The Shift in Retail Consumer Payment Behaviour: A Comparative Study of Cash, UPI and other Digital Payment Methods

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Abstract:

Cash has long been the dominant mode of payment in Indian retail, but the rise of UPI and other digital payment platforms has altered consumer payment behaviour. This study aimed to examine the changing retail consumer payment behaviour by comparing Cash, UPI and other digital payment modes and testing the effect of convenience, security and speed on payment preference and changing payment behaviour. Primary data were collected by administering a structured self-administered questionnaire with five-point Likert items. Of the 120 replies received, 116 respondents who gave consent were analysed in Microsoft Excel by performing descriptive statistics, Cronbach's alpha, chi-square test, one-way ANOVA, LINEST (linear regression) and Baron–Kenny/Sobel test for mediation. UPI emerged as the most preferred mode for regular purchases (56.0%) and small value purchases (49.1%) over cash (33.6 and 36.2%), and the distribution varied significantly from an evenly distributed category ($\chi^2 = 36.33$, $p < .001$). Convenience, security and speed together explained 65.2% of the variance in payment preference ($R^2 = 0.652$), with convenience being the major driver. Payment preference strongly predicted the changing payment behaviour ($r = 0.82$) and partially mediated the effect of payment factors (indirect effect = 0.293, Sobel $z = 4.68$, $p < .001$). Age, income and education were not significantly associated with the choice of payment mode or behaviour change in this predominantly young sample. The findings suggest that the consumers are trending towards UPI while cash continues to wield a considerable influence, and that the retailers and payment providers should compete on convenience, speed and visible security.

Keywords:

Payment behaviour; UPI; Cash; Digital payments; Convenience; Security; Speed; Payment preference; Retail consumers; Mediation analysis.

Introduction:

Payment methods have undergone significant changes in recent years. Previously, cash was the dominant method used by people for everyday purchases, especially for small value transactions. With the popularity of smartphones, internet, banking services and digital technology, people have more options for making payments, such as UPI, debit and credit cards, mobile wallets and internet banking.

Among these methods, UPI has become an important component of everyday payments in India because it enables people to transfer money quickly and easily using a mobile phone. Digital payments have also become commonplace in various payment settings such as shops, restaurants, supermarkets, transport services and online businesses. Features such as convenience, speed, ease of use, security, and cashback or other offers can influence the payment mode selected by the consumers.

However, the popularity of digital payments does not imply that cash has disappeared entirely. Many consumers continue to prefer cash for certain types of purchases due to its perceived simplicity, familiarity, and convenience when digital

payment facilities are unavailable. Therefore, the consumers may adopt different payment methods according to the type of purchase, availability of payment facilities, personal preference, and their level of comfort with digital technology.

The shift from cash towards UPI and other digital payment methods has also influenced the changing payment behaviour of the consumers. Consumers may now make more frequent payments, carry less cash, and select payment methods based on convenience and speed. In addition to these benefits, concerns related to security, fraud, internet connectivity, digital knowledge, and trust can impact their willingness to make digital payments.

Review of Literature:

Samwani & Khanna (2024) The study explains the rapid rise of UPI in India since its introduction. It highlights the role that rising internet usage, especially in rural parts of India, has played in making UPI adoptions and transactions easier.

Ravichandran & Jeeva (2025) The study discusses the increasing significance of digital payment transactions in India. It explains the value of digital payments in enhancing transparency and economic activity and how they are becoming more popular in the banking, retail and e-commerce sectors.

Sree Lakshmi (2025) The study focuses on the role that digital payments have played in financial inclusion in India. It highlights the impact of government initiatives and the proliferation of mobile-payment applications in enabling financial inclusion in India

Rai (2025) The study explains the move of India from a largely cash-based economy to one of digital payments. It highlights the role of UPI in this process while pointing out challenges such as cybersecurity and lack of digital literacy.

Hire (2025) The study binds the rise of digital payments with the expansion of the e-commerce sector. It suggests that UPI transactions have enhanced the ease and convenience of online transactions, thus promoting e-commerce.

Digital Payment Service Study (UPI Case Study) The study highlights speed, convenience and reduced transaction costs as significant strengths of UPI. It points out fraud and low consumer awareness as some of the key challenges that UPI faces.

