

## **From Cash to Clicks: The Transformative Impact of UPI on Consumer Behaviour and Financial Inclusion in India**

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### **ABSTRACT**

*This paper investigates the transformative impact of the Unified Payments Interface (UPI) on consumer behaviour, financial inclusion, and economic growth in India. Since introduction of UPI in 2016, it has revolutionized digital payments by offering a real-time, secure, and convenient platform for financial transactions. Through a comprehensive literature review and primary survey data from 140 respondents, this study investigates user perceptions of UPI's convenience, efficiency, and security compared to traditional cash transactions. Findings indicate high user satisfaction with UPI's speed and ease of use, leading to a significant shift towards digital payments, although it also suggests a potential for increased impulsive spending. The paper further explores UPI's macroeconomic contributions, including enhanced financial inclusion, improved transparency in government welfare programs, and boosted small business operations. The data analysis, presented with figures, highlights the demographic profile of UPI users and their transaction preferences, revealing a strong preference for UPI over cash across various transaction types. The conclusion directly addresses the research question, emphasizing UPI's pivotal role in India's journey towards a cashless society and its broad economic benefits. This study acknowledges limitations regarding its geographical and demographic scope and provides a questionnaire in the appendix.*

**Keywords:** Cashless Transactions, consumer behaviour, Digital Payments, economic growth. financial inclusion, and Unified Payments Interface (UPI)

### **1. Introduction**

The Unified Payments Interface (UPI) is a groundbreaking digital, real-time payment system introduced by the National Payments Corporation of India (NPCI). It was developed to enable real-time financial transactions using smartphones with a basic secure PIN (Shree et al., 2021). It unifies several bank accounts into a single mobile platform with a view to offering customers the

comfort of instant money transfer, bill payments, and other financial services. This system enables inter-bank transactions without the necessity of physical visits to banks, providing a more efficient, secure, and convenient substitute for conventional banking practices (Chircu, 2015).

UPI's convenience and efficiency have transformed India's financial interactions from daily purchases and streamline business operations, making it a vital part of the economy (Hanedar, 2023). Consumers widely favour UPI for its user-friendliness, high satisfaction, and ability to conduct small and large transactions seamlessly. Its capacity to handle a wide range of transaction sizes is a significant advantage in India's growth.

The Indian government has promoted digital financial inclusion through initiatives like the Aadhaar biometric ID and the Pradhan Mantri Jan Dhan Yojana, linking bank accounts to biometrics and mobile numbers to support a robust digital infrastructure (Duvendack et al., 2023; Parsheera, 2024).

## **1.2 Secondary Research**

### **Unified Payments Interface: Functionality, Benefits, and Challenges**

The Unified Payments Interface (UPI), enables real-time P2P and P2M transfers directly from bank accounts via a Virtual Payment Address (VPA) or mobile number. Operating 24/7, it offers seamless, immediate transactions through mobile devices, allowing users to link multiple accounts. Its security is enhanced by "Single Click 2 Factor Authentication" and virtual addresses, eliminating the need to share sensitive details. It supports various functions such as bill sharing, merchant payments, utility bills, and donations, making it highly versatile. The ecosystem includes Customer PSPs, Payee PSPs, banks, NPCI, customers, and merchants. (Singh, 2011)

UPI offers significant advantages round-the-clock availability, the convenience of managing multiple bank accounts on a single app, enhanced security through virtual IDs, and direct complaint resolution through the mobile app (Roy, 2011).

Merchants gain from seamless fund collection, reduced risk associated with storing customer data, access to a wider customer base (including those without cards), suitability for e-commerce and m-commerce, and efficient handling of Cash on Delivery scenarios. However, UPI also faces certain challenges like both parties involved in a transaction has to get phone number linked to their bank account. Grievance for failed transactions can be complex and leads to financial loss. Compatibility issues with all operating systems (currently primarily Android-based) and the time it takes for users, especially in rural areas, to adopt new technologies is a challenge

(Kaur,S(2021). Lastly, security concerns regarding potential misuse in case of mobile theft remain a significant apprehension for some users.

### **1.3 User Perception of UPI**

Indian consumers have widely embraced the Unified Payments Interface (UPI), hailing the system as highly convenient and satisfactory. A survey found that 91.5% of the respondents were satisfied with their experience using UPI, while 95.2% found the payment process using UPI convenient. The majority of respondents praised the convenience of UPI in making payments without having to handle physical cash, appreciating the speed and efficiency of UPI in handling small payments. The system allows users to make payments ranging from as little as Rs 1 to Rs 1 lakh in one transaction, which is hailed as a significant advantage in a rapidly cashless economy.

However, the abstractness of UPI transactions has also brought about behavioural adjustments. A study indicated that approximately 74.2% of survey respondents reported a higher level of spending due to UPI, with the majority admitting that the system compromises their ability to budget. The abstractness of the transactions has been attributed to impulsive spending, which often leads to regret upon viewing users' bank statements. This finding suggests that even though UPI enhances convenience, it also necessitates greater financial literacy and discipline on the part of users. UPI's simplicity in various applications has made it a game changer in India's economy, enabling users to rely on it for day-to-day and business transactions, aligning with socio-economic reforms like demonetization and COVID-19 lockdowns.

### **1.4 Convenience and Efficiency of UPI Transactions**

The Unified Payments Interface (UPI) has revolutionized digital payments in India, offering convenience and efficiency that surpasses cash payments (Raj,2024). UPI allows real-time interbank transfer of funds using a UPI PIN, promoting deeper financial inclusion and allowing access to financial services for those with limited banking coverage (Dev, 2024). Its speed and ease of use make UPI transactions more convenient than regular cash payments, leading to spontaneous buying decisions. UPI's low transaction fees make it an economical choice for both consumers and merchants, reducing operating costs. The absence of fees also promotes mass adoption, allowing both small businesses and consumers to utilize UPI for their transactions.

