

CASH TO DIGITAL: UPI ADOPTION AMONG MICRO BUSINESSES IN MYSORE

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ABSTRACT

This research investigates the implementation and effects of the Unified Payments Interface (UPI) among micro businesses in Mysore, India, using a sample size of 214, with a focus on sectors such as street vendors, stationery shops, Kirana stores, and auto services. The study utilizes primary data gathered from surveys and focus group discussions, complemented by secondary literature. It employs descriptive and analytical methods, including Chi-Square tests, to evaluate the relationship between demographic factors and UPI usage. The research indicates significant UPI adoption among dynamic micro-level businesses, including fast food vendors and stationery shops. However, it also highlights challenges such as security issues, unreliable networks, and barriers related to digital literacy. The primary factors influencing adoption are customer demand and convenience, while perceived risks and transaction failures act as obstacles. Statistical analysis revealed no significant correlation between demographics such as age or gender and UPI usage, suggesting that the type of business is the primary factor affecting adoption. The study concludes that UPI enhances operations and financial management for small businesses; however, targeted actions—such as improved security, digital literacy initiatives, and better technological support—are essential to fully realize UPI's potential in promoting financial inclusion. The findings provide important insights for policymakers, financial institutions, and technology providers to assist small businesses in embracing digital payments, thereby fostering economic growth in Mysore's micro-business sector.

Keywords: *Unified Payments Interface (UPI), Digital Payments Adoption, Micro Businesses, Technology Adoption, UPI Adoption, Vendor Perceptions, UPI Integration.*

Introduction

In recent years, India has experienced a notable transformation in the conduct of financial transactions, primarily driven by the digital revolution. The widespread adoption of digital payment platforms has propelled this transformation, with the Unified Payments Interface (UPI) at the forefront. Initiated in 2016 by the National Payments Corporation of India (NPCI), UPI has transformed the financial landscape by facilitating instant and secure money transfers between bank accounts through mobile devices. This system eliminates the reliance on conventional banking methods, providing a smooth and intuitive experience that has gained acceptance across multiple sectors, especially within micro and small enterprises.

Mysore, a city known for its rich cultural heritage and vibrant economic landscape, provides a distinctive setting for examining the integration and impact of UPI within its microeconomic sectors. The economy of the city is defined by a diverse array of small businesses that play a crucial role in its economic structure. The list encompasses street vendors, sellers of fruits and vegetables, stationery and photocopy service providers, Kirana stores, food stalls, pan shops, flower vendors, tender coconut and juice vendors,

general stores, along with operators of auto and cab services. These enterprises not only meet the daily needs of the city's population but also serve as essential income sources for many individuals.

The research conducted seeks to explore the usage patterns and trends of UPI among micro-businesses in Mysore. This study aims to explore how these vendors have integrated UPI into their daily operations, the benefits they derive, and the challenges they encounter while employing this digital payment method. Furthermore, the study examines the influence of UPI on financial management practices, encompassing income monitoring, expense tracking, and customer engagement.

This study's findings will shed light on the degree to which UPI has penetrated the micro-business sector in Mysore, highlighting the primary factors that contribute to its adoption and the challenges that hinder its wider use. This research provides a thorough analysis of UPI's role in this sector, aiming to deliver valuable insights that can inform the development of strategies to improve the effectiveness of digital payment solutions for small businesses. The insights presented will be highly beneficial for policymakers, financial institutions, and technology providers aiming to optimize UPI's potential in fostering financial inclusion and driving economic growth in urban regions such as Mysore.

Micro businesses in Mysore are an essential component of the city's economic landscape, significantly contributing to the provision of goods, services, and employment for a large segment of the population. Small businesses, typically defined by limited capital investment and a modest workforce, play a crucial role in fulfilling the daily needs of Mysore's residents while bolstering the local economy.

Microbusinesses in Mysore offer a diverse selection of products, including snacks, beverages, and essential household items. The vendors operate in high-traffic markets adjacent to tourist attractions and within residential neighbourhoods, ensuring easy access to essential products. Their businesses demonstrate significant adaptability and depend substantially on direct customer interaction, establishing them as a fundamental component of the informal economy.

Here's a brief description of some important micro business segments in Mysore:

1. Fruit and Vegetable Sellers

These vendors usually function in local markets or from mobile carts, providing fresh produce to the households of the city. Due to the perishable nature of their goods, these sellers frequently encounter challenges associated with supply chain management and the necessity for rapid turnover. Their business operates on a daily demand basis, utilizing UPI and other digital payment methods will enhance the transaction efficiency and manage their cash flow effectively.

2. Stationery and photocopy Shops

Stationery and photocopy shops are typically located in proximity to educational institutions, offices, and residential neighbourhoods. These enterprises offer vital services including photocopying, printing, and the retail of educational and office supplies. Although modest in size, these shops play a crucial role for students, professionals, and local residents, and they are reaping the rewards of the growing trend towards digital payments for swift and efficient transactions.

3. Provisional Stores (Kirana Stores)

Kirana stores are small neighbourhood grocery shops that provide a diverse selection of daily essentials, encompassing food items, household goods, and toiletries. These stores play a crucial role in the community, providing tailored service and frequently operating on a credit basis with loyal customers.

The implementation of UPI in these stores has streamlined payment management for both owners and customers, particularly in urban areas such as Mysore.

4. Chat Vendors and Fast-Food Outlets

The street food culture in Mysore is dynamic, featuring a variety of chat vendors and fast-food stalls that provide quick and economical meal options. These vendors serve a varied clientele, ranging from students to office professionals, and are generally located in high traffic areas. Their operations are dynamic, positioning UPI as an optimal payment solution for swift and seamless transactions.

5. Pan Shops

Pan shops are compact kiosks that offer betel leaves (pan), tobacco products, and a variety of small items such as candies and cigarettes. These shops function as social centers within the community. Even though their transactions tend to be small in value, the rise of UPI has allowed these vendors to serve customers who favor cashless payments.

6. Flower Vendors

Flower vendors, typically located near temples, markets, and bustling intersections, offer fresh flowers and garlands that play a crucial role in the religious and cultural practices of Mysore. These vendors function with narrow profit margins and depend on daily sales for their operations. Digital payments are increasingly being adopted by these sellers, providing a secure and convenient method for managing transactions.

