

User Perspectives on Digital Payment Systems: Patterns, Preferences, and Problems

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Abstract

The rapid evolution of digital technologies has significantly transformed the financial landscape in India, with digital payment systems becoming a core component of everyday transactions. Driven by the rise of mobile internet, government-led initiatives like Digital India, and the widespread adoption of platforms such as Unified Payments Interface (UPI), cashless transactions are increasingly becoming the norm across socio-economic group. This study explores user experience in digital payment systems, focusing on factors that influence adoption and satisfaction. Through a mixed-methods approach combining surveys and in-depth interviews, we examined user perceptions, preferences, and pain points associated with the usage of digital payment systems across various demographic segments in India. Based on data collected from 130 respondents the analysis reveals critical insights into digital payment behaviors. The findings underscore a strong shift toward mobile-first financial behavior among younger generation and working professionals, while also revealing a need for improvements in transaction reliability and technical infrastructure to ensure smoother user experiences. The study advocates for targeted digital literacy programs and enhanced app functionality to bridge the remaining gaps in adoption and satisfaction.

Keywords: Digital payment system, digital payment challenges India, digital payment user behavior, consumer perception

Introduction

In the digital era, financial transactions have increasingly shifted from traditional cash-based systems to streamlined digital platforms. Among the critical success factors for these platforms, User Experience (UX) has emerged as a key determinant in fostering user adoption, satisfaction, and long-term engagement. A UX-centric approach ensures that digital payment systems are not only functional but also intuitive, inclusive, and secure—thereby enhancing user trust and accessibility (Norman, 2013).

In countries like India, where financial inclusion is a national priority, digital payment platforms must cater to diverse demographics, including non-tech-savvy users. A UX-centric design focuses on local language support, simplified interfaces, minimal cognitive load, and personalized onboarding—factors proven to increase usability and trust (Ravikant & Dey, 2020). Additionally, research shows that systems with better UX can significantly reduce transaction times and error rates, contributing to operational efficiency and user retention (Lee & Coughlin, 2015).

Digital payments offer a multitude of benefits including convenience, speed, transparency, and accessibility, and have gained momentum especially post the COVID-19 pandemic, which

catalyzed the need for contactless transactions (Deloitte, 2021). Today, consumers from varied backgrounds—students, employed professionals, self-employed individuals, and retirees—are actively engaging with mobile wallets, UPI, net banking, and card-based systems for purchases, utility payments, and money transfers.

Literature Review

The adoption of digital payment systems in India has seen unprecedented growth in recent years, driven by advancements in mobile technology, the spread of internet access, and policy support through initiatives like Digital India and Jan Dhan Yojana (Kumar & Patra, 2021). The introduction of the Unified Payments Interface (UPI) in 2016 revolutionized digital payments by enabling real-time, interbank peer-to-peer transactions through smartphones, contributing significantly to the growth of cashless ecosystems (RBI, 2021).

User behavior in digital payments is influenced by several factors including income level, age, gender, occupation, and technological familiarity. According to Singh and Rana (2020), convenience and speed are the most cited reasons for adopting digital payments, especially among younger and working populations. This aligns with the current study, where convenience (47%) and speed (22%) emerged as the leading motivations for usage, particularly among individuals aged 18–30 and self-employed professionals.

Income and occupation also play a significant role in the type of digital transactions users engage in. Studies by Sharma and Gupta (2019) reveal that lower-income individuals primarily use digital payments for utility services like mobile recharge and bill payments, while higher-income users engage more in online shopping and money transfers. This correlates with the data in the present study, where <10k income groups focused on recharges and transfers, while mid-income groups (₹10k–₹50k) diversified into online shopping and bill payments.

Despite the wide adoption, challenges persist in digital payment systems. According to KPMG (2022), the most common issues faced by users include transaction failures, technical errors, and lack of customer support. In line with this, the data from the current study shows failed transactions (65%) and technical glitches (28%) as dominant issues, especially among active users in the 18–45 age range.