Dev et al. (2024) The study looks at how UPI transactions influence consumer spending behaviour. It suggests that consumers may begin spending more via digital means than cash as digital transactions do not require a strong tactile sense.

Hota et al. (2025) The study examines the digital payment ecosystem and the concentration of transactions in the few payment applications. It highlights the need for regulation, fair-play and a regulated digital payment environment.

Dahiphale et al. (2024) The study focuses on the security aspects of digital payments and the prevalence of online fraud. It suggests that advanced technologies can enhance the detection of fraudulent activities, thus restoring consumer confidence in digital payments.

IMF Report The study reports on the decline in cash usage as digital payments, particularly UPI, become more popular in India. It indicates a gradual shift in India towards a largely non-cash economy.

MSME Digital Adoption Report The report examines the benefits of digital payments to small businesses and shows how they promote efficiency and increase income levels in both rural and urban areas.

Abbasi & Weigand (2017) The study reviews the role of digital financial services in business performance and competitiveness. It indicates that digital financial technologies can offer businesses an avenue for accessing financial services in a more efficient manner.

Sudiksha Shree, Bhanu Pratap, Rajas Saroy & Sarat Dhal The study examines the factors that enhance consumer payment behaviour in India, focusing on perception, trust and online-fraud experiences. It found that age, gender and income can influence payment behaviour while trust and perception play a significant role in digital payment usage.

Vandana Bhavsar & Pradeepta Kumar Samanta (2022) The study examines the sustainability of digital payments in India and finds that the increase in digital payment transactions coincides with the demand for more currency. It highlights financial literacy and economic growth as significant determinants of the long-term survival of digital payments in India.

Naveen Kumar Singh et al. (2018) The study identifies the key factors that influence the adoption of digital payment systems in India and highlights their significance by applying the ISM-based methodology. It suggests that an understanding of the identified factors can ease the process of implementing digital payment systems in India.

Dr. Anil Jain, Dr. Apurva Sarupria & Ankita Kothari (2020) The study examines the growth of digital payment services during the COVID-19 period and highlights several factors such as demonetisation, government initiatives and an increase in digital channels that promoted this growth in consumer-service sectors.

Sudiksha Shree et al. — consumer payment behaviour study The study found that despite the considerable rise of digital payments, cash still dominates as a means of consumer payments. It highlights convenience, efficiency and multiple payment options as factors that encouraged digital-payment usage while highlighting security concerns as the major concern affecting consumer behaviour with regard to digital payments.

Neha, Akshmeet & Sholka The study compared the payment behaviour before and after COVID-19 and found a significant decline in the use of cash as a means of payment. It also reported a rise in the use of online-wallets, cards, net-banking and other cashless-payment methods after the pandemic.

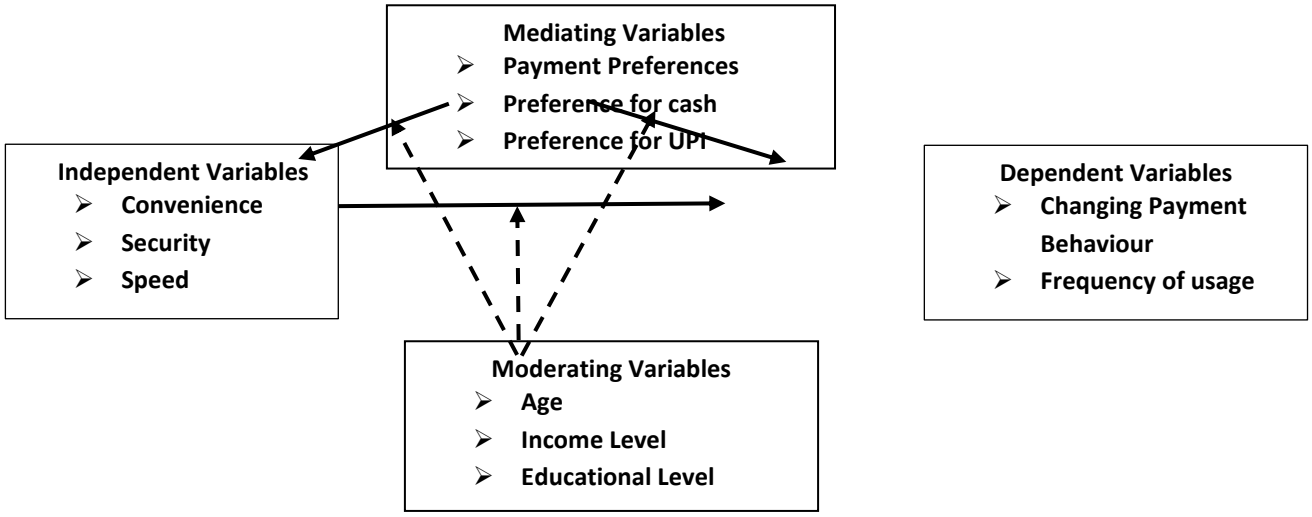
Kumar & Sharma (2020) The study identified convenience, speed of transactions and perceived usefulness as key factors encouraging digital-payment adoption among Indian urban consumers. It also highlighted security concerns as a major factor that can hinder digital payment adoption among Indian urban consumers.