7. Tender Coconut and Juice Shops

These vendors provide a selection of revitalizing beverages, including tender coconut water and fresh juices, especially during warm weather conditions. Often located in outdoor settings, these businesses are characterized by their seasonal nature yet serve as an essential source of income for their proprietors. UPI has emerged as a practical payment solution, particularly for customers who may not have cash on hand.

8. General Stores

General stores in Mysore are compact retail establishments providing a diverse range of products, such as groceries, personal care items, and household necessities. These stores play a crucial role in the community, offering convenient access to essential everyday items. As digital payments continue to gain traction, general stores are progressively integrating UPI to enable faster and more efficient transactions.

9. Auto and Cab Services

Auto-rickshaws and cabs serve as a prevalent mode of transportation in Mysore, accommodating the needs of both residents and visitors. The operators of these services are frequently independent or affiliated with small fleets. The incorporation of UPI into their operations has optimized fare collection, minimized the necessity for cash handling, and improved the overall customer experience.

Significance and Relevance of the Research

The swift growth of digital payment systems in India has brought about considerable transformations across multiple sectors, particularly within the micro business segments in Mysore. This research holds significant importance for various reasons. Micro businesses, such as fruit and vegetable vendors,

stationery shops, provisional stores, chat vendors, and others, are essential to the local economy of Mysore. These enterprises are typically defined by their limited size and significant engagement with customers. Gaining insights into their experiences with digital payments can illuminate the effects of these systems on daily operations, efficiency, and customer engagement.

Secondly, advancements in technology, the rise in smartphone usage, and government policies promoting cashless transactions are driving the shift towards digital transactions. This research work seeks to examine the ways in which micro business owners and vendors are managing this transition, highlighting the challenges encountered in the adoption of digital payment methods.

Additionally, understanding the adoption and challenges related to digital payments can assist policymakers, financial institutions, and technology providers in developing focused interventions. By addressing issues such as infrastructure limitations, security concerns, and transaction costs, the effectiveness of digital payment systems can be enhanced, facilitating a smoother transition for these businesses.

Finally, analysing the effects of digital payments on customer satisfaction and operational efficiency offers important insights for businesses aiming to improve their payment processes. This expertise can result in enhanced financial management, decreased transaction costs, and superior customer service.

Objectives of the Study

1. Analyse the perceptions of digital payments by assessing microbusiness owners' and customers' awareness, acceptance, and overall attitudes toward various digital payment methods.
2. Identify adoption challenges to pinpoint and analyse the specific difficulties and barriers that micro- businesses face when integrating digital payment systems.
3. Assess the Impact on Business Operations to gain a better understanding of how digital payments affect micro businesses day-to-day operations and financial management.
4. Examine usage patterns to understand how various segments of micro businesses engage with digital payments.
5. Develop actionable recommendations for policymakers, financial institutions, and technology providers.

Research Methodology

This study employs a descriptive and analytical methodology to assess the adoption of digital payments among micro businesses in Mysore.

Secondary research: Derived from pertinent literature, industry reports, and government publications to provide context for the findings.

Review of Literature

Various studies associated to the perspective of street vendors towards digital payments were analyzed and the summary has been given below.

India's 60 million MSMEs are increasingly using digital payments, not just for transactions but also for credit, insurance, and other financial services. In this research author Shilpa Bhatia delves into Haridwar entrepreneurs' perceptions of mobile payment systems for business operations, using surveys and statistical analysis to understand their experiences and potential roadblocks. (Shilpa Bhatia et al., 2020) [1]. Despite government efforts, India's transition to a cashless economy faces hurdles, particularly among small retailers in Bareilly. Though aware of digital options, they perceive cash as easier and fear financial losses from digital transactions, limiting their active usage. (Chattopadhyay et al., 2018) [2].

The study examines critical factors influencing digital payment adoption by micro-entrepreneurs in India. Dr. D.R. Jalwani suggests that individuals with qualifications and technical skills, particularly those proficient in internet use, are more likely to embrace digital payments. Regions with higher education levels and increased smartphone usage exhibit greater adoption of digital payment platforms. (Dr. D.R. Jalwani et al., 2022) [3].

Mr. Sunil Bhatia, studied and analysed the impact of NPCI's UPI (Unified Payments Interface) on small businesses in India, concluding that these digital payment methods, launched under Modi's government, are driving the country towards a cashless economy. The research, based on surveys with 60 vendors in Delhi, highlights the positive impact of UPI adoption by small businesses. (Mr. Sunil Bhatia et al., 2022) [4]. Demonetization in India has spurred increased acceptance of digital payments, driven by government reforms. Dr. Kratika Neema reviews the UPI (Unified Payment Interface) method, detailing its architecture, technologies, operations, parties involved, benefits, and challenges. It also compares various UPI apps with other digital payment methods. (Dr. Kratika Neema et al., 2018) [5].

Radhika Basavaraj Kakade conducted the research where following demonetization, India's cash shortage fuelled the creation of UPI, a mobile platform enabling instant bank transfers using virtual IDs or linked accounts. Unlike traditional methods, UPI operates 24/7, simplifying and speeding up transactions with the convenience of texting. (Radhika Basavaraj Kakade et al., 2017) [6]. In this study, Dr. M. Malla Reddy explores how street vendors in Sircilla, India perceives digital payments. While smartphones and government initiatives push adoption, vendors prefer mobile wallets but cite awareness, security, and technical issues as concerns. They appreciate convenience and security but face network problems and delayed transactions. Cash remains dominant, highlighting the need for targeted interventions to address challenges and promote wider adoption, empowering vendors and boosting financial inclusion. (Dr. M. Malla Reddy et al., 2023) [7], As India pushes towards a cashless economy, researchers investigated the adoption of BHIM, a government-backed mobile payment app, using the Bass diffusion model. (P. K. Kapur et al., 2019) [8].

Authors in this study explored factors influencing street vendors' adoption of digital payment apps in India. It found vendors value convenience and price, while digital literacy is key. Privacy and security weren't major concerns, though social influence surprisingly deterred adoption (Shivani Prasad et al., 2023) [9].

The authors examine the awareness and impact of digital payments on street vendors' business performance in Odisha, India. This study fills the gap by analysing data from 390 vendors, revealing a significant association between their digital payment awareness and business performance. Notably, knowledge about mobile features, QR codes, and user experience are key factors influencing awareness and success. (Shradhanjali Panda, et al., 2022) [10]. Authors highlights the qualitative study on street vendors' adoption of mobile wallets and digital transactions. Key themes include adoption processes,

mobile payment practices, digital literacy gaps, and concerns over security and usability. Market-linked solutions address some issues but don't mitigate skill gaps. (Ikhlaq UI Rehman Mir et al.,2023) [11].