Moreover, digital literacy and security concerns remain barriers to inclusive adoption, particularly among older adults and women. As per Chatterjee and Barman (2020), while men are more likely to explore and trust digital payment systems, women often face confidence and awareness gaps, which may explain the lower engagement in higher-income females in the current dataset.

In terms of usage frequency, the findings support earlier work by Verma & Tiwari (2020), who noted that daily usage is most common among students and employed individuals, suggesting strong habitual integration into daily life. The current study reinforces this, with 64 users reporting daily use, particularly in the 18–30 and 31–45 brackets.

Objectives

- Examine how demographic factors (e.g., age, gender, income, occupation) influence the adoption and usage of digital payment systems.
- To determine how occupation and gender influence preferred payment methods (UPI, COD, cards, net/mobile banking) among the respondents.

- To analyze the primary motivations for using digital payments—specifically convenience, speed, lack of cash, discounts, and others—across occupational categories and genders.
- To evaluate how income levels affect the types of purchases made via digital payments (e.g. food & beverages, recharges, shopping, bills, money transfers).
- To identify the major issues and challenges faced by different age groups and genders during digital payment transactions, focusing on failed transactions and technical glitches.
- To compare the relative frequency of key behaviors (usage types, motivations, issues) across demographic groups, using percentage distributions and segmented visualizations.

Materials and Methods

• Study Design

This research employed a quantitative, descriptive survey design to explore the usage patterns, preferences, and challenges associated with digital payment systems across diverse demographic segments in India.

• Sample and Sampling Technique

A total of 130 respondents participated in the study from Urban and Rural areas of the Kakinada city located in the state of Andhra Pradesh. Convenience sampling technique was used and both urban and rural participants were considered for the study.

• Data Collection Tool

The primary instrument used for data collection was a structured questionnaire, developed based on prior literature (Singh & Rana, 2020; KPMG, 2022). The questionnaire was divided into the following sections: Demographic Information, Usage Behavior, Preferred Payment Methods, Purpose of Use, Sources of Information, Reasons for Usage, Challenges Faced.

The questionnaire used closed-ended questions with predefined options to maintain consistency in responses and ease of data analysis.

• Data Collection Procedure

Data were collected over a period of four weeks in physical formats.

• Data Analysis

Collected data were compiled and analyzed using Microsoft Excel. Descriptive statistics such as frequency and percentage were used to interpret the results. Data were tabulated based on demographic variables and cross-compared to understand patterns in different Variables.

Graphs and tables were used for visual interpretation of findings, supporting the textual analysis.

Results and Analysis

The study analyzed the digital payment behaviors of 130 respondents across varied age groups, genders, occupational categories, and income levels.

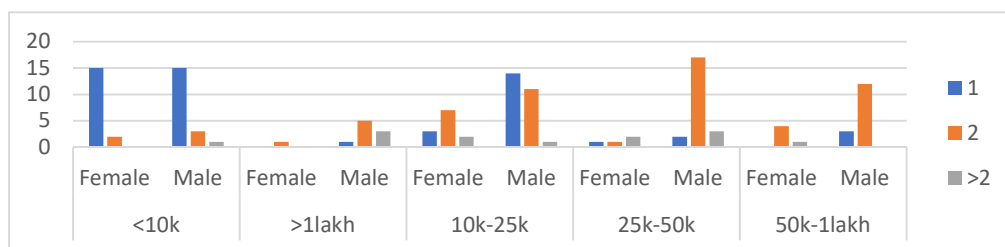
Table1: Number of Bank Accounts by Income and Gender

NO. of Bank Accounts Income	ONE	TWO	MORE THAN TWO	Grand Total
<10k Male	15	3	1	19
Female	15	2	-	17
10k-25k Male	14	11	1	26

Female	3	7	2	12
25k-50k Male	2	17	3	22
Female	1	1	2	4
50k-1lakh Male	3	12	-	15
Female	-	4	1	5
>1lakh Male	1	5	3	9
Female	-	1	-	1
Grand Total	54	63	13	130

Source: Primary Data

Variables: Income – Gender – Number of Bank Accounts

**Fig 1****Interpretation of Data: Number of Bank Accounts by Income and Gender**

The given data provides insights into the relationship between income levels, gender, and the number of bank accounts individuals hold. A total of 130 individuals were surveyed, categorized by income and gender, and grouped based on the number of bank accounts they maintain: one, two, or more than two.