Problem Statement:

The rapid growth of UPI and digital payment methods has changed the way retail consumers are making everyday transactions, while cash remains in use. However, there is a need to understand the changing payment preferences of consumers and the factors that influence the choice between Cash, UPI and other digital payment methods.

Conceptual Framework:

The study has been built on the conceptual framework presented in Figure 1. Convenience, security and speed are the independent variables. Payment preferences (preference for cash and preference for UPI) act as the mediating variable. Changing payment behaviour of retail consumers, as measured by the frequency of usage and the shift from cash to digital, is the dependent variable. Age, income level and educational level are the moderating (demographic) variables.



Research Gap:

While previous studies have primarily focused on the adoption and use of digital payments particularly UPI and their effects on the consumer spending behaviour. There is however a scarcity of research comparing the consumer preferences for Cash, UPI and other digital payment methods. The existing studies also focus specifically on certain groups and regions leaving a gap on understanding the evolving payment behaviour of retail consumers. Thus this study seeks to examine the shift in payment preferences and factors influencing the choice between Cash, UPI and digital payment methods by the consumers.

Research Objectives:

1. To understand how convenient, secure and fast the methods of payment are influencing the choices of the retail consumers.

2. To compare the ways by which retail consumers prefer and use Cash and UPI for their payments.

3. To understand whether the preference of the consumers for payment is associated with changes in their payment behaviour.

4. To find out whether the payment preferences explain the relationship between the payment factors and the changes in the consumers' payment behaviour.

5. To understand the ways by which age, income and education influence the consumers' payment choices and behaviour.

Research Hypothesis:

Null Hypothesis (H0-1): Convenience, security, ease of use, speed, and trust do not influence the payment choices of the retail consumers.

Alternative Hypothesis (H1-1): Convenience, security, ease of use, speed, and trust influence the payment choices of the retail consumers**.**

Null Hypothesis (H0-2): There is no significant difference in the ways by which consumers use Cash, UPI and other digital payments.

Alternative Hypothesis (H1-2): There is a significant difference in the ways by which consumers use Cash, UPI and other digital payments.

Null Hypothesis (H0-3): Consumers' payment preferences are not significantly related to the changes in their payment behaviour.

Alternative Hypothesis (H1-3): Consumers' payment preferences are significantly related to the changes in their payment behaviour.

Null Hypothesis (H0-4): Payment preferences do not significantly mediate the relationship between the payment factors and consumers' changing payment behaviour.

Alternative Hypothesis (H1-4): Payment preferences significantly mediate the relationship between the payment factors and consumers' changing payment behaviour.

Null Hypothesis (H0-5): Age, income and education do not significantly influence the consumers' payment choices and behaviour.

Alternative Hypothesis (H1-5): Age, income and education significantly influence the consumers' payment choices and behaviour.

Research Methodology:

The study employs a quantitative, descriptive and cross-sectional research design aided by secondary literature. The study used a structured, self-administered questionnaire as the main data collection instrument. Data were collected from retail consumers using cash, UPI and various digital payment methods for everyday purchases.