### **1.5 Macroeconomic Impact of Digital Payments**

The impact of digital payment methods on economic growth is linked to their capacity to improve financial inclusion, increase efficiency, and promote transparency in financial transactions (Lahrèche et al., 2020; Shukla et al., 2018). Real-time payment systems enhance government initiatives by enabling instant, secure, and transparent fund disbursement. One of the

most prominent initiatives in India is the Direct Benefit Transfer (DBT) program, which ensures that subsidies and welfare benefits reach intended recipients directly through their bank accounts. This program covers a wide range of schemes, such as the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN), which provides financial assistance to farmers, and the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), under which wages are directly deposited into workers' accounts (D'Silva,2019)

Digital payments can reduce the monetary costs associated with printing and circulating banknotes and are generally more efficient, safe, and convenient (Kurniawan et al., 2019). The digitization of payments leads to a more efficient allocation of resources, reduced transaction costs, and increased transparency in financial transactions, which can lead to higher economic growth.

The present paper aims at examining the impact of the Unified Payments Interface (UPI) on consumer behaviour, financial inclusion, and economic growth in India. Specifically, it investigates user perceptions of UPI's convenience, efficiency, and security compared to traditional cash transactions. This paper also analyses demographic patterns in UPI adoption, and explored the broader macroeconomic implications of this digital payment system.

## **1.6 Literature Review**

A study by Shree et al. (2021) found that 91.5% of Indian users found UPI convenient, leading to increased spending. The study also found that the ease of digital transactions reduced the psychological 'pain of paying', making consumers more likely to spend. The research suggests integrating financial literacy programs to prevent financial mismanagement and emphasizes the need for consumer education alongside technological deployment.

Hanedar et al. (2023) focused their research on the role of UPI in enhancing financial inclusion, especially for populations historically excluded from formal banking systems. Their work emphasized the integration of UPI with Aadhaar-based identification systems, which significantly reduced entry barriers for millions of citizens. By analysing data on account opening rates, digital transaction volumes, and mobile app penetration post-UPI launch, the study confirmed that UPI had a transformative effect on bringing unbanked and underbanked individuals into the financial mainstream. The study also highlighted the importance of government-backed schemes like Jan Dhan Yojana and the Direct Benefit Transfer (DBT) system in amplifying UPI's reach. Importantly, Hanedar et al. emphasized that the success of such digital interventions depends heavily on continued investment in infrastructure and digital literacy, especially in rural areas. Their work serves as a policy-focused examination of how UPI functions not only as a payment platform but as a vehicle for socioeconomic inclusion. It

underscores the interdependency between technology, public policy, and financial empowerment.

Bhavsar and Samanta (2022) explored the macroeconomic impacts of UPI through rigorous econometric modelling. Using the Autoregressive Distributed Lag (ARDL) and Dynamic Ordinary Least Squares (DOLS) methods, they examined how digital payment adoption influences GDP, national income, and financial sustainability. Their results confirmed a statistically significant and positive long-term relationship between the expansion of digital payments and economic growth. This finding is vital in the context of India's aspirations for a digitally driven economy, as it validates that fintech innovations like UPI are not merely supportive services but key drivers of economic development. Their study also emphasized the role of digital payments in improving financial transparency, reducing tax evasion, and fostering economic formalization. By incorporating national-level data across multiple years, the authors provided a strong quantitative basis for policy decisions that support digital finance. This study contributes significantly to the literature by positioning UPI as a foundational infrastructure for long-term economic planning and highlights its potential for sustaining national income growth when paired with effective regulatory and technological support.

Ghosh (2022) investigated demographic determinants affecting UPI adoption in India. By employing statistical analysis on a wide-ranging dataset, they identified age, educational attainment, urban-rural location, and income level as strong predictors of UPI usage. Their findings suggest that younger, more educated, and higher-income individuals are more inclined to adopt and regularly use UPI services. One of the key insights from their research is the existence of a digital divide that may prevent reasonable access to digital payment systems. The authors argue that this divide can be mitigated through targeted educational campaigns, better digital infrastructure in rural areas, and incentives for first-time users. The study further delved into usage behaviour, revealing that demographic factors also influence the frequency, purpose, and perceived ease of digital payments.

Agarwal and Sengupta (2021) looked into the cybersecurity issues connected to using UPI. They pointed out risks like phishing, unauthorized payments, SIM card swapping, and weaknesses in payment apps. The study used technical checks and reports from users to understand how these risks affect people's trust in using digital payments. The authors stressed that while UPI makes payments easier, it can only succeed if users trust the system. This trust depends on strong security measures and clear ways to handle complaints and fraud. They suggested stronger login methods, real-time fraud detection, and educating users about safety. They also said that government rules are important to keep the digital payment system safe, especially as UPI grows quickly in India. This study is important because it focuses on security, which is a key concern for people using UPI. Its findings help create a safer digital payment system that encourages

more people to use it while protecting them from cybercrime.

## **II. Objective of the paper**

The primary objective of this paper is to analyse:

1. How do users perceive the convenience and efficiency of UPI transactions compared to traditional cash transactions?
2. To what extent does UPI adoption vary across demographic groups, such as age and profession, and how do these variations influence users' financial practices, including spending habits and long-term financial goals?

## **III. Research Design**

This study utilized primary and secondary data collection techniques. A random sampling method for the survey component was used as primary data collection method, targeting individuals aged 15 and above who may/may not have used UPI for payments. The survey was conducted as shown in Appendix in the form of Google Forms to ensure easy accessibility and respondent anonymity (by not asking for their personal information like name, phone number, etc). It gathered 140 responses from a diverse participant pool spanning various age groups and occupations, including working professionals, students aged 14 years and above, and business owners. The young students were included in the study because these days there are apps like fam pay for teenager to make UPI transactions in addition to the cash given by parents. It was floated across various social media platforms and groups and no questions were marked as mandatory; however, respondents were encouraged to provide honest and accurate responses as much as possible.

