set it apart from other payment systems and that it promotes digital empowerment through its usability and simplicity. However, it cannot completely replace digital payment methods, particularly credit cards as it has credit facilities for customers.
4. Nigam (2018) <sup>[30]</sup> explored BHIM adoption among Gen Y users, who are active online, frequently download apps, shop online, and are open to new cashless platforms. While it employs the Technology Acceptance Model (TAM) to assess and predict technology acceptance, TAM lacks the diagnostic tools to pinpoint specific technological flaws. The study highlights the need for a trust factor, as no security solution is entirely foolproof. It suggests incorporating prior usage, user experiences, and user characteristics as additional constructs to TAM in future research.
5. Philip (2019) <sup>[33]</sup> tried to identify customer preferences for UPI and to examine its impact on customer satisfaction. Findings indicate that customers generally have a positive outlook toward UPI services, and there is a link between respondents' education levels and their use of UPI—educated individuals are more likely to use these services. Additionally, the increase in smartphone users and wider internet access in various regions has supported the adoption of UPI services.
6. Chaudhari (2019) <sup>[7]</sup> explored customers' perceptions of UPI compared to traditional services and examined how UPI impacts customer satisfaction. The study revealed that respondents prioritized transparency, safety, and security in UPI services, emphasizing the necessity of verifying user identity to mitigate fraud.
7. Batil (2019) <sup>[2]</sup> investigated UPI adoption within selected Indian banks through the Technology Acceptance Model (TAM), finding that factors like perceived ease, risk, and security significantly influence UPI usage across different regions. The analysis indicates that age groups do not notably affect the perceived usefulness, cost, or trust in UPI usage, nor do factors like education level or occupation impact UPI adoption.
8. Kumar (2020) <sup>[25]</sup> assessed the influence of UPI systems on customer satisfaction through descriptive and empirical methods, gathering primary data from a survey of 90 online banking users and supplementing it with secondary sources. Analytical techniques such as chi-square tests, t-tests, ANOVA, and correlations revealed a generally positive customer attitude toward UPI services, highlighting a connection between various UPI service aspects and customer satisfaction. However, issues like limited digital literacy and operational complexity were identified as barriers to adoption.
9. Gupta (2020) <sup>[19]</sup> provided a comprehensive review of UPI mechanisms, comparing UPI with other digital payment methods based on data from 140 UPI users in Meerut, collected via intercept interviews. The study, using ANOVA and frequency analysis, found that demographic factors, except for education, minimally influence UPI adoption, indicating that education significantly impacts UPI acceptance. It further suggested expanding this research to other regions.
10. Khanra (2020) <sup>[24]</sup> examined factors related to customer resistance in continued UPI use, applying Innovation Resistance Theory and incorporating privacy concerns and visibility as new constructs. Findings show that privacy issues and usage barriers are key hurdles to reducing consumer resistance to UPI, with security concerns and word-of-mouth (WOM) partially moderating the relationships between primary variables and continued UPI usage.
11. Sankararaman (2021) <sup>[39]</sup> conducted research on multiple UPI transaction parameters, including awareness, satisfaction, user challenges, and issue resolution timeframes. Using descriptive research with convenience sampling, the study revealed that while 87% of respondents were aware of UPI, only 72% expressed satisfaction with its performance. Additionally, 69% of respondents benefited from cashback offers, yet 45% encountered payment failures when using UPI.
12. Rastogi (2021) <sup>[34]</sup> examined UPI's influence on financial literacy, inclusion, and economic advancement for the underprivileged in India. Based on 500 samples from semi-urban and rural Maharashtra with Pradhan Mantri Jan Dhan Yojana accounts, the study applied PLS-SEM analysis, highlighting that