- Majority of individuals (63) have two bank accounts, followed by 54 individuals with one account, and 13 individuals with more than two accounts.

Income-wise Analysis:

- Low Income (<10k):**
 - Both males and females predominantly hold only one bank account (15 each).
 - Very few individuals (4 out of 36) have more than one account.
 - This indicates limited financial engagement, possibly due to income constraints.
- Lower Middle Income (10k–25k):**
 - A higher tendency towards two accounts, especially among males (11 males and 7 females).
 - Still, most people (17 out of 38) hold a single account.
 - The shift toward multiple accounts begins in this group.
- Middle Income (25k–50k):**
 - A significant number of males (17) have two bank accounts, suggesting active financial management.
 - A few individuals (5) have more than two accounts.
 - This group marks a transitional phase toward greater financial engagement.
- Upper Middle Income (50k–1 lakh):**
 - Majority of males (12 out of 15) have two accounts, and 4 out of 5 females also have two or more.
 - This shows a growing trend of diversified banking behavior in this income group.

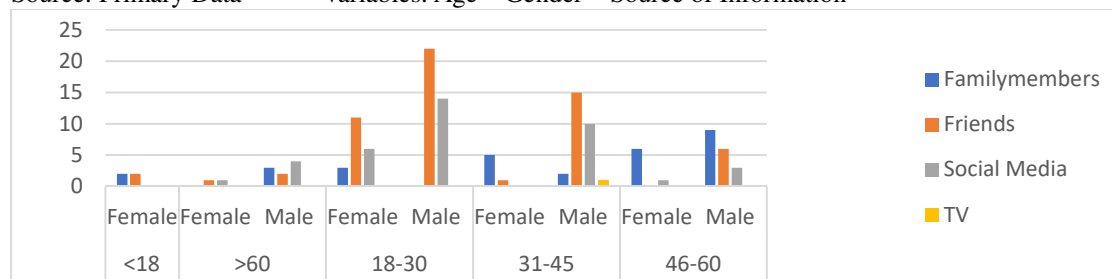
- High Income (>1 lakh):
 - Notably, 3 out of 9 males have more than two accounts, indicating advanced financial management.
 - Females in this group still show limited banking engagement (only 1 female respondent).

Table2: Source of Information by Age and Gender

Source of Information	Family members	Friends	Social Media	Television	Grand Total
Age					
<18 Female	2	2	--	--	4
18-30 Male	--	22	14	--	36
Female	3	11	6	--	20
31-45 Male	2	15	10	1	28
Female	3	1	--	2	6
46-60 Male	9	6	3	--	18
Female	6	--	1	--	7
>60 Male	3	2	4	--	9
Female	--	1	1	--	2
Grand Total	28	60	39	3	130

Source: Primary Data

Variables: Age – Gender – Source of Information

**Fig 2****Interpretation: Source of Information by Age and Gender**

This dataset explores how individuals from different age groups and genders receive information—through family members, friends, social media, and television.

- The most common source of information is friends (60 respondents), followed by social media (39), family members (28) and Television (3).

Age-wise and Gender-wise Insights:

- Younger age groups (18–30) are highly influenced by friends and social media, showing strong digital and peer connectivity.