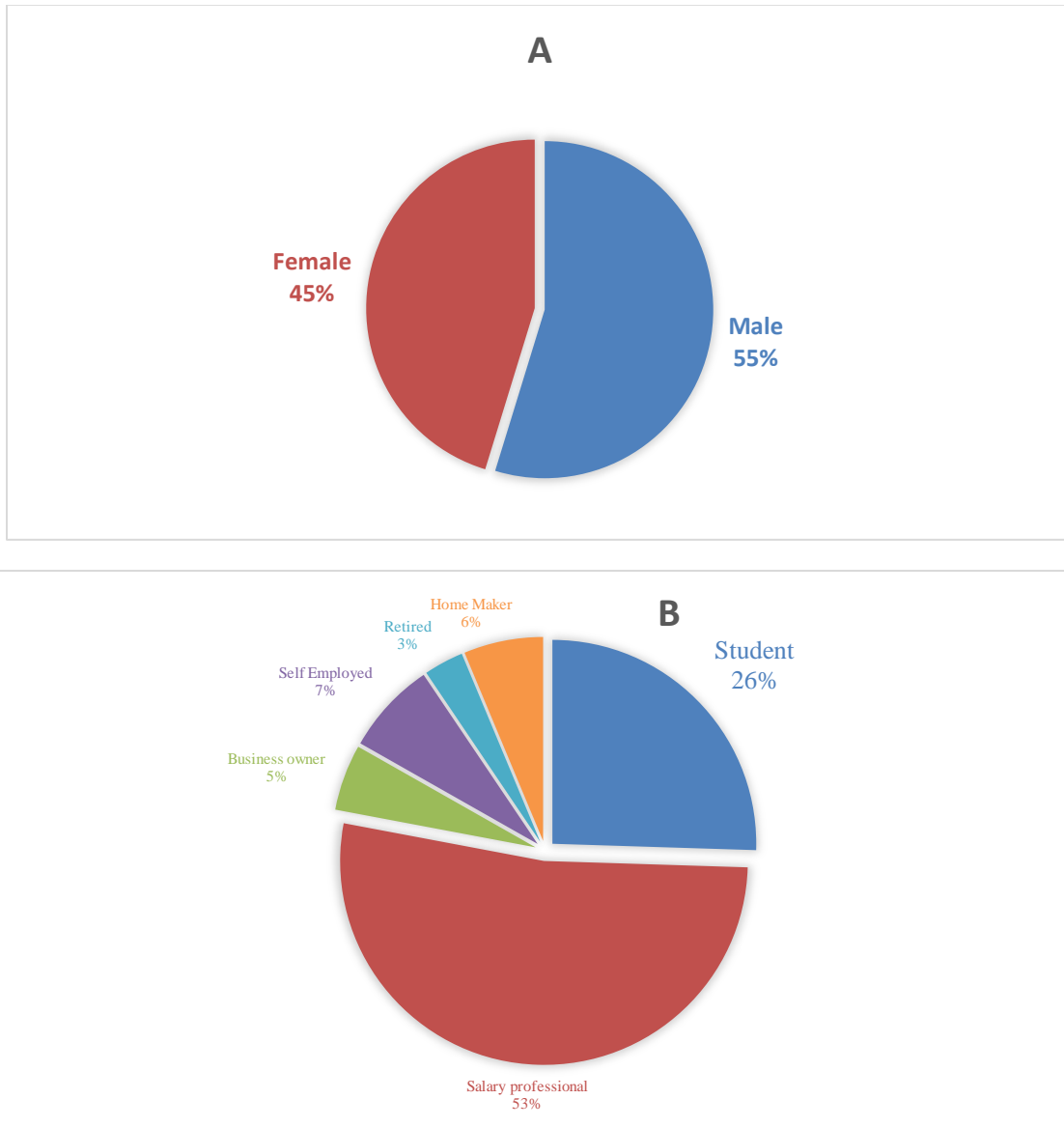
## **IV Result and Data Analysis**

This study combines quantitative analyses to assess impact of UPI on consumer behaviour and economic growth of India. A structured questionnaire collected 140 data responses from a diverse range of respondents from various demographics and backgrounds. Among the respondents, 26% identified as students, 42% as working professionals, 4.7% as business owners and homemakers mainly. Graphical and Statistical analysis was done to summarize data. The findings are intended to see trends of shift to cashless economy due to financial inclusion and also urges to have policies around secure financial transactions.

### **IV.1 Demographic Information**

The figure 1 shows the representation among the 140 respondents is below 20 years old (23.6%),

followed closely by 30–40-year-olds (23.6%), indicating that these two young adult age brackets make nearly half of the survey participants.



**Fig1 A and B: The demographic profile of participants**

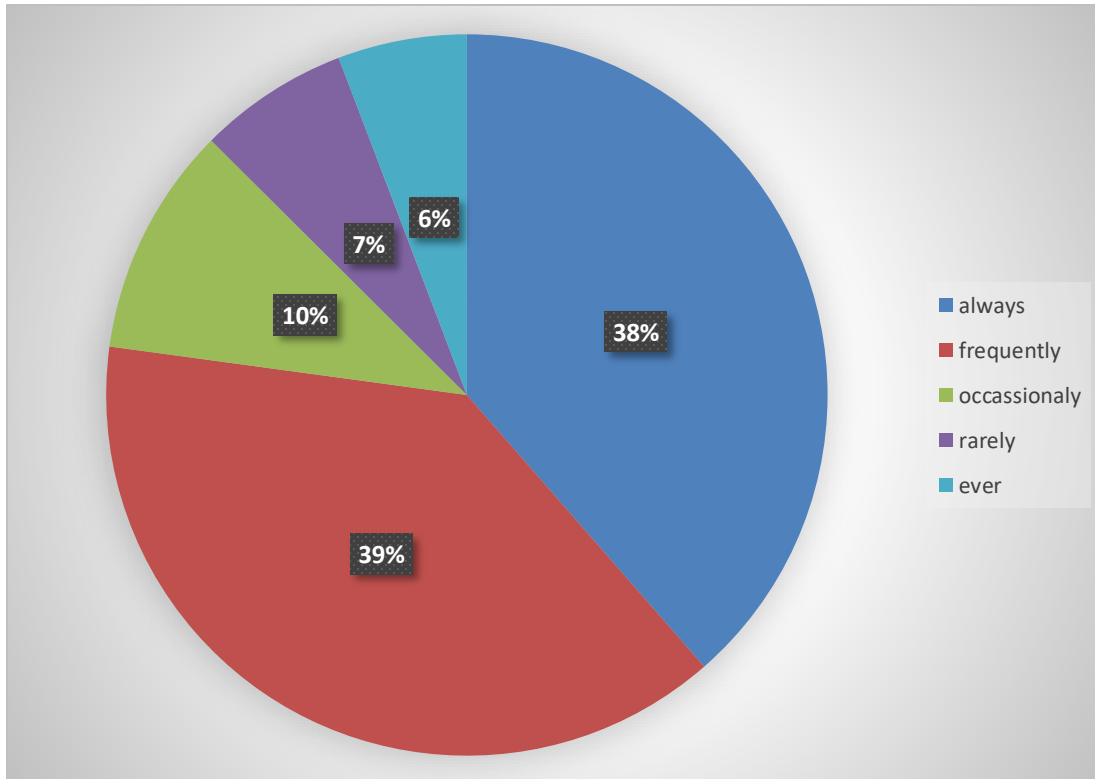
The remaining respondents are distributed across other age groups, with the smallest representation in the 50-60 and 60+ categories (both at 9.3%) due to strong belief in traditional methodology and not adept at financial and technological changes. The demographic analysis in Figure2 shows Gender Distribution among participants who are financial literate to some extent and participate in financial transactions on daily basis for their living needs and business. There