UPI's success is evident in the high transaction volume and increasing reach across the country. While challenges like smartphone affordability exist, initiatives like BHIM Aadhaar Pay and 123PAY address them, aiming for financial inclusion. Author Aakanksha Ahire predicts continued growth, with UPI transactions potentially reaching \$1 billion per day in the coming years. (Aakanksha Ahire et al., 2022) [12] UPI revolutionized Indian transactions, boosting cashless economy. Despite 85% success rate, transaction failures (15 million in Mar-Apr 2019, avg \$25) raise concerns. Server issues and connectivity are major challenges. Cloud migration, data centre location optimization, and real-time analytics are proposed solutions. Customer ownership in bill payments and recharges is debated between banks and platforms. (Kumar PS et al., 2019) [13].

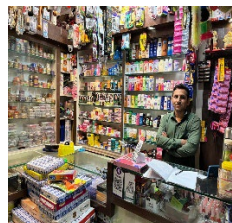
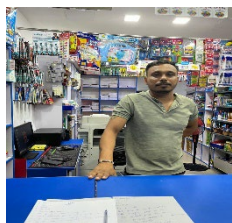
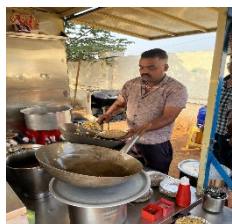
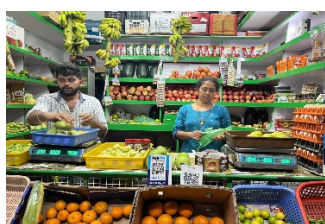
This study analyses authors Dr. K. Sivasubramanian & Dr. G. Rajendran highlights the impact of digital payments on small and petty traders in Bangalore. The trends indicate financial inclusion and a significant shift in payment methods, potentially leading to further investment and economic growth for small businesses. (Dr. K. Sivasubramanian, et al., 2021) [14]. The authors delve into digital payment adoption among street vendors, examining factors like financial literacy, regulations, and technological barriers. They shed light on the importance of facilitating technology uptake among the Pune hawkers. (Dr. Sucheta Kanchi, et al., 2023) [15].

Gap Analysis

Previous research on UPI adoption among micro-businesses often emphasizes general trends, security issues, and limitations in digital literacy, yet it falls short in providing sector-specific insights and a thorough analysis of operational implications. The impact of UPI adoption on various types of micro businesses, including fruit sellers and auto services, has received minimal attention, along with the significance of infrastructure challenges such as network reliability. Moreover, the impact of UPI on profitability, daily business operations, and the implementation of trust models across various industries remains uncertain. This study addresses existing gaps through a comprehensive, sector-focused analysis of the impact of UPI on micro-businesses in Mysore, offering valuable insights into operational enhancements, financial management, and business growth.

Primary research

- 1. Research Design:** A survey methodology employed to gather insights on current usage and perceptions of digital payments.
- 2. Sampling Technique:** A simple random sampling method was employed to select 150 micro businesses from a variety of categories, such as fruits and vegetables, stationery, kirana stores, chat vendors, pan shops, flower vendors, tender coconut and juice shops, general stores, and auto and cab services.
- 3. Data Collection:** The primary data was gathered using a variety of methods, including structured questionnaires administered through in-person surveys, Google Forms, and focus group discussions. These approaches focused on understanding user experiences and challenges related to digital payments.
- 4. Hypothesis Testing:** This study employs hypothesis testing to explore the relationships and differences related to digital payment adoption among micro businesses in Mysore.



Hypothesis Testing using R

1. Gender vs. Reason for Opting UPI: There might be an association between the vendor's gender and the reason they chose a particular UPI service.
2. Business Type vs. UPI Usage Prompt: The type of business may influence what prompted the vendor to start using UPI.
3. Age vs. Reasons for Opting UPI: The age of the vendor may influence their reasons for choosing a particular UPI service.

Hypothesis	Chi-Square Statistic	Degrees of Freedom	p-value
1. Gender vs. Reason for Opting UPI	6.8379	4	0.1447
2. Business Type vs. UPI Usage Prompt	74.754	16	1.446e-09
3. Age vs. Reasons for Opting UPI	132.63	176	0.9938

Summary of Results

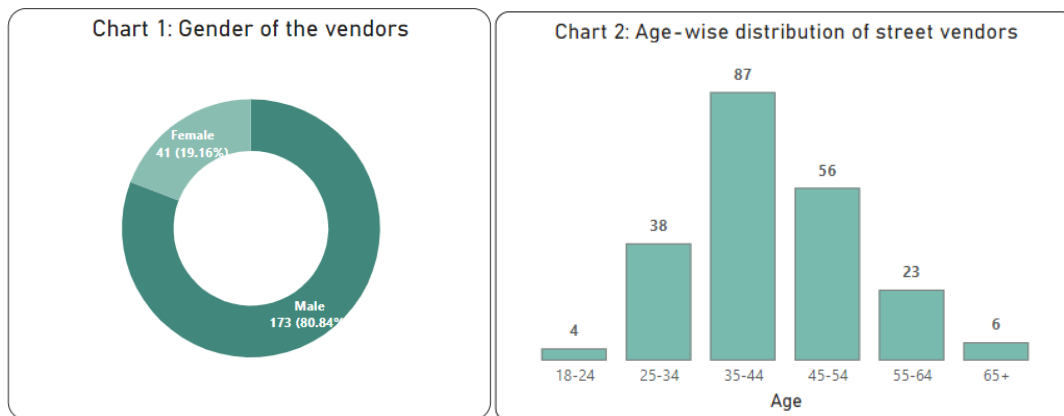
The Chi-Square tests conducted in the research examined associations between different demographic and business factors with UPI adoption reasons.

- Gender vs. Reason for Opting UPI: The test revealed no significant association, indicating that the choice of UPI is independent of gender.

- Business Type vs. UPI Usage Prompt: A significant association was found, suggesting that the type of business influences what prompted the use of UPI.
- Age vs. Reasons for Opting UPI: Similarly to gender, no significant association was found between age and reasons for choosing a UPI service.