- technological access, convenience, cost-effectiveness, and voluntary exclusion are primary factors sustaining the UPI platform. UPI positively affects financial literacy, which in turn drives financial inclusion. The study recommends future research considering government interventions, informal sectors, and behavioral factors.
13. Devi (2021) <sup>[10]</sup> evaluated UPI usage and user satisfaction across factors such as age, frequency, intended use, and monthly spending. The findings demonstrate significant gender differences in UPI adoption, with respondents showing a favorable attitude toward UPI transactions, supporting a move toward a less-cash society in India.
  14. Mahesh (2021) <sup>[28]</sup> assessed UPI's role in advancing the digital economy, employing a SWOT analysis. The study highlighted UPI's significant growth over recent years, driven by the rise of contactless payments and the expansion of digital payments within the retail sector. The study recommends that future research explores user attitudes toward UPI and other e-payment options using structured behavioral models.
  15. Gajjar (2021) <sup>[15]</sup> aimed to raise awareness about UPI-related scams and ways to prevent them. The study categorizes common UPI scams, including lottery or prize scams, wire transfer fraud, and debt collection scams, often executed through cashback offers, money requests, malicious apps, and fake customer support.
  16. Deshpande (2021) <sup>[9]</sup> studied the psychological behaviors of users in response to fraudulent tactics through a survey of 500 participants in Pune and Maharashtra. The results indicated that age and profession do not significantly affect user reactions to social engineering attacks; rather, emotional factors determine the depth of response. The study emphasizes the importance of security, awareness, training, and education in preventing such attacks and calls for further research on these aspects.
  17. Vishnoi (2021) <sup>[45]</sup> provided a comprehensive analysis of UPI, detailing its benefits, limitations, and current status. The study highlighted advantages such as year-round functionality, linking multiple bank accounts to a single VPA, enhanced security, instant settlement, and no fees. However, challenges like low e-literacy and technology confidence were noted. Despite these issues, UPI's societal impact has been significant, making India a leader in real-time payment systems within five years.
  18. Fahad (2022) <sup>[13]</sup> explored factors influencing UPI usage and adoption through the Diffusion of Innovation theory, introducing satisfaction as a new construct for recommendation intentions. Using convenience sampling, data from 395 respondents across five cities revealed that relative advantages, complexity, and observability drive UPI adoption. However, the study overlooked the human and cultural aspects of mobile payments, neglecting privacy and security concerns.
  19. Saha (2022) <sup>[38]</sup> examined factors affecting baby boomers' UPI adoption using an extended UTAUT model that included ubiquity, privacy risk, and perceived security. Data collected from various regions in Karnataka showed that the COVID-19 pandemic significantly influenced this group's adoption of UPI for contactless payments. Future research could investigate the intentions of baby boomers who have not yet adopted UPI, potentially uncovering barriers to acceptance.
  20. Deshmukh (2022) <sup>[8]</sup> assessed the level of satisfaction among respondents regarding UPI services. By conducting empirical research through convenience sampling, the study acknowledges that UPI has given some sort of satisfaction among the users due to some of its promising features like timesaving, no time restriction, real-time working, spending history, etc.
  21. Agarwal (2022) <sup>[1]</sup> examined customer perceptions of UPI systems awareness and usage. By performing a survey through simple random sampling, the study reveals the factors that influence UPI over plastic money. This included Easy use, Quick Payments, contactless payments, etc. It further adds that the major source of UPI awareness is friends, and most users use UPI for daily transactions. Despite the government's efforts, only 17% of the population use cashless transactions frequently. So, a detailed study to identify the obstacles for adopting UPI can be performed.
  22. Kaur (2022) <sup>[23]</sup> attempted to measure user satisfaction and continuance intentions for UPI. UTAUT with personal innovativeness and pace of innovation as additional constructs was adopted for the study. An online survey was conducted among 651 people who use UPI. For data analysis, a three-step approach (CFA, SEM, and bootstrapping analysis) was employed. The study reveals that satisfaction with UPI acts as a mediator between antecedents and ongoing intentions, positively influencing both. Additionally, consumers' intention to continue using UPI impacts their willingness to recommend the service.
  23. Gupta (2020) <sup>[23]</sup> investigated the influence of user experiences with UPI on the adoption of Central Bank Digital Currency (CBDC) in India. The study found that social influence, hedonic motivation, and performance expectancy significantly drive CBDC adoption. However, Gupta warned that UPI may not serve as an effective moderator for all users, potentially undermining the relationship between performance expectancy and behavioral intention, as well as between social influence and usage behavior. These findings should guide the development of strategies to enhance the adoption of emerging technologies.
  24. Singh (2024) examined UPI-based digital payment solutions for users with visual impairments. The findings revealed that while these mobile applications include accessibility features, they face significant design challenges, particularly regarding screen reader compatibility, keyboard navigation, and the clear labeling of buttons and controls.