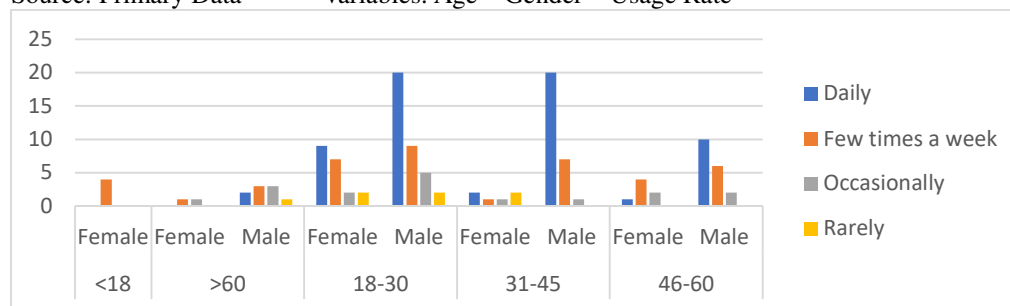
- Older age groups (46+) prefer family as a source, indicating reliance on traditional and trusted networks.
- Television is almost obsolete as a source of information in this dataset—only 3 individuals (2 females in 31–45, 1 female in 46–60) reported using it.
- Females (particularly <18 and 18–30) show greater interaction through friends and social media, while males aged 31–45 exhibit the highest use of friends as an information source.
- The least active group digitally is females above 45, showing limited interaction with any source apart from family.

Table3: Usage Rate by Age and Gender

Usage Rate	Daily	Few times a Week	Occasionally	Rarely	Grand Total
Age					
<18 Female	--	4	--	--	4
18-30 Male	20	9	5	2	36
Female	9	7	2	2	20
31-45 Male	20	7	1	--	28
Female	2	1	1	2	6
46-60 Male	10	6	2	--	18
Female	1	4	2	--	7
>60 Male	2	3	3	1	9
Female	--	1	1	--	2
Grand Total	64	42	17	7	130

Source: Primary Data

Variables: Age – Gender – Usage Rate

**Fig 3**

Interpretation: Usage Rate by Age and Gender

This dataset shows how frequently individuals from various age groups and genders use a certain service or application. The frequency is categorized as Daily, Few times a week, Occasionally, and Rarely, with a total of 130 participants.

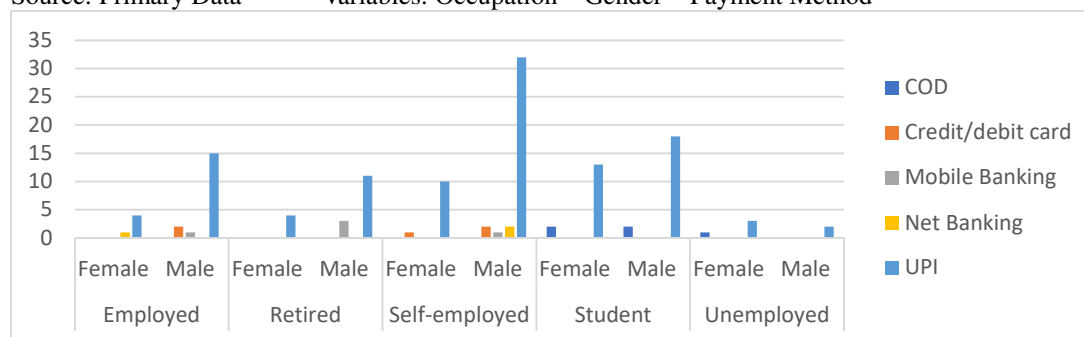
- The majority of respondents (64 out of 130) use the service daily, followed by 42 who use it a few times a week.
 - Only 17 use it occasionally, and 7 respondents use it rarely.
- Usagerate-wise Insights:
- High Usage (Daily/Few times a week):
 - Youth (18–30 and 31–45) are the most active users.
 - Males aged 18–45 show particularly strong engagement.
 - Moderate to Low Usage:
 - <18 and >60 age groups have the least daily usage.
 - Usage among females declines significantly with age.
 - Rare/Occasional Users:
 - Only 7 people rarely use the service—most of them are from older age groups.
 - Occasional users (17) are spread across all age groups but are more frequent among females.