Key Findings and Insights from Primary Research

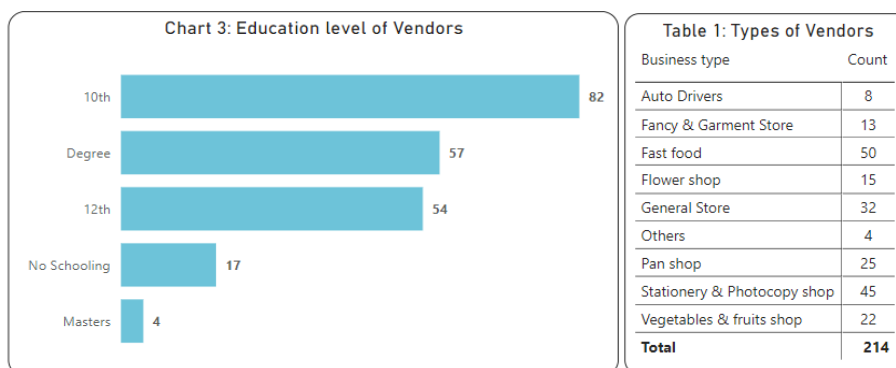
This section presents the findings gathered through personal interviews conducted with micro businesses in the Mysore city region. The results reflect the unique challenges and opportunities faced by these businesses, offering a localized perspective on business dynamics. The following graphs illustrate the data collected from these interviews.



Source: Primary Data

Source: Primary Data

Chart 1 illustrates the gender distribution of street vendors, showing that a significant majority (80.84%) are male (173 vendors), while only 19.16% are female (41 vendors), whereas Chart 2 presents the age distribution of street vendors, with the highest concentration in the 35-44 age group (87 vendors). The second-largest group is aged 45-54 (56 vendors), followed by 25-34 (38 vendors), 55-64 (23 vendors), 65+ (6 vendors), and 18-24 (4 vendors).



Source: Primary Data

Source: Primary Data

The chart shows that most of the 214 street vendors have completed up to 10th grade (82 vendors), followed by those with a degree (57 vendors) and 12th grade education (54 vendors). Among them, the largest business types are fast food (50 vendors) and stationery & photocopying services (45 vendors),

while the least common are auto drivers (8 vendors) and miscellaneous "Others" (4 vendors). Only 17 vendors have no schooling, and 4 have a master's degree.

Business type	Change problem solved	Customer Demand	Eassy access to bank
Fast food	10	31	9
Stationery & Photocopy shop	2	29	14
General Store	3	16	13
Pan shop		25	
Vegetables & fruits shop	4	2	16
Flower shop	2	3	10
Fancy & Garment Store		13	
Auto Drivers		7	1
Others	1	2	1
Total	22	128	64

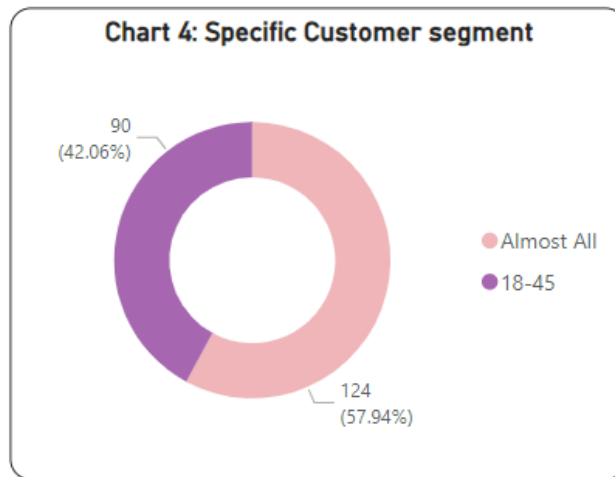
Source: Primary Data

Table 2 shows the factors influencing 214 vendors across various business types. Customer demand is the most significant reason, with 128 vendors citing it, especially in pan shops (25 vendors) and fast food (31 vendors). Easier access to banks motivated 64 vendors, particularly in the vegetables & fruits shop category (16 vendors). Solving the problem of giving change prompted 22 vendors, most notably in fast food (10 vendors).

Particulars	Bharath Pay	Google Pay	Paytm	Phone pay	Respective bank Application
Approached 1st	22	17	54	46	1
Cashback benefit	8	6			
Loan benefit	3	2		6	
Quality Service	4	11	13	17	
Respective Bank Customer					4
Total	37	36	67	69	5

Source: Primary Data

The table 3 presents the reasons vendors use different digital payment platforms. "Phone Pay" is the most popular, primarily because vendors were approached first (46) or received quality service (17). "Paytm" is also popular, with the majority choosing it because they were approached first (54). Cashback benefits are a moderate influence, with the highest numbers seen in "Bharath Pay" and "Paytm." Respective bank applications are the least used, mostly by bank customers.



Source: Primary Data

The chart shows that 57.94% of UPI users fall into the "Almost All" category, indicating a broad range of age groups. Specifically, 42.06% of UPI users are in the 18-45 age group. This suggests that a significant portion of the UPI user base is younger, while an estimated 40-45% of the population aged 45+ may still prefer traditional methods for transaction.

Table 4: Customers using UPI while transacting with Vendors

Business type	Average %Of customers using UPI
Auto Drivers	22.50%
Fancy & Garment Store	47.69%
Fast food	65.60%
Flower shop	36.67%
General Store	52.50%
Others	57.50%
Pan shop	54.80%
Stationery & Photocopy shop	61.11%
Vegetables & fruits shop	50.91%
Total	55.05%

Source: Primary Data

The table displays the average percentage of customers using UPI across various business types. The highest UPI usage is seen in the "Fast Food" sector (65.60%), followed by "Stationery & Photocopying" (61.11%) and "Others" (57.50%). "Auto Drivers" have the lowest UPI adoption at 22.50%. On average, 55.05% of customers use UPI when transacting with vendors across these business types, indicating a growing preference for digital payments, especially in certain sectors.

Table 5 : Impact of UPI on Vendors

Business type	No frequent visit to Bank	No Impact on Profit	Smooth Transaction	All of these
Fast food	3	4	30	13
Stationary and Photocopy	1	12	21	11
General Store	0	9	17	6
Pan shop	1	17	6	1
Vegetables & fruits shop	0	2	20	0
Flower shop	0	2	12	1
Fancy & Garment Store	1	5	5	2
Auto Drivers	0	7	1	0
Others	0	1	3	0
Total	6	59	115	34

Source: Primary Data

Table 5 presents data on different business types and their experiences with banking and transactions. It shows that most businesses, particularly fast-food establishments, value smooth transactions the most. Interestingly, stationery & photocopying shops report the highest "NO Impact on Profit" despite frequent bank visits. General stores and vegetables & fruits shops also prioritize smooth transactions. Pan shops stand out with the highest "NO Impact on Profit" score. Overall, smooth transactions seem to be the most important factor across all business types, with 115 total responses, followed by "NO Impact on Profit" with 59 responses. The data suggests that different business types have varying needs and priorities when it comes to banking and financial transactions.