### Economic Survey 2023

The Economic Survey indicated that UPI-based transactions increased by 121 percent in value and 114 percent in volume. In FY22, UPI accounted for 52 percent of the total 8,840 crore digital financial transactions, reflecting a steady rise in its adoption. The survey noted that UPI comprised 17 percent of the 3,100 crore digital transactions in FY19, which climbed to over 27 percent of 4,600 crore

transactions in subsequent years.

In August 2023, UPI achieved a record high, processing 1,058.6 crore transactions valued at Rs 15.76 lakh crore. Up to December 2022, UPI facilitated 2,922 crore contactless merchant transactions, totaling Rs 21.7 lakh crore for FY23. The Economic Survey highlighted that UPI's success is not limited to India; the National Payments Corporation of India (NPCI) is actively promoting UPI and RuPay-powered applications in international markets, including Singapore, the UAE, France, and the Netherlands. The analysis of charts, articles, and economic survey reports provides us with a clear idea of its expansion in our nation and how it affects our daily lives. Indian Government, RBI, and NPCI are frequently taking steps to develop UPI infrastructure. The Digital India program and its motto towards financial inclusion is highly achieved through UPI (Economic Survey, 2023).

- Studies, reports, and graphs provide an insight that people became aware of UPI and started adopting it, as their perception towards it stays positive.
- Now it's time to look after people's continuance towards UPI as Central Bank Digital Currency (CBDC) and Buy Now Pay Later (BNPL) have already entered the market.
- The time factor and continuance intention are the two aspects that will reveal the answer to whether digital currencies and Buy Now Pay Later (BNPL) are going to compete or accompany UPI.
- With the rise in adoption comes an increase in fraud cases (Economic Survey, 2023), underscoring the importance of establishing trust.

### International Articles

Analysing the literature on mobile payments can help us better grasp their nature and the study topics because UPI is one of the methods utilised to make mobile payments. Literature on mobile payments helps us understand new gaps that may be appropriate for finding research gaps in UPI because UPI is a relatively new idea.

1. Reiting (2020) <sup>[35]</sup> focused on aspects shaping user adoption of mobile payment by adopting the TAM and UTAUT model. The study reveals that adoption-Perceived ease of use, perceived usefulness, performance expectancy, social influence, personal innovativeness, trust, and risk are the major influencers of adopting mobile payments whereas age and knowledge are the moderators. Post-adoption usage is highly dependent on experience, usability, and enjoyment (Study from the United Kingdom).
2. Lin Jia (2020) <sup>[27]</sup> tried to examine how five different technology usage habits influence consumers' intentions to persist in using mobile payments. By adopting the TAM model and UTAUT model the study finds that frequent technology users never hesitate to make mobile payments and repeat customers bringing more profit to companies with low marketing costs. Habit plays a vital role that may lead to the intention to continue mobile payment. (Study from US).
3. Oskar Szumski (2020) <sup>[32]</sup> examined technological trust across various payment methods, revealing that maturity, transparency, and knowledge of popular payment systems foster user trust, particularly among

men. The study notes that mobile payments still exhibit lower trust levels compared to other digital methods, based on findings from Poland.