Sample and data collection

The questionnaire was circulated online and responses were received within a week (12 to 19 September 2026). The study used non- probability convenience sampling procedure. A total of 120 responses were received; 4 respondents did not agree to participate in the consent question (Q1) and thus were excluded leaving 116 respondents who were included in the data analysis. The respondent names were excluded in the analysis process.

Table 1. Profile of respondents (n = 116)

Characteristic	Category	Frequency	Percent
Age group	18–25 years	112	96.6%
	26–35 years	4	3.4%
Monthly household income	Below ₹25,000	27	23.3%
	₹25,000–₹50,000	29	25.0%
	₹50,001–₹75,000	5	4.3%
	₹75,001–₹1,00,000	2	1.7%
	Above ₹1,00,000	9	7.8%
	Prefer not to say	44	37.9%

Characteristic	Category	Frequency	Percent
Education	School education	5	4.3%
	Diploma	5	4.3%
	Undergraduate	76	65.5%
	Postgraduate	30	25.9%

Source: Primary data (Excel workbook, Descriptives sheet).

Instrument development

The questionnaire was developed based on the conceptual framework. The items were organized according to the variables described (Table 2). The instrument consisted of 26 items including a consent question, 21 items (questions) pertained to the study constructs (Q2-Q21), three items addressed demographical questions (Q22-Q24), and two items asked about the influence of demographical variables (Q25-Q26). Responses were measured using a five-point Likert scale (1 = strongly disagree/very unimportant/never to 5 = strongly agree/very important/very frequently). A complete list of questionnaire items can be found in Appendix A

. **Table 2. Variables, items and reliability**

Variable type	Construct	Items	Cronbach's α
Independent	Convenience	Q2, Q5, Q17	–
Independent	Security	Q3, Q18	–
Independent	Speed	Q4, Q19	–
Independent (composite)	Payment Factors (PF)	Q2–Q6, Q17–Q19 (8 items)	0.891
Mediating	Payment Preference (PP)	Q11, Q15, Q16	0.788
Dependent	Changing Payment Behaviour (CPB)	Q12, Q13, Q14, Q20, Q21	0.847
Moderating	Age, income, education	Q22, Q23, Q24	–
Payment choice / usage	Preferred method; cash and UPI frequency	Q7, Q8, Q9, Q10	–

Reliability was verified using Cronbach's alpha. All three multi-item scales exceeded the often-used 0.70 threshold (PF = 0.891, PP = 0.788, CPB = 0.847), suggesting good internal consistency. Content validity is based on using the

constructs of the conceptual framework and the items in the reviewed literature; clarity was obtained by short plain statements

Data preparation:

Verbal scales were coded with values from 1 to 5 (importance: Very Unimportant to Very Important; frequency: Never to Very Frequently). Choice questions (Q7, Q10) regrouped Debit/Credit Card, Mobile/Digital Wallet and "Other" under Other Digital, resulting in three categories (Cash, UPI, Other Digital). Education was grouped into Up to Diploma (school and diploma), Undergraduate and Postgraduate; income into Below ₹25,000, ₹25,000–₹50,000 and Above ₹50,000 with those who selected "Prefer not to say" excluded from income-related tests only; age into 18–25 and 26–35 years.

Data analysis:

All analysis was done in Microsoft Excel using worksheet functions (accompanying workbook: Payment_Behaviour_Analysis.xlsx). The techniques and connection to the hypotheses were: (i) descriptive statistics, correlation and Cronbach's alpha; (ii) chi-square goodness-of-fit tests for equal preference between Cash, UPI and Other Digital (H0-2) and chi-square tests of independence between preferred method and age, income and education (H0-5); (iii) one-way ANOVA with Bonferroni-adjusted post-hoc comparisons to compare behaviour and usage between groups (H0-2, H0-5); (iv) multiple and simple linear regression using the LINEST function (H0-1, H0-3, H0-5); and (v) a Baron–Kenny mediation analysis with the Sobel test (H0-4). The level of significance was 5%.