Table 6: Method/tools used by vendors to record the UPI transactions

Business type	Summary Will be Viewed on the Application	Will use Passbook/Visit Bank for transaction summary	Total
Auto Drivers	1	7	8
Fancy & Garment Store	9	4	13
Fast food	50		50
Flower shop	12	3	15
General Store	31	1	32
Others	4		4
Pan shop	24	1	25
Stationery & Photocopy shop	42	3	45
Vegetables & fruits shop	20	2	22
Total	193	21	214

Source: Primary Data

Table 6 outlines the methods or tools used by different types of vendors to record UPI transactions. The vast majority of vendors (193 out of 214) prefer to view transaction summaries on an application, indicating a strong preference for digital tools. Fast food businesses show the highest adoption of application-based summary viewing with 50 vendors, followed closely by Stationery & photocopying shops (42) and General Stores (31). In contrast, only 21 vendors across all categories opt to use passbooks or visit banks for transaction summaries, with Auto Drivers being the most likely to use this traditional method (7 out of 8). The data suggests a clear trend towards digital transaction recording methods among vendors, particularly in fast-paced retail environments.

Trust Model

The Trust Model is an informal yet common approach among Mysore's micro-businesses using UPI. It allows vendors to complete sales before confirming payment, assuming successful transactions while accepting some risk of failure or fraud. This model helps streamline operations, particularly in busy environments like food stalls, though it poses challenges such as handling network issues and preventing fraud. Despite these risks, vendors rely on trust and customer relationships to maintain smooth transactions, balancing efficiency with potential security concerns. The model underscores the importance of customer experience while addressing the complexities of digital payment systems

Business type Updated	NO	YES	Total
Auto Drivers	8		8
Fancy & Garment Store	13		13
Fast food	1	49	50
Flower shop		15	15
General Store	20	12	32
Others	2	2	4
Pan shop	21	4	25
Stationery & Photocopy shop	28	17	45
Vegetables & fruits shop		22	22
Total	93	121	214

Source: Primary data

Table 7 presents data on the adoption of a Trust Model for UPI transactions across various business types. Overall, more businesses have adopted the Trust Model (121) than those that haven't (93). Fast food businesses show the highest adoption rate, with 49 out of 50 using the Trust Model. Conversely, Auto Drivers, Fancy & Garment Stores, and Vegetables & fruits shops show no adoption at all. General Stores, Pan shops, and Stationery & photocopying businesses have mixed adoption rates, with more businesses not using the Trust Model. The data suggests that the Trust Model's adoption varies significantly by business type, with food-related businesses being more likely to embrace it, while traditional retail and service sectors are more hesitant. This could indicate different levels of comfort with digital payment systems or varying customer preferences across business types.

Non-UPI users

Non-UPI users are those who have not adopted the Unified Payments Interface for digital transactions, often due to barriers like security concerns, lack of digital literacy, or limited access to smartphones and the internet. Understanding these reasons is key to making digital payments more inclusive and accessible for everyone.

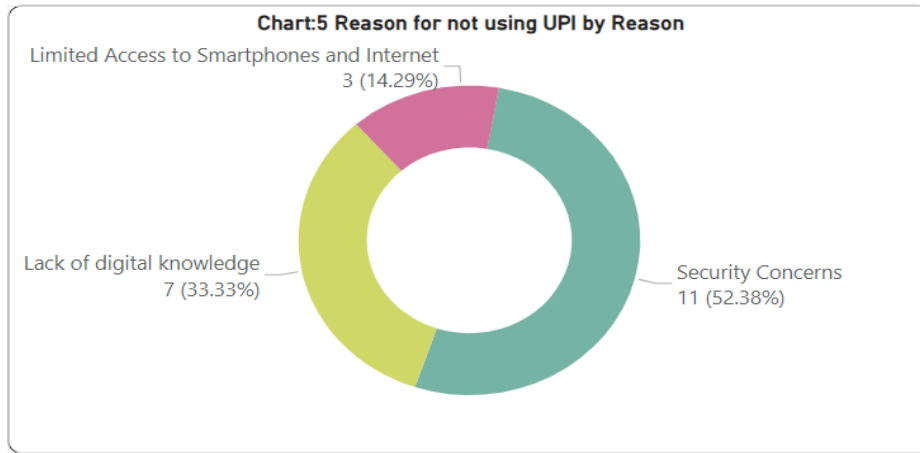


Table: 8 Age-wise distribution

Age	Count
36-43	2
44-50	5
50-55	6
55+	8
Total	21

Chart 5 highlights that the most common reasons for not using UPI are security concerns (52.38%), lack of digital knowledge (33.33%), and limited access to smartphones and the internet (14.29%).

Table 8 shows the distribution of non-users by age group, with the highest concentration in the 55+ age bracket, followed by those aged 50-55. This suggests that older individuals are more likely to encounter challenges in adopting UPI, whether due to security fears, digital literacy issues, or limited access to necessary technology

Table:9 Age-wise reasons of Non-UPI users

Age	Lack of digital knowledge	Limited Access to Smartphones and Internet	Security Concerns	Total
36-43			2	2
44-50			5	5
50-55	2	1	3	6
55+	5	2	1	8

Source: Primary Data

Table 9 shows that older individuals, particularly those aged 55+, are more likely to cite a lack of digital knowledge and limited access to smartphones and the internet as barriers. Security concerns are most prominent in the 44-50 age group. The distribution suggests that different age groups face distinct challenges in adopting UPI, with older age groups being more affected by digital literacy and access issues.

Points of Parity and Differentiation in Vendor Payment Methods

We created the PoP and PoD table to compare common benefits and unique differences in UPI adoption across various business types. This helps identify both shared advantages and specific challenges vendors face, informing targeted strategies for improving UPI usage.