4. Lian (2021) <sup>[26]</sup> explored the evolution of mobile payment systems, focusing on transactions between Movii users. The research highlights how Movii facilitates small vendors in accepting mobile payments, transitioning digital payments from peer-to-peer (P2P) to business-to-business (B2B) exchanges in Colombia.
5. Franque (2021) <sup>[14]</sup> investigated the factors influencing continued use of mobile payments, employing the DeLone and McLean Information System Success Model alongside the Expectation-Confirmation Model. Analyzing 338 online survey responses through PLS-SEM, the study found that user satisfaction and performance significantly predict continuance intention, suggesting that trust and perceived security warrant further exploration in future research across African countries.
6. Hou (2021) <sup>[20]</sup> discussed the influence of digital payments on household consumption through the lens of mental accounting theory, utilizing data from the 2017 China Household Finance Survey. The findings indicate that digital payment adoption alters spending behaviors, with self-control being a key factor in mitigating overspending, while ease of use has the most pronounced impact on consumer spending.
7. Bo Qu *et al.* (2022) <sup>[6]</sup> studied customer motivation and intention towards e-cash adoption by applying the UTAUT model with additional constructs such as perceived security and usage costs. The results underscore the significance of perceived security and cost on e-cash acceptance, while perceived ease of use and usefulness positively influence the intention to use e-cash in China.
8. Devid Jegerson (2022) <sup>[11]</sup> investigated acceptance factors for digital mobile payments in the UAE, employing the IS Success Model and UTAUT framework. The study finds that despite a rise in digital payments, acceptance remains low, with security and ease of use as critical drivers for user intention to continue using these systems.
9. Oktavendi (2022) <sup>[31]</sup> aimed to identify factors motivating Generation Z to continue utilizing Zakat, Infaq, and Sodaqoh (ZIS) digital payments, applying the Technology Acceptance Model and Innovation Diffusion Theory. Analyzing data from 314 respondents aged 15-25, the findings reveal that personal innovativeness, facilitating conditions, and social influence drive digital payment adoption, while risk affects trust but not behavioral intention in Indonesia.
10. Belanche (2022) <sup>[10]</sup> assessed success factors influencing the adoption of Bizum, a prominent P2P mobile payment system used by nearly half of the Spanish population. Data collected from 240 individuals through social media questionnaires and analyzed using Structural Equation Modelling confirmed that user attitudes and perceived control over the app enhance usage and word-of-mouth intentions. The study concluded that subjective norms, age, and gender are less critical in Bizum adoption, with



perceived risk being moderated by perceived security.

### National Articles

11. Umesh (2017) <sup>[44]</sup> sought to assess stakeholders' willingness to adopt mobile payments and retailers' intention to accept them. The study tried to grasp the behavioural intent of stakeholders by using descriptive research with stratified purposive sampling with 339 samples around the Coimbatore region. The study integrates the Integrative Model of TAM, UTAUT and Lazy User Model. The study disclosed that the propensity to mobile payments is high with seamless transactions and less cost and respondents between the age group of 41-50 prefer mobile payments for their ease of use. The study understood that the perceived risk of errors, fraud, and lack of training are the major issues in adopting mobile payment.
12. Goparaju (2017) <sup>[17]</sup> examined the extensive literature on digital payments, emphasizing mobile commerce and business applications. Utilizing Porter's Five Forces Model, he determined that technological advancements and financial innovations will propel the adoption of digital payments, especially micropayments. He recommended conducting pilot studies to identify essential factors for fostering a successful digital economy in developing nations such as India.
13. Shamshadali (2018) <sup>[41]</sup> attempted to evaluate the status of the Cashless Economy concept in the Indian scenario. By collecting and analysing the secondary data from different annual reports of RBI, the study perceived that the cashless Economy concept of India is a success by positively improved results in the usage and performance of various electronic settlements and the Indian economy will have a positive impact on the cashless policy in its growth. Moreover, the status of the total electronic settlements is increasing in a positive range.
14. Sharma (2019) <sup>[42]</sup> tried to explore and summarize the most dominant factors affecting the intention to adopt m-wallets. With the help of exploratory factor analysis, the study realize that youth prefer the m-wallet most, and male when compared to female prefers m-wallet usage. Consumers consider m-wallets useful when compatibility and awareness are explained to them in vernacular languages. The author further proposed conducting a comparative study between metro and non-metro cities to get better insights.
15. Roshna (2019) <sup>[37]</sup> examined mobile banking usage in Kerala, revealing significant knowledge disparities among users, with most adopting the service only in the past two to three years. The study recommends exploring other mobile commerce channels, like mobile wallets, and suggests research on improving mobile banking for better financial inclusion.
16. Singh (2020) <sup>[43]</sup> evaluated merchants' intentions to adopt mobile wallet technology, finding that perceived customer value and technology usage significantly influence these intentions, with perceived trust serving as a crucial mediator.
17. Gosh (2022) <sup>[18]</sup> investigated barriers to mobile payment adoption in India using Innovation Resistance Theory

and structural equation modeling. The study found that usage, image, and value barriers deter adoption, particularly among older generations. It suggests focusing on rural areas and exploring diverse geographical contexts and age groups for further insights.