was imbalance in gender distribution, 77% of respondents were male, 19.7% were female which depicts that adoption of finance inclusion is missing in females in India which could be due to gaps in financial literacy among women, lack of women empowerment. This could be due to gaps in financial literacy among women, lack of women empowerment.

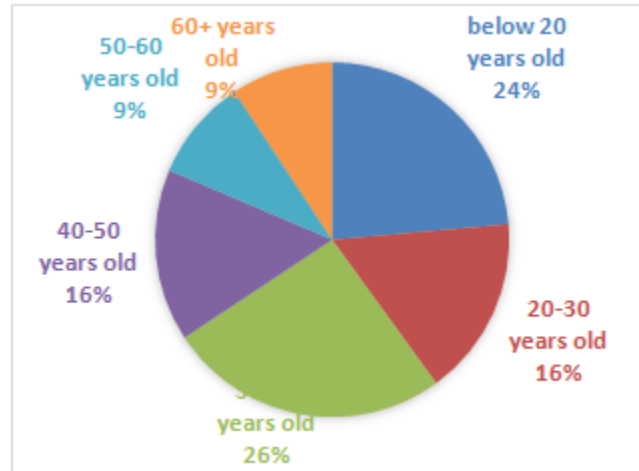
Data also signifies significant majority (50%) of the 140 respondents identify as Salary Professionals, making them the dominant occupational group in this survey. Students form the second-largest group (24.3%), indicating a substantial representation of individuals in education. The remaining participants are distributed across various occupations such as Business Owners, Self-Employed, Retired, and Homemakers, each constituting a smaller proportion of the total sample. The data shows that salaried professional with higher incomes and professional occupations tend to adopt and utilize cashless transactions more readily due to convenience and technology comfort.

#### IV. 2 Usage of UPI and Cash Transactions

**Fig 2: Age of subjects participated in the study and involved in financial transactions and gender distribution**

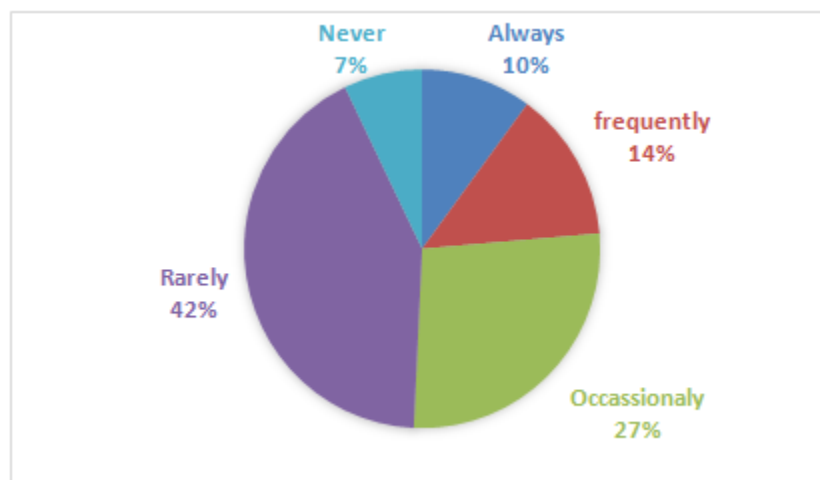


**Fig 3: Frequency usage of UPI by participants**



A large portion of the 140 respondents (40%) reported using UPI for financial transactions "Always," indicating a strong reliance on the platform. Figure 3 shows another significant segment (40%) uses UPI "Frequently," suggesting it is a common method of payment for a substantial majority of those surveyed. The remaining 20% of respondents use UPI less often, with "Occasionally" at 10.7%, "Rarely" at 5.7%, and "Never" at 3.6%.

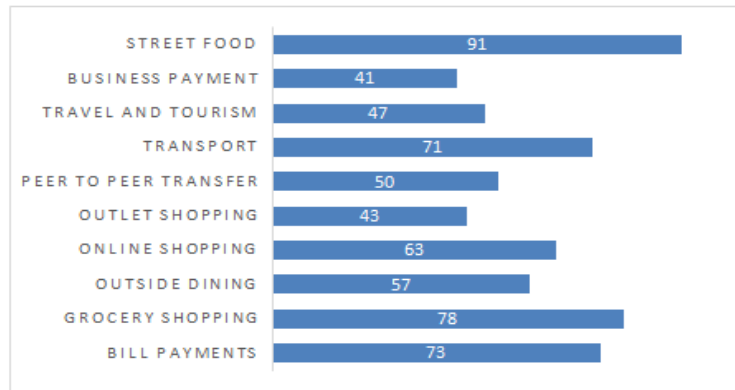
**Fig 4: Frequency usage of cash by participants**



The survey also examined how frequently respondents use cash for financial transactions.