Table4: Payment Methods by Occupation and Gender

Payment Method	COD	Credit/debit Card	Mobile Banking	Net Banking	UPI	Grand Total
Occupation						
Employed Male	--	2	1	--	15	18
Female	--	--	--	1	4	5
Retired Male	--	--	3	--	11	14
Female	--	--	--	--	4	4
Self-employed	--	2	1	2	32	37
Male	--	1	--	--	10	11
Female						
Student Male	2	--	--	--	18	20
Female	2	--	--	--	13	15
Unemployed Male	--	--	--	--	2	2
Female	1	--	--	--	2	3
	5	5	5	3	112	130

Source: Primary Data

Variables: Occupation – Gender – Payment Method

**Fig 4**

Interpretation: Payment Methods by Occupation and Gender

This dataset analyzes the preferred payment methods—Cash on Delivery (COD), Credit/Debit Card, Mobile Banking, Net Banking, and UPI—across different occupations and genders.

- UPI is the most widely used payment method, with 112 out of 130 respondents using it (86% of total).
- All other payment methods (COD, Credit/Debit Card, Mobile Banking, Net Banking) are less commonly used, each with 3 to 5 users only.

Occupation-wise and Gender-wise Insights:

- UPI dominates across all occupation groups and genders with 112 users, making it the preferred mode of payment by a significant margin.
- Cash on Delivery (COD) is only used by 5 individuals, all of whom are students or unemployed females.
- Credit/Debit Cards, Mobile Banking, and Net Banking are marginally used (each by 3–5 respondents), with slight representation among employed and self-employed males and retired individuals.
- Students and self-employed individuals show high UPI engagement, reflecting comfort with mobile-first platforms and digital finance.

Table5: Reasons for Using Digital Payments by Occupation and Gender

Reason for Usage	Occupation	Contactless payments	Convenience	Discount and Offers	Easier tracking of expenses	Lack of Cash	Speed	Grand Total
Employed	Male	2	6	2	1	3	4	18
	Female	1	1	1	--	1	1	5
Retired	Male	--	7	1	--	5	1	14
	Female	--	2	1	--	--	1	4
Self-employed	Male	1	18	2	4	4	8	37
	Female	--	5	--	--	2	4	11
Student	Male	--	12	4	--	1	3	20
	Female	--	7	1	--	1	6	15
Unemployed	Male	--	1	--	--	--	1	2
	Female	--	2	2	--	--	--	4
Grand Total		4	61	14	5	17	29	130

Source: Primary Data

Variables: Occupation – Gender – Reason for Usage

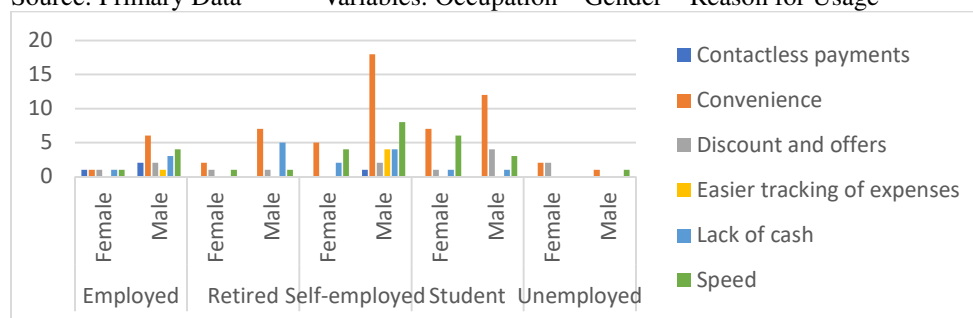


Fig 5

Interpretation: Reasons for Using Digital Payments by Occupation and Gender

This dataset captures the primary motivations behind digital payment usage, segmented by occupation and gender.

- The most cited reason is Convenience (61 responses), followed by Speed (29) and Lack of Cash (17).
- Contactless payments and tracking expenses are less common motivators, cited by only 4 and 5 respondents, respectively.