### Analysis of literature

The articles analysed on the UPI (UPI) and mobile payments provide a wide-ranging look at factors influencing adoption, satisfaction, and challenges. Here's a synthesized breakdown of the main themes and findings:

1. **Evolution and Technology of UPI:** Some studies (Gochchwal, 2017) <sup>[16]</sup> focus on the technology and security architecture of UPI, emphasizing its role in financial inclusion and its potential to evolve with merchant-centric solutions. Others, like Gupta (2020) <sup>[19]</sup> and Kakade (2017) <sup>[21]</sup>, highlight UPI's transformative role in pushing towards a cashless society.
2. **User Adoption and Acceptance:** Multiple studies (Nigam (2018) <sup>[30]</sup> Batil, (2019) <sup>[2]</sup> use models like TAM and UTAUT to understand the factors driving UPI adoption. These include perceived ease of use, usefulness, security, and trust, with demographic variables such as education being significant in adoption, as shown by Philip (2019) <sup>[33]</sup> and Kumar (2020) <sup>[25]</sup>. For instance, familiarity with digital technology often enhances user adoption, suggesting education levels impact UPI's reach.
3. **User Satisfaction:** Research by Kaur (2022) <sup>[23]</sup> and Chaudhari (2019) <sup>[7]</sup> delves into factors like transparency, security, and satisfaction. Satisfaction, coupled with ease of use and security, often translates to higher continuance intentions. For example, Sankararaman (2021) <sup>[39]</sup> found a positive correlation between user satisfaction and the overall awareness and utility of UPI, even though operational challenges like transaction failures persist.
4. **Security and Fraud Concerns:** Studies by Gajjar (2021) <sup>[15]</sup> and Deshpande (2021) <sup>[9]</sup> highlight rising concerns about UPI fraud, identifying types like scam calls and fake apps. The studies recommend user education and preventive awareness as vital steps to mitigate risks. Privacy and security remain key barriers to sustained use, as also noted by Khanra (2020) <sup>[24]</sup>.
5. **Impact on Financial Inclusion and Economic Development:** UPI's influence on financial literacy and inclusion is covered by Rastogi (2021) <sup>[34]</sup> and Devi (2021) <sup>[10]</sup>, who observe that UPI has made significant strides in reaching underserved populations. However, literacy and complexity in operations remain obstacles for broader adoption, especially in rural areas.
6. **International Perspectives on Mobile Payments:** Articles on mobile payments beyond India reveal global insights into mobile payment adoption. For instance, Franque (2021) <sup>[14]</sup> and Hou (2021) <sup>[20]</sup> address continuance intention and spending behaviours in African and Chinese contexts, respectively, revealing cultural and demographic nuances. Meanwhile, studies from Europe (Reiting (2020)) <sup>[35]</sup> underscore trust, performance expectancy, and risk as universal adoption

factors.

7. **Gaps and Future Directions:** Many studies call for additional research into underexplored areas like consumer resistance (Khanra (2020) <sup>[24]</sup>) and the role of government policies (Bo Qu *et al.* (2022)) <sup>[6]</sup>. Expanding UPI research to cover psychological, behavioural, and cultural barriers would provide further insight into adoption hesitance among certain demographics.

Overall, the studies underscore that while UPI has transformed India's payment landscape, key challenges remain. Future research could delve into trust-building, fraud prevention, continuance intention and customization for diverse user segments, which could further solidify UPI's place in India's digital economy.