The figure 4 indicates that the maximum percentage of respondents rarely prefer to use cash (42.1%), and only 10% of the respondents prefer to always use cash.

**Fig 4: Types of transaction preferred by UPI over cash**

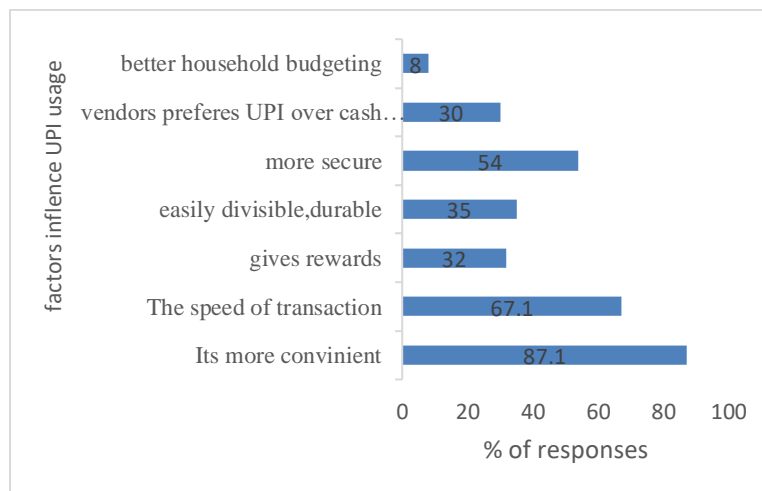


The survey further explored the types of transactions for which respondents prefer UPI over cash. The figure 4 displays that the maximum percentage of respondents prefer to use UPI for grocery shopping (78.6%), bill payments (72.9%), and transport (71.4%), and peer-to-peer transactions (50%). UPI is least preferred for business payments (29.3%). These results highlight the daily use and preference for UPI payments across a variety of common transaction types.

### IV.3 Factors Influencing UPI Usage

The figure 5 shows that the maximum percentage of respondents prefer to use UPI or cash when doing Grocery Shopping, paying bills and Peer to Peer transactions. The least amount of people prefers to use UPI in Business Payments. Thus, showing the daily use and preference of UPI Payments.

**Fig 5: Factors influence to use UPI instead of cash**

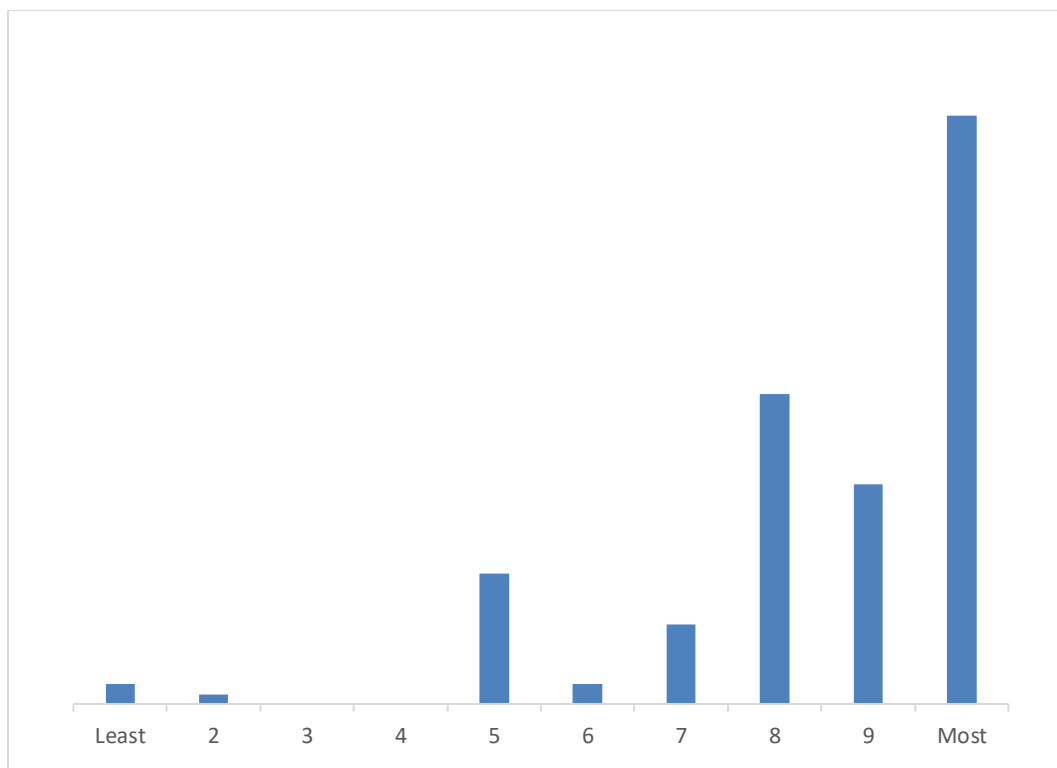


The most significant factor influencing UPI usage over cash, according to the 140 respondents, is its convenience, with 122 individuals (87.1%) citing this reason. The speed of transactions is also a major driver, with 94 respondents (67.1%) indicating this as an influential factor. Security, with 75 respondents (53.6%) finding UPI more secure than holding cash, is another important consideration for many users.

#### IV. 4 Perceived Convenience and Efficiency

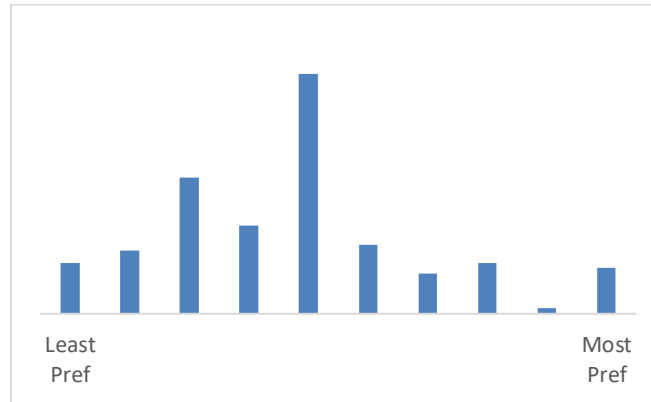
A substantial majority of the 140 respondents find UPI transactions highly convenient, with the largest group (42.1%) rating the convenience as a perfect 10. The figure 6 shows responses regarding the convenience of cash transactions are more varied compared to UPI. The highest number of respondents (30.7%) rated cash convenience as a point 5.