Occupation-wise Insights

- Employed individuals value ease and speed, with a few also influenced by contactless features and offers.
- Among retired individuals, convenience and not carrying cash are primary motivators.
- Self-employed individuals prioritize ease, speed, and control over expenses, aligning with their business needs.
- Convenience and discounts matter most to students, especially males, while females also care about speed.
- Even among the unemployed, discounts and convenience are key motivators—possibly due to financial constraints.

Table6: Type of Purchase by Income and Gender

Type of Purchase	Food & Beverages	Mobile Recharge	Online Shopping	Payments of Bills	Transfer of Money	Grand Total
Income						
<10k Male	3	8	1	--	7	19
Female	3	1	7	1	5	17
10k-25k Male	1	5	5	9	6	26
Female	2	--	6	2	2	12
25k-50k Male	2	3	2	10	5	22
Female	--	1	1	1	1	4
50k-1lakh Male	--	1	4	6	4	15
Female	1	--	1	1	2	5
>1lakh Male	1	--	3	1	4	9
Female	--	--	1	--	--	1
Grand Total	13	19	31	31	36	130

Source: Primary Data

Variables: Income – Gender – Type of Purchase

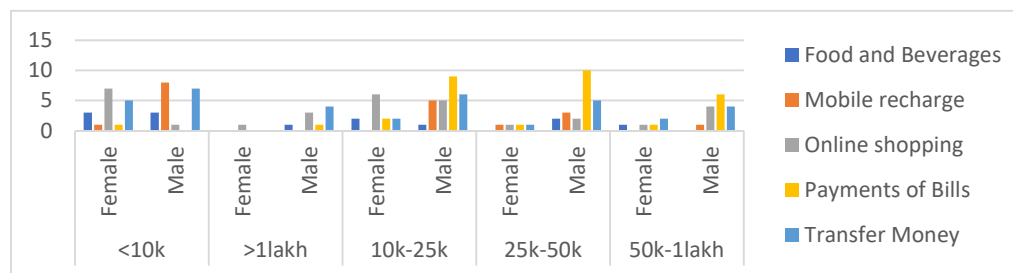


Fig 6

Interpretation: Type of Purchase by Income and Gender

This dataset captures the kinds of transactions made using digital payment systems, categorized by income and gender.

- The most common digital transaction types are: Money Transfers (36 responses), Online Shopping (31 responses), Bill Payments (31 responses)
- Food & Beverages (13) and Mobile Recharge (19) are less frequently recorded as digital purchases.

Income-wise and Gender-wise Insights:

- Lower-income(<10k) individuals prioritize essential utility payments (recharge, transfers) and small e-commerce.
- Slightly higher income(10k-25k) enables broader digital use, especially for recurring expenses like bills and shopping.
- Mid-income(25k-50k) males are actively using digital payments for essential services. Female usage is low but balanced.
- Rising income(50k-1lakh) supports diverse digital spending, particularly shopping and utilities.
- Higher-income(>1lakh) individuals use digital payments more for convenience and larger-value transfers, with less need for frequent small-value uses like mobile recharge.
- Females are more engaged in online shopping, while males dominate in utility bill payments and recharges.

Table7: Issues or Challenges Faced in Using Digital Payments by Age and Gender

Issues/Challenges	Failed Transactions	Lack of Merchant Acceptance	Security concern	Slow Customer Support	Technical glitches/ App Crash	Grand Total
Age						
<18	2	--	--	--	2	4
Female						
18-30	23	1	--	1	11	36
Male	14	1	2		3	20
Female	12	1	1	1	13	28
31-45	5	--	1	--	--	6
Male	12	--	1	--	5	18
Female	6	--	--	--	1	7
46-60	8	--	--	--	1	9
Male	2	--	--	--	--	2
Female						
>60						
Male						
Female						
Grand Total	84	3	5	2	36	130