### Interpretation

The aforementioned research, along with various international and national studies, clearly demonstrates that technology is in a perpetual state of evolution. Innovations and inventions within the tech landscape continually attract users.

The international literature provides valuable insights into the diverse models of digital or mobile payments employed in various studies, each with its own distinct advantages and disadvantages. Additionally, there are real-time payment systems in other countries that resemble India's UPI, though they are not identical.

The chronological progression of the research aids in understanding user perceptions of UPI. Initial studies focused on UPI technology and the assessment of user awareness. Over time, research began to delve into user perspectives, attitudes, and intentions regarding UPI, eventually leading to numerous investigations into user satisfaction and adoption rates.

Early surveys indicated a reluctance among individuals to adopt UPI, primarily due to concerns over privacy and security. Another significant factor contributing to this reluctance is the lack of digital literacy among users.

Conversely, several factors have catalysed the adoption of UPI, including demonetization, the COVID-19 pandemic, initiatives under the Digital India program, and reduced internet costs. The absence of Merchant Discount Rate (MDR) fees for retailers and zero transaction costs for consumers are additional advantages bolstering UPI's success. However, as transaction volumes surge, banks are increasingly challenged to sustain these free UPI transactions.

Consequently, banks have petitioned the government to impose fees for UPI transactions. This could pose a risk of users migrating to alternative platforms if the banks' interests are prioritized. Furthermore, the government has initiated a pilot study of the Central Bank Digital Currency (CBDC), and the future relationship between CBDC and UPI—whether they will accompany or compete—remains to be seen.

### Research Gap

Despite the rapid adoption and success of UPI in India's digital payment landscape, several critical gaps remain

unaddressed in the existing literature. Most studies focus on UPI adoption but do not explore why users continue or discontinue using UPI services over time. Research on continuance intention is limited and does not provide a comprehensive behavioural analysis incorporating psychological, technological, and economic factors. While security concerns are widely acknowledged, limited research examines the impact of trust-building mechanisms, fraud prevention strategies, and user perceptions of security policies. Studies predominantly assess perceived risks but do not propose effective mitigation strategies to enhance trust in digital transactions. Additionally, research primarily analyses UPI as a payment system, neglecting its broader functionalities like UPI AutoPay, credit line facilities, and interoperability with international markets. There is a lack of studies on how user awareness and financial literacy impact the adoption of advanced UPI features beyond peer-to-peer (P2P) transactions. While adoption studies consider demographics like age and education, there is limited research on how socio-cultural and behavioural factors influence UPI usage across different user segments, such as rural versus urban users and elderly versus youth. Psychological aspects such as the fear of digital payments, habit formation, and cognitive biases remain largely unexplored. The introduction of Central Bank Digital Currency (CBDC) and Buy Now Pay Later (BNPL) raises questions about their relationship with UPI. Will these technologies compete or complement UPI? No conclusive study has evaluated the potential market shifts and policy implications of integrating these financial innovations.

### Conclusion

The review of the literature provides insight into the study that helped to identify the research gap. The study collects secondary data of different forms like articles, reports, statistical data, etc., and analysing them assists us in comprehending the facts and factors that influence society. It is abundantly evident from the review that there are some variables that motivate us to use this technology, yet one should not ignore the fact that there are some factors that inhibit consumers from using it. UPI witnessed mass adoption and accounted for 52% of total digital payments for FY 2022 (Economic Survey, 2023). Adoption alone does not ensure success and persistent utilization, but continuance intention is considered more relevant to analyse its success. Adoption and diffusion of UPI are exponentially growing day by day but predicting the users' continuance intention towards UPI is more relevant in understanding its enduring success. It has been proven that continued use is crucial because recruiting new users can cost up to five times as much as keeping existing ones. More so than their adoption, consumers' intention to continue is what determines a technology's long-term survival.

So, the NPCI will be able to build new strategies for success by assessing and measuring users' intent to continue using UPI, and the intention of youth towards UPI is also found crucial. Moreover, UPI's additional services, which require greater attention, are largely overlooked and primarily used for payments. Lastly, establishing trust, the most significant challenge, needs to be effectively addressed.

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