Vendor Category	Points of Parity (PoP)	Points of Differentiation (PoD)
Auto Drivers	<ul style="list-style-type: none"> - UPI simplifies fare collection. - Reduces the need for carrying cash. - Common across different transport services 	<ul style="list-style-type: none"> - Least UPI adoption (22.50%). - More traditional payment methods still preferred. - Trust model not adopted, unlike food-related businesses.
Fancy & Garment Stores	<ul style="list-style-type: none"> - UPI offers fast and secure transactions. - Benefits from immediate payment confirmation. 	<ul style="list-style-type: none"> - More cautious about adopting UPI Trust model. - Customer engagement with UPI may be lower compared to sectors like fast food.
Fast Food	<ul style="list-style-type: none"> - High UPI adoption (65.60%). - Facilitates quick transactions in fast-paced environments. - Commonly used for small, frequent transactions. 	<ul style="list-style-type: none"> - Highest adoption of the Trust model for UPI payments. - Significant reliance on sound boxes for payment confirmations. - Immediate processing due to fast service.
Flower Shop	<ul style="list-style-type: none"> - UPI aids in handling small transactions effectively. - Offers secure payment options for daily sales. 	<ul style="list-style-type: none"> - Transaction size often lower; UPI streamlines low-value sales. - Digital payment adoption driven by proximity to cultural/religious spots.
General Store	<ul style="list-style-type: none"> - UPI widely used for daily necessities. - Ensures quick and efficient transactions. - Reduces cash handling risks. 	<ul style="list-style-type: none"> - Adoption of UPI Trust model varies. - Digital transaction recording through apps prevalent (31 vendors).
Pan Shop	<ul style="list-style-type: none"> - UPI enables small value transactions. - Benefits from seamless payment handling. 	<ul style="list-style-type: none"> - High dependence on customer demand for UPI adoption. - Mixed adoption of UPI Trust model. - Often seen as social hubs, influencing the customer payment preference.
Stationery & photocopy	<ul style="list-style-type: none"> - UPI integration for small transactions. - Common among service providers near educational institutions. 	<ul style="list-style-type: none"> - High UPI adoption (61.11%). - Strong preference for app-based transaction summaries. - Less likely to adopt Trust model compared to fast food.
Vegetables & Fruit Shop	<ul style="list-style-type: none"> - UPI helps in handling perishable goods transactions. - Convenient for regular customers. - Reduces the need for exact change. 	<ul style="list-style-type: none"> - More reliance on traditional payment methods alongside UPI. - No adoption of UPI Trust model. - Easier access to banks as a motivating factor for UPI usage.
Others	<ul style="list-style-type: none"> - UPI used across various miscellaneous businesses. - Commonly integrated into daily transactions. 	<ul style="list-style-type: none"> - UPI adoption varies widely based on the type of business. - May include highly specialized or niche sectors where UPI usage is less prevalent.

It provides a detailed comparison of UPI adoption across various vendor. Despite differences in business types, there are several points of parity among vendors. Most businesses, from auto drivers to flower shops, find that UPI simplifies transactions, reduces the need for handling cash, and offers security in payments. UPI enables quick and efficient handling of small transactions, especially in sectors like fast food, general stores, and vegetable shops, where it helps manage frequent sales and provides immediate payment confirmation. In environments with daily sales and small-ticket items, such as flower shops and pan shops, UPI is useful in streamlining operations and making digital payments more accessible.

However, the points of differentiation reveal unique adoption patterns across these vendors. For instance, fast food vendors exhibit the highest UPI adoption rate (65.60%) and heavily rely on sound boxes for payment confirmation, whereas auto drivers show the least UPI adoption (22.50%), still favouring traditional payment methods. The Trust model, which instils customer confidence in UPI transactions, is widely adopted by fast food outlets but is less common among general stores and non-existent in vegetable and fruit shops. Moreover, proximity to cultural landmarks influences digital adoption among flower vendors, while factors like customer preference and social dynamics heavily impact UPI use in pan shops. This variation highlights the tailored approach each vendor category has toward digital payment systems based on their business needs and customer interactions.

Focus Group Discussions: Insights into UPI Adoption and Vendor Challenges

As part of our comprehensive research on the adoption and usage of Unified Payments Interface (UPI) in India, three focus group discussions were conducted to gain deeper insights into customer experiences, perceptions, and challenges related to UPI transactions. The discussion brought together a diverse group of participants, representing different demographics and user profiles, to explore their firsthand experiences and preferences. This qualitative approach enabled us to gather rich, contextual data, complementing the quantitative findings from our broader survey. The following sections provide a visual overview and a detailed summary of the key themes and insights that emerged during the discussion.



Summary of Focus Group Discussion on UPI Transactions and Vendor Challenges

The focus group discussed the challenges vendors face when dealing with UPI (Unified Payments Interface) transactions. A primary concern is the reliance on sound boxes, which notify vendors of incoming payments. However, many vendors either do not have sound boxes or experience issues due to poor internet connectivity. This can lead to situations where vendors are unable to monitor or confirm payments from all customers, especially during peak times when there are numerous transactions.

Another critical issue raised was network reliability. Participants highlighted that network failures often disrupt UPI payments, leaving both vendors and customers in difficult situations. In such cases, alternatives like asking friends or nearby individuals to make the payment on behalf of the customer were

discussed. This workaround is seen as a temporary fix but does not address the underlying problem of unreliable network connections.

Security concerns were also a prominent topic during the discussion. Vendors expressed apprehension about potential frauds, such as customers showing fake payment screenshots or tampering with UPI transaction records. While trust is an essential factor, vendors believe there needs to be a stronger emphasis on security measures to protect against such fraudulent activities. This could include better verification systems and more robust customer identification during transactions.

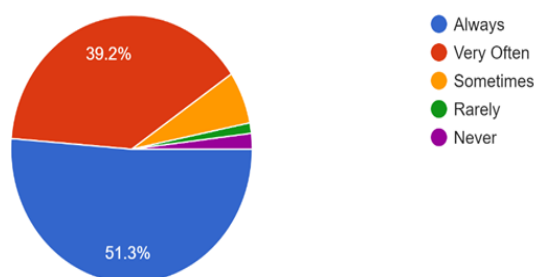
The discussion also emphasized the role of trust between vendors and customers. It was noted that in instances where UPI payments cannot be processed immediately due to technical issues, vendors might allow trusted customers to pay later. This trust-based approach is crucial for maintaining customer relationships and ensuring business continuity, especially in environments where technological limitations are common.

Overall, the focus group underscored the need for reliable technology and robust payment infrastructure to support seamless UPI transactions. Trust between vendors and customers remains a key factor in navigating the challenges associated with digital payments

Payment Preferences for Street Vendors: UPI vs. Cash – Insights from an Online Survey.