Source: Primary Data

Variables: Age – Gender – Issues/Challenges

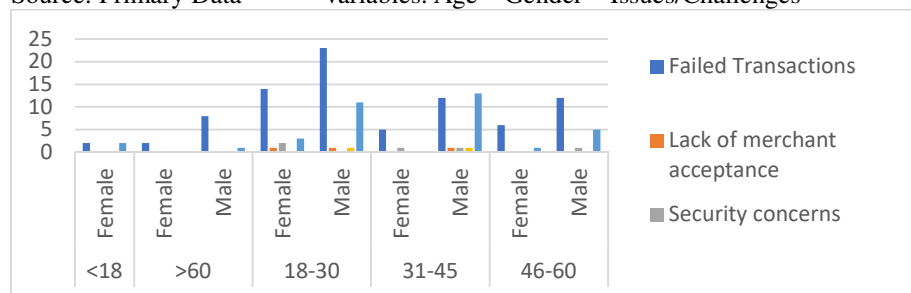


Fig 7

Interpretation: Issues or Challenges Faced in Using Digital Payments by Age and Gender

The data explores the common problems users encounter while using digital payment systems, segmented by age groups and gender.

- Failed transactions (84 responses) are by far the most common issue, affecting almost two-thirds of all users.
- Technical glitches or app crashes (36 responses) are the second-most reported problem.
- Security concerns (5) and lack of merchant acceptance (3) are minimal.
- Slow customer support is rarely a concern (only 2 users mentioned it).

Age-wise and Gender-wise Insights:

- Young users(<18) face typical technical issues, especially with app reliability and transaction success.
- Young adults(18-30) are the most affected group, especially by failed transactions and technical errors. Security concerns start to appear among females.
- Middle-aged(30-45) males face significant technical issues, both failed transactions and crashes, possibly due to active financial transactions.
- Continued trend of failed transactions dominating user concerns of 46–60 Years.
- Elderly users(>60) face basic reliability issues—primarily failed transactions—but show fewer complex complaints.
- The low report rate for customer support issues may indicate either a lack of attempts to seek help or low expectations of resolution.

Findings

- Income Level is directly related to the number of bank accounts an individual holds. As income increases, people tend to maintain multiple bank accounts for diverse financial purposes such as savings, investments, and business.
- Males are more likely to have multiple bank accounts than females across all income brackets.
- Females, even in higher income brackets, show less diversification in bank account ownership, which could indicate limited financial literacy, accessibility, or socio-cultural factors.
- Age is a strong determinant of usage frequency. Younger individuals (especially males aged 18–45) are frequent users, suggesting digital proficiency and higher engagement.
- Gender gap is noticeable—males consistently show higher daily usage than females in the same age brackets.
- Older age groups (>60) and females over 30 are less likely to use the service daily, suggesting a need for awareness or digital literacy programs targeted at these demographics.
- Young adults rely more on friends and digital platforms, while older individuals trust family-based sources.
- Television, once a dominant medium, now plays an insignificant role.
- UPI has clearly transformed digital payment behavior across various demographic segments, even among the retired and unemployed.
- COD is now limited and largely used by those with limited digital access or younger/unbanked users.
- Convenience is the leading reason for adopting digital payments across all occupations and genders.

- Speed is the second most important reason, particularly among self-employed and student females.
- Contactless payments and expense tracking, while beneficial, are least considered, suggesting a potential gap in awareness or utility for these features.
- Digital payments are primarily used for practical, recurring expenses like money transfers, bills, and online shopping.
- Females are more engaged in online shopping, while males dominate in utility bill payments and recharges.
- Failed transactions are the most widespread challenge, cutting across all ages and genders.
- Technical glitches or app crashes are increasingly reported by younger and middle-aged males, likely due to higher app usage.
- Security concerns and merchant acceptance are minimal, possibly reflecting growing trust and adoption of digital payments.
- Youth and working professionals are leading users, while elderly users and females in lower-income groups show relatively lower engagement.

Suggestions

Based on the study findings regarding user behavior, preferences, and challenges with digital payment systems, the following suggestions are proposed to improve adoption, experience, and trust across various demographic segments.