**Fig 6: Rating of the convenience of UPI transactions from preferring least to most preferred**



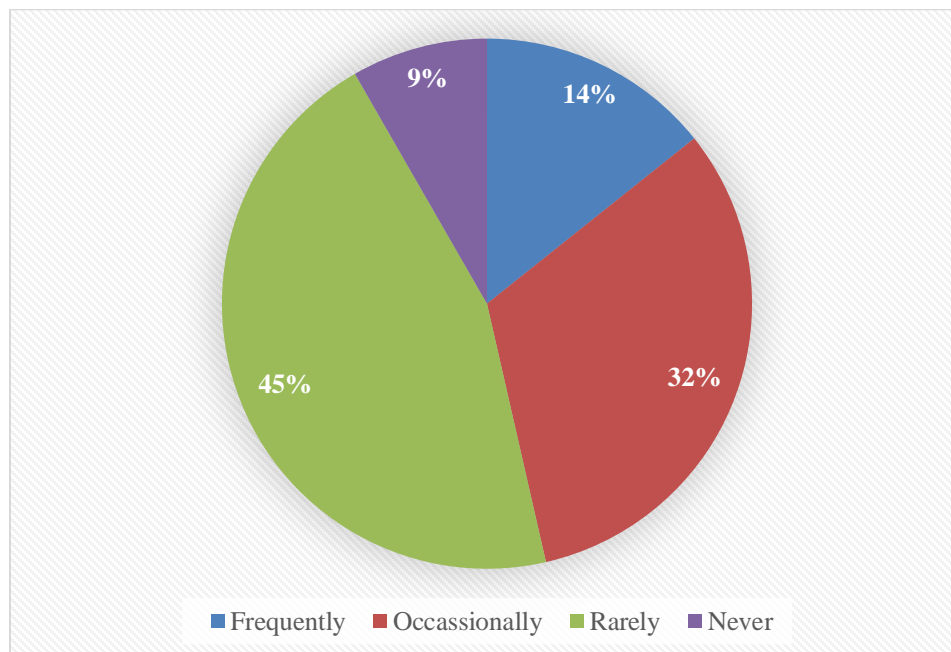
There is a noticeable spread across the convenience scale, with a considerable number finding cash moderately convenient (ratings of 3, 4, and 6) and a smaller group rating it at the extremes of inconvenience (1 and 2) and convenience (9 and 10). This suggests a less uniform perception of cash transaction convenience.

**Fig 7: Convenience of transaction by cash rating from least to most preferred**

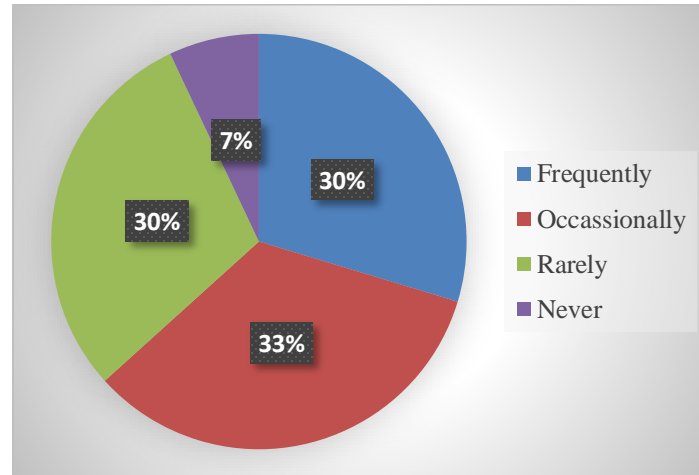


A majority of the 140 respondents (50.7%) reported facing difficulties with UPI transactions. Figure 7 shows that "Rarely," suggesting that while issues occur, they are not a frequent experience for most. A significant portion (36.4%) indicated experiencing difficulties "Occasionally," highlighting that technical issues and transaction failures are not uncommon. Only a small percentage of respondents reported facing difficulties with UPI either "Frequently" (3.6%) or "Never" (9.3%).

**Fig 8: Difficulties while using UPI for financial transaction**

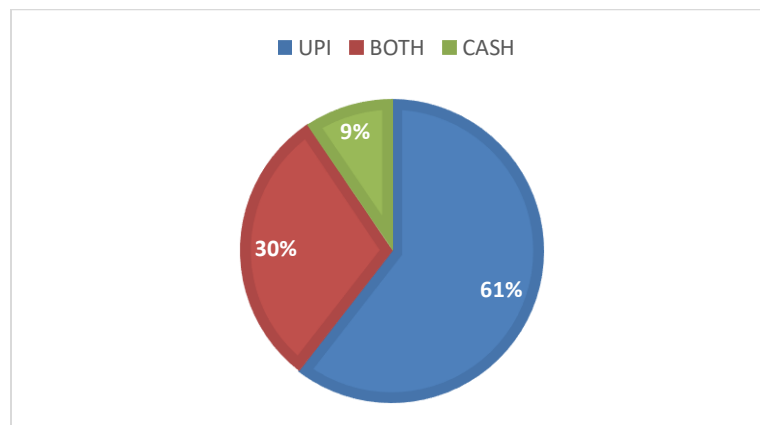


**Fig 9: Difficulties faced during transaction by cash for financial transaction**



Similarly, a significant portion of the 140 respondents (33.6%) reported facing difficulties with cash transactions "Occasionally," indicating that issues like finding change or dealing with lost/damaged cash are not uncommon. Figure 9 show another substantial group (30%) experienced these difficulties "Rarely," while a considerable percentage (29.3%) reported facing difficulties with cash "Frequently," and a smaller segment (7.1%) stated they have "Never" encountered such issues.