This section presents the findings from an online Google survey distributed to 175 UPI users, with 158 responses collected. The survey explores the frequency of UPI payments compared to cash when paying street vendors, offering valuable insights into payment behaviour in this segment. The following graphs summarize the results.

How frequently do you pay the street vendors using UPI compared to cash.
158 responses

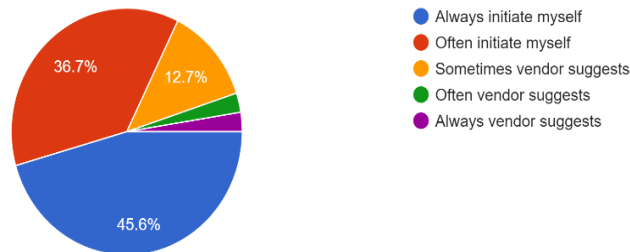


Responses like "Very Often," "Always," etc., indicate the respondents' preference for UPI over cash. High frequencies suggest a strong preference for digital payments.

The survey reveals that over 90% of respondents prefer using UPI to pay street vendors, with 51.3% always using it and 39.2% using it very often. A small portion use it sometimes, rarely, or never. This highlights a strong shift towards digital payments over cash.

Initiation of UPI Payment: This asks whether the respondent typically requests to pay via UPI or waits for the vendor to offer it. Responses such as "Always initiate myself" show the respondent's proactive approach to using UPI.

When purchasing from street vendors, do you usually request to pay via UPI, or do you wait for the vendor to offer UPI as a payment option?
158 responses

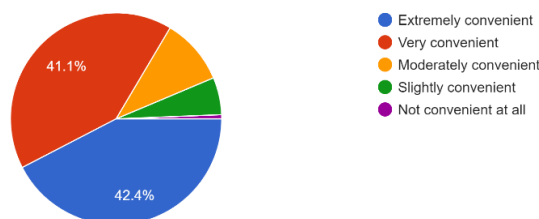


The survey results on initiating UPI payments with street vendors reveal that 82.3% of respondents either always (45.6%) or often (36.7%) initiate the payment themselves, while only 12.7% sometimes rely on vendor suggestions. Vendor-initiated requests are rare, with very few always (purple) or often (green) suggesting UPI. Overall, customers show high proactivity in using UPI for these transactions.

Ease of Using UPI Compared to Cash:

This measures the convenience of using UPI versus cash, with responses ranging from "Extremely convenient" to "Slightly convenient." A higher number of "Extremely convenient" responses indicates strong approval of UPI for ease of use.

Is using UPI easier than using cash when you buy from street vendors?
158 responses

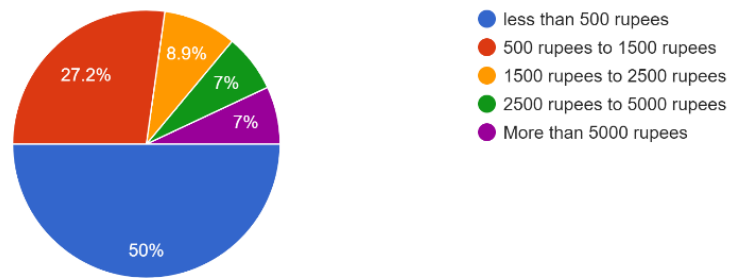


The survey results on UPI convenience show that 83.5% of respondents find it either extremely (42.4%) or very convenient (41.1%) for street vendor purchases. Only a small percentage see UPI as moderately, slightly, or not convenient at all. Overall, there is a strong positive sentiment towards UPI's convenience compared to cash.

Estimated Monthly Spending on Street Vendors Using UPI:

Responses categorize spending amounts, providing insight into the economic behavior of respondents when using UPI with street vendors.

Is there a minimum or maximum purchase amount that makes you prefer using UPI over cash when paying street vendors?
158 responses

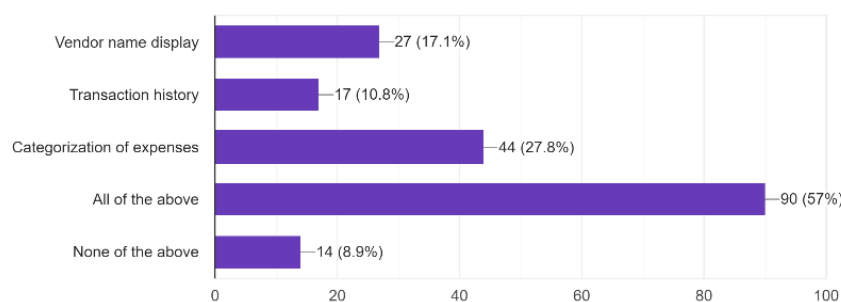


The survey shows that 50% of respondents prefer UPI for transactions under 500 rupees, with 77.2% favoring it for purchases up to 1500 rupees. Preference for UPI declines as transaction amounts increase, but 14% still choose UPI for purchases above 2500 rupees. Overall, UPI is more favored for smaller transactions with street vendors.

Desired Additional Features in UPI Apps:

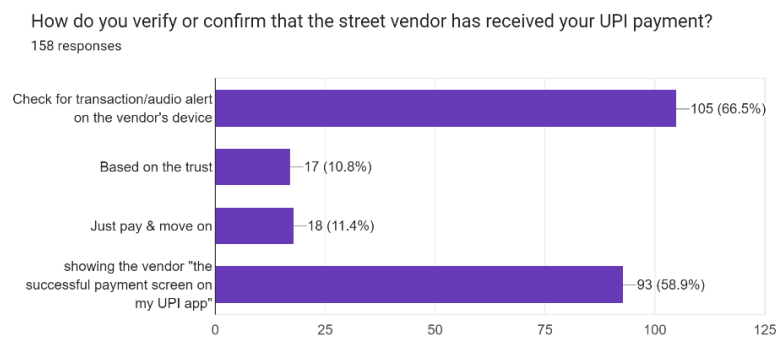
Respondents could choose options like "All of the above," "None of the above," or specific features they wish to see in UPI apps. This question highlights areas where UPI apps could improve to better serve users.

What additional features or functions would you like to see in UPI apps to make them more user-friendly for transactions with street vendors?
158 responses



The survey shows that 57% of respondents want all suggested UPI app features for better user-friendliness with street vendors. Expense categorization (27.8%) is the most desired individual feature, followed by vendor name display (17.1%) and transaction history (10.8%). A small minority (8.9%) are satisfied with current app features.