1. Improve Transaction Reliability

- Since failed transactions (65%) and technical glitches (28%) were the most frequently reported issues, service providers must:
 - Enhance server stability and app performance.
 - Minimize downtime and implement real-time issue detection and resolution systems.
 - Regularly update mobile apps to ensure compatibility across devices and networks.

2. Strengthen Digital Infrastructure in Semi-urban and Rural Areas

- Ensure wider merchant acceptance, especially in areas where users cited lack of merchant support.
- Promote affordable Point-of-Sale (PoS) devices and QR-based UPI acceptance among local vendors and small businesses.

3. Focus on User-Centric App Design

- Improve user interfaces with larger fonts, voice guidance, and simplified workflows to support elderly users and those with low literacy levels.
- Add in-app tutorials and visual cues for first-time users.

4. Offer Incentives for Broader Usage

- Promote discounts, cashbacks, and reward points to motivate usage among students and unemployed individuals, who showed interest in offers.
- Introduce referral bonuses to increase adoption via peer networks.

5. Enhance Customer Support Systems

- The few complaints about slow customer support suggest the need for:
 - 24/7 multilingual helpdesks
 - AI-powered chatbots for faster query resolution

- Transparent grievance redressal timelines
- 6. Promote Financial Literacy and Cybersecurity Awareness
 - Conduct regular awareness programs on:
 - Safe digital payment practices
 - Identifying phishing or fraud attempts
 - Protecting personal data and banking credentials
 - Target these especially to women and older adults, where security concerns and low engagement were observed.
- 7. Customization of Services Based on User Profile
 - Tailor services and features according to occupation and income group, such as:
 - Simplified UPI options for students
 - Tax and invoice management for self-employed users
 - Bill reminders and EMI tools for salaried individuals
- 8. Government and Industry Collaboration
 - Encourage partnerships between government agencies, banks, fintech companies, and educational institutions to:
 - Promote inclusive digital payment adoption
 - Monitor digital usage trends
 - Introduce region-specific interventions

Future Directions / Discussion

1. Broadening Research Scope

This study, while rich in demographic detail, is limited in geographic scope. Future studies could:

- Scale to include pan-India rural-urban comparisons
- Integrate qualitative interviews to understand attitudes, fears, and motivations behind digital payment choices
- Examine the impact of fintech innovations (e.g., voice-based UPI, biometric payment systems) on user inclusivity

2. Enhancing Platform Reliability and User Trust

With failed transactions (65%) and app crashes (28%) being the most frequent issues, it is clear that technical infrastructure and app performance need significant enhancement. Future work should investigate:

- Root causes of transaction failures across platforms and locations
- User tolerance thresholds for technical errors
- Trust factors influencing continued usage after negative experiences

3. Addressing Gender and Income Disparities

The data reveal disparities in digital payment adoption across income levels and genders. Women in lower-income groups and those above 60 years of age are significantly underrepresented.

Future research and community programs should:

- Explore social, cultural, and economic barriers to digital adoption among marginalized groups
- Promote gender-inclusive app design and financial incentives for adoption
- Conduct longitudinal studies to assess behavior change over time with interventions

Conclusion

The findings of this study highlight the widespread yet uneven adoption of digital payment systems across different demographic groups in India. UPI emerged as the most preferred payment method, particularly among youth, students, and self-employed individuals, owing to its convenience and speed. However, significant challenges such as failed transactions, technical glitches, and limited awareness among certain segments—especially women, elderly users, and lower-income groups—continue to hinder full-scale adoption.

While a large portion of users rely on digital payments for money transfers, bill payments, and online shopping, their experiences vary based on age, gender, income, and occupation. The study also reveals that word-of-mouth and peer influence play a crucial role in digital payment adoption, indicating a need for more structured awareness programs.

To ensure equitable access to digital financial tools, stakeholders—including policymakers, financial institutions, technology providers, and community organizations—must work together to improve platform reliability, enhance digital literacy, and create targeted interventions for underserved groups. Strengthening these efforts will be essential for building a secure, inclusive, and resilient digital payment ecosystem that supports India's vision of a cashless economy.

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