**Fig 10: Which Transaction method is more convenient for daily transactions**



In a figure 10, it is found that 140 respondents in this study (64.3%) find UPI to be the more convenient payment method, while a notable portion (32.9%) find both UPI and cash equally convenient. Only a small fraction of respondents (2.9%) consider cash to be the more convenient option.

**IV.5 Spending Habits and UPI**

**Fig11: Participants view on changes in spending pattern due to UPI**

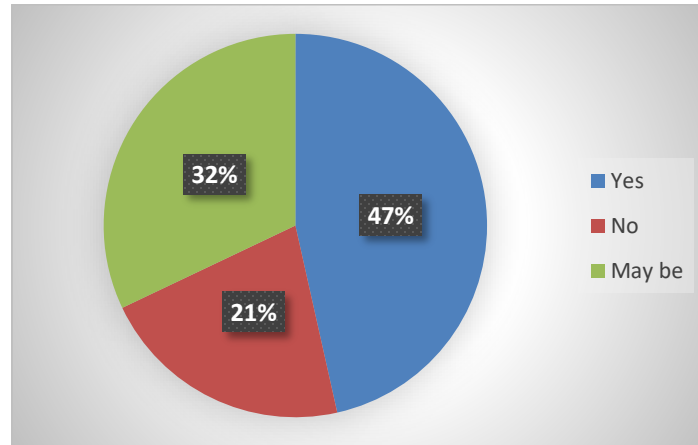
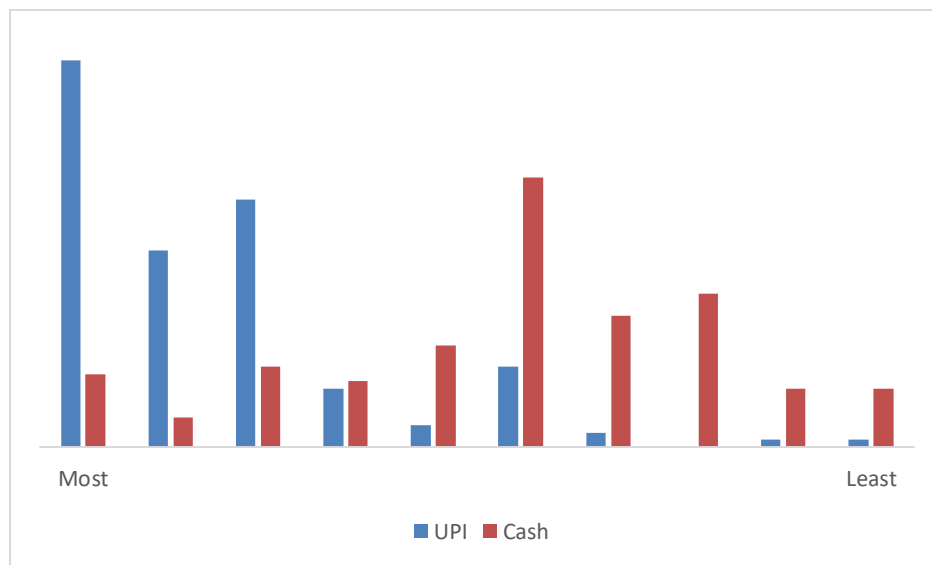


Figure 11 demonstrates the half of the 140 respondents (46.4%) believe they spend more money due to the ease of using UPI. A significant portion (32.1%) were unsure ("Maybe") about whether UPI leads to increased spending, while a smaller group (21.4%) did not think they spend more as a result of using UPI.

**IV.6 Comparative analysis of efficiency of UPI vs Cash transaction**

**Fig12: Comparative preference choice of transaction by UPI and cash from most preferred to least preferred**

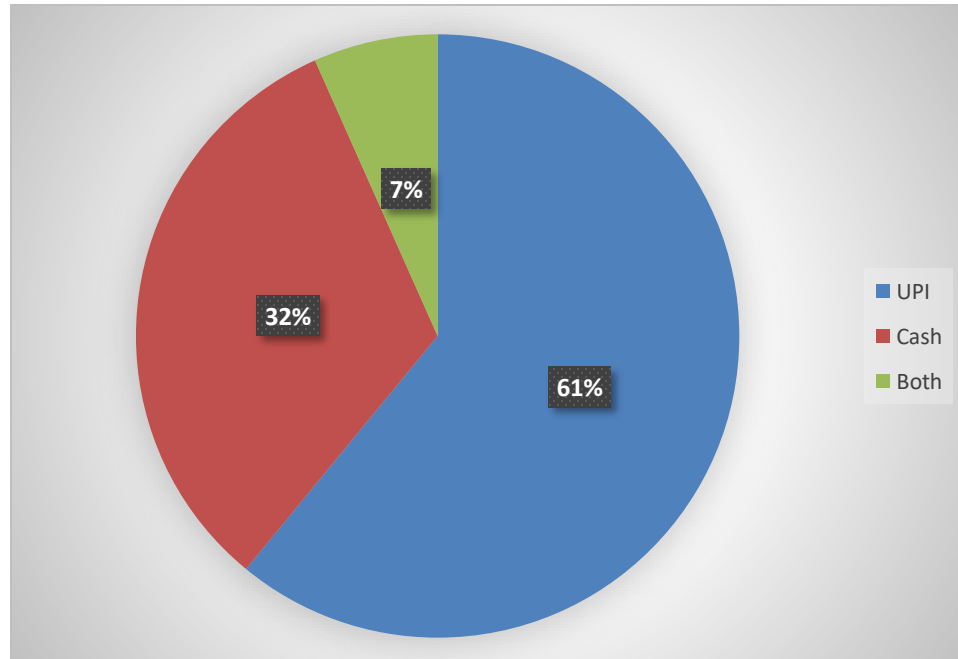


A large majority of the 140 respondents perceive UPI transactions as highly efficient, with the highest number (37.9%) giving it a perfect rating of 10. A significant portion also rated the efficiency as an 8 (24.3%) or a 9 (19.3%), further highlighting the positive perception. Figure 12 shows few respondents rated the efficiency of UPI transactions on the lower end of the scale, indicating general satisfaction with its efficiency.