Verification of UPI Payment: This question checks how users confirm their payment was received by the vendor. Common responses include "Check for transaction/audio alert on the vendor's device," showing reliance on digital confirmations.



The survey reveals that 66.5% of respondents verify UPI payments by checking for alerts on the vendor's device, while 58.9% show the successful payment screen on their own app. Only a small percentage (11.4%) don't verify payments, and 10.8% rely on trust. Most users prefer active verification methods over implicit trust.

Findings from the Study

The study examined the implementation and effects of the Unified Payments Interface (UPI) within micro-businesses in Mysore, emphasizing their experiences, challenges, and advantages.

The key findings are as follows:

Trends in Adoption: The adoption of UPI among diverse micro-business segments, including fruit and vegetable sellers, stationery and photocopy shops, fast food vendors, and general stores, is noteworthy. Fast food vendors and stationery shops demonstrate the greatest UPI usage, reflecting a preference for swift and convenient transactions.

Obstacles encountered: Significant obstacles encompass security issues, inconsistent network connectivity, and problems with the sound boxes utilized for payment confirmations. Vendors frequently encounter transaction delays and trust concerns stemming from counterfeit payment confirmations, which impacts their readiness to fully adopt digital payments.

Effects on Business Functions: The implementation of UPI has enhanced business operations by optimizing cash flow management, minimizing the necessity of handling cash, and enabling faster transactions. Nonetheless, the effect on profit differs, as certain vendors indicate no notable changes in profit even with more streamlined transactions.

Usage Patterns and Demographics: The study revealed that younger age groups (18-45 years) show a greater tendency to utilize UPI, whereas older demographics (55+) exhibit reluctance, primarily due to challenges related to digital literacy and concerns over security. This demographic trend indicates that the adoption of digital payments varies significantly among different age groups.

Trust Model: The trust model, which allows sales to be finalized prior to payment confirmation, is commonly utilized by fast-paced businesses such as fast-food vendors, yet it remains less frequent in

traditional retail and service industries. This reflects the diverse levels of risk tolerance and the dynamics of customer relationships across various business types.

Recommendations:

Improved Security Protocols: In response to vendors' security issues, it is essential to implement more robust verification systems that safeguard against fraudulent actions, including counterfeit payment confirmations. Financial institutions and technology providers must focus on enhancing transaction security to foster vendor trust.

Enhancements to Infrastructure: Improving network reliability and offering superior connectivity, particularly in busy locations, will minimize transaction failures and boost the trust of both vendors and customers in digital payments.

Programs for Digital Literacy: Educational programs aimed at older vendors and customers with limited digital knowledge will effectively address the digital literacy gap. Educating people on the safe use of digital payment platforms can encourage a wider acceptance among reluctant users.

Incentives for Non-Adopters: Providing incentives such as cashback, reduced transaction fees, or special promotions can encourage vendors who are hesitant to adopt UPI. Groups with lower adoption rates, such as auto drivers and older business operators, should receive specific incentives.

Vendor Technological Support: Providing sound boxes or other dependable confirmation devices can help vendors manage transactions more effectively and minimize errors associated with payment confirmations. Making these devices accessible and affordable can boost UPI adoption.

Advancing the Trust Model: Informing vendors about the advantages of the Trust Model, coupled with effective risk management strategies, can foster wider acceptance. This strategy should specifically focus on businesses that depend greatly on repeat clientele, where trust is a crucial factor.

Conclusion

The study indicates that UPI has significantly transformed micro businesses in Mysore, improving operational efficiency and facilitating a more streamlined payment process. Nonetheless, obstacles, including security concerns, connectivity issues, and varying levels of digital literacy, continue to impede its complete potential. By tackling these obstacles through focused interventions and continuous support from technology providers and policymakers, UPI can enhance financial inclusion and stimulate economic growth in Mysore's dynamic micro-business sector. The recommendations seek to establish a framework for improving UPI's integration, thereby benefiting vendors, customers, and the overall economy.

Acknowledgement

We sincerely thank the Director, faculty, staff, and students of SDMIMD for their invaluable support during our focus group survey. Our heartfelt gratitude also goes to the small business vendors in Mysore for generously sharing their insights. We deeply appreciate the unwavering encouragement from our family, friends, and relatives, whose contributions were instrumental to the success of this research. Your time and efforts are greatly valued.

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Annexure

Questionnaires – Vendors

1. How has UPI (Unified Payments Interface) impacted the way you track your income and expenses as a normal vendor?
2. What methods or tools do you use to record your UPI transactions? Are you using paper notes, mobile apps, or any other form of record-keeping?
3. What challenges do you face in maintaining accurate accounting records with UPI? Are there any specific difficulties you encounter while using UPI for financial tracking?
4. Are you utilizing the transaction data from UPI for any financial analysis or making business decisions? If yes, could you provide some examples of how this data has helped you in your business?
5. Have you faced any security or privacy concerns while conducting UPI transactions? How do you address these concerns, if any?
6. Due to network issues, if the customers fail to pay through UPI & if he/she hasn't carried cash with them will you let them pay the next time when they visit or ask them to make arrange for alternative? How have you dealt with situations like these?
7. What if the payment is done through QR code but you don't have the sound machine, how will he verify the payment has been done, do you check the transaction in your mobile, or you just simply believe that the transaction is done (The trust model)
8. How has UPI impacted on your average order value or transaction frequency / Income percentage?

Questionnaires – non-UPI users

1. Why haven't you started using UPI for receiving payments?
2. What are some of the challenges that might prevent you from using UPI?
3. Would you be more likely to consider using UPI if you had more information about its security features and benefits?
4. Would you consider using UPI if it becomes more widely accepted by normal vendors and small businesses in the future?
5. Why do you prefer using cash for your everyday transactions?
6. Have you encountered a reduction in customers because you are not using UPI?
7. Is tax payment one of the reasons you do not use UPI as the mode of transaction (As it records the transaction history)?

Focus groups

1. What benefits do you find in using UPI over cash, especially for speed and convenience?
2. What challenges do you face with UPI, like network issues or transaction failures?
3. Do you feel UPI transactions are secure? Have you faced any fraud issues?
4. How has UPI affected your payment management and business operations?
5. What improvements would you like to see in UPI apps?
6. How do you confirm UPI payments without sound boxes or instant notifications?