The perceived efficiency of cash transactions shows a more varied distribution. The highest number of respondents (26.4%) rated the efficiency of cash transactions as a 5, indicating a neutral or moderate perception. There is a noticeable spread across the scale, with significant numbers rating cash efficiency both below and above the midpoint, suggesting diverse experiences and opinions.

An overwhelming majority of the 140 respondents rate the speed of UPI transactions favourably, with 48.6% giving it the highest rating of 5. A substantial portion (40%) also rated the speed as a 4, indicating a generally fast transaction experience. Only a small fraction of respondents rated the speed of UPI transactions as low, suggesting a high level of satisfaction with their quickness.

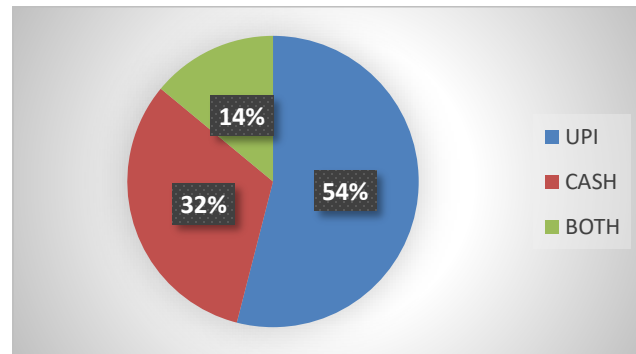
**Fig 13: Figure shows the efficient method of payment perceived by the users**



A significant majority of the 140 respondents (63.6%) find UPI to be the more efficient payment method. Figure 13 shows a notable portion (34.3%) find both UPI and cash equally efficient, and only a small fraction (2.1%) consider cash to be the more efficient option.

#### IV.7 Most Secure payment method as perceived by users

**Fig 14: Most secure method of financial transaction**

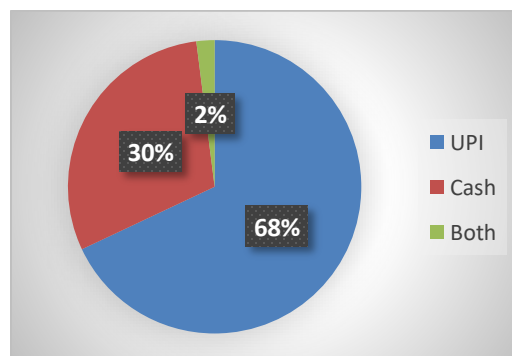


A majority of the 140 respondents (54.3%) perceive UPI as the more secure payment method. Figure 14 shows a considerable portion (31.4%) believe that both UPI and cash offer a similar level of security, while fewer respondents (14.3%) consider cash to be the more secure payment option.

#### IV.8 Future Preferences and Societal Impact

Looking ahead, a strong majority of the 140 respondents (68.6%) indicate a preference for using UPI as their payment method in the future. A notable portion (30%) would prefer to have the option of using both UPI and cash, while only a very small percentage (1.4%) would prefer to use cash exclusively. Finally, a significant majority of the 140 respondents (75.5%) believe that India is moving towards a cashless society with the increasing adoption of UPI. A notable portion (20.9%) were uncertain ("Maybe") about this transition, and only a small percentage (3.6%) do not think India is moving towards a cashless society despite UPI adoption.

**Fig 15: Preferred mode of Payment UPI or cash and participants views on India moving to cashless society with UPI adoption**



## **V Discussion**

The result of the study indicates a strong preference for UPI over cash among the respondents, driven by its convenience, speed, and perceived security. While cash is still used, particularly for smaller transactions and in situations with limited digital connectivity, UPI is increasingly favoured for its convenience and speed for daily transactions, such as grocery shopping, bill payments, and peer-to-peer transfers. It addresses key pain points of efficiency for the tech-savvy salaried professionals (50% of your respondents) and students (24.3%) as demographics are generally comfortable with technology.

The imbalance in gender distribution (77% male, 19.7% female) is a critical finding, strongly suggesting gaps in financial literacy among women and lack of women empowerment. This can stem from socio-cultural norms and lower access to smartphones. Similarly, the lower representation of older age groups (50-60 and 60+) indicates a strong belief in traditional methodology and not adept at technological changes.

Finally, the most common behaviour concern which has come up in the study is that participants feel their expenses have increased due to UPI's ease of use. The effortless nature of digital payments is leading to less conscious spending compared to the experience of handing over physical cash.

Several key challenges have emerged in this study and the most prominent is bridging the digital gap and ensuring true financial inclusion for underserved segments. Another crucial challenge is ensuring security and combating cyber fraud. While UPI is perceived as secure, the "occasional" and "frequent" difficulties reported by users could depict technical glitches, transaction failures, or even gets trapped to scams. Continuous user education on safe UPI practices and robust grievance redressal mechanisms is important to maintain trust.

## **VI Conclusion**

The Unified Payments Interface (UPI) has clearly emerged as the preferred mode of payment for a majority of users, driven by its convenience, speed, and security. The survey findings indicate widespread daily use of UPI for transactions such as grocery shopping, bill payments, and peer-to-peer transfers, with most respondents reporting few difficulties. While cash is still used in specific scenarios—particularly where digital infrastructure is limited—UPI is rapidly becoming the norm, influencing consumer behaviour and even increasing spending for some users.

Beyond user preference, UPI has played a transformative role in India's digital financial ecosystem by expanding access to formal financial services and fostering greater financial inclusion. Its seamless integration with multiple banks and support for diverse transactions has

bridged gaps between urban and rural users. However, challenges such as cybersecurity risks, infrastructural barriers, and the digital divide persist. Overcoming these hurdles will require coordinated efforts in enhancing digital infrastructure, user education, and policy regulation. As India steadily progresses toward a cashless economy, UPI stands at the forefront of this digital shift. Continued innovation, coupled with inclusive and secure implementation, will be key to ensuring that the benefits of this transformation are both far-reaching and equitable.

Future research should explore long-term behavioural impacts and the inclusivity of digital payments across socio-economic groups to ensure that digital growth translates into meaningful economic empowerment for all.

***Ethics note: In the study, participants detail was kept anonymous. The survey was conducted online and participants have participated voluntarily.***

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