Data Analysis and Interpretation:

1. Descriptive statistics

Table 3 shows that respondents scored all constructs above the midpoint of the scale. Convenience had the highest mean (3.88), followed by security (3.79) and speed (3.78). Changing payment behaviour had the highest overall mean (4.01). At item level, the strongest agreement was with using UPI more than before (Q14: 4.19), with improvements in convenience, security and speed encouraging change (Q21: 4.16) and with using cash less than before (Q13: 4.10). The lowest item mean was for the statement that security influences preference (Q18: 3.38). Self-reported frequency of use was higher for UPI (mean 3.93 on a 1–5 scale) than for cash (3.43).

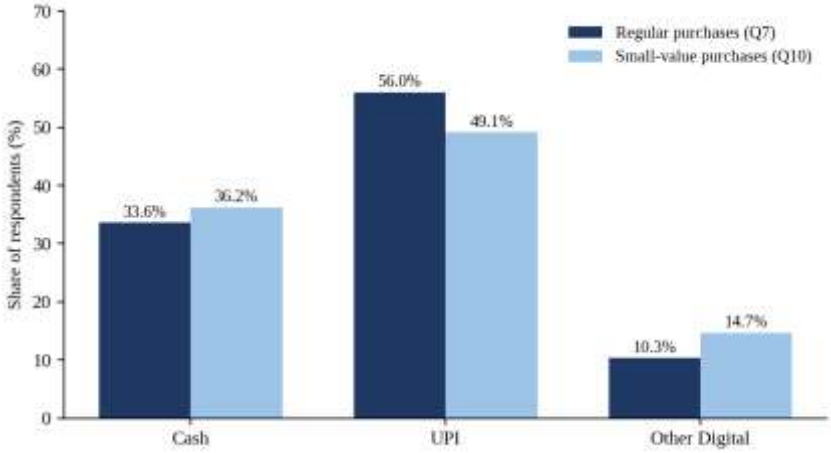
Table 3. Descriptive statistics of study variables (n = 116)

Variable	Items	Mean	Std. Dev.	Cronbach's α
Convenience	3	3.88	0.75	–
Security	2	3.79	0.76	–
Speed	2	3.78	0.78	–
Payment Factors (PF)	8	3.84	0.68	0.891
Payment Preference (PP)	3	3.84	0.73	0.788
Changing Payment Behaviour (CPB)	5	4.01	0.68	0.847

Scale: 1 = lowest, 5 = highest.

2. Choice of payment method: chi-square goodness-of-fit (H0-2)

Figure 2 and Table 4 illustrate the preference for payment method. UPI was preferred by 56.0% versus 49.1% for cash for regular retail purchases and 33.6% versus 36.2% for small-value purchases for the preferred method. Other digital methods (cards and wallets) were preferred by a much smaller subset. A chi-squared goodness-of-fit test against an equal distribution was significant for both regular ($\chi^2(2) = 36.33$, $p < .001$) and small-value ($\chi^2(2) = 21.12$, $p < .001$) purchases. The null hypothesis of no difference in the way consumers use Cash, UPI and other digital payments is therefore rejected



on this test.

Table 4. Chi-square goodness-of-fit test of preferred payment method

Question	Cash	UPI	Other Digital	Expected each	χ^2 (df = 2)	p-value	Decision
Q7 Regular purchases	39 (33.6%)	65 (56.0%)	12 (10.3%)	38.67	36.33	< .001	Reject H0
Q10 Small-value purchases	42 (36.2%)	57 (49.1%)	17 (14.7%)	38.67	21.12	< .001	Reject H0

Other Digital = debit/credit card, mobile/digital wallet and other digital methods.

3. Payment choice and demographics: chi-square tests of independence (H0-5)

Chi-square tests of independence were conducted to test whether choice of preferred payment method varied according to education, income or age (Table 5). None of the associations were significant ($p > .05$) and the effect sizes (Cramér's V) were generally small, suggesting that choice of preferred payment method did not differ significantly according to these characteristics in the sample. Furthermore, a test for association between the preferred method for regular purchases and preferred method for small-value purchases showed the two variables were not significantly associated ($\chi^2(4) = 3.06$, $p = .549$). This indicated respondents may have chosen different methods for each type of purchase as

mentioned in the introduction. However, several cells had expected counts of less than five (Table 5) so these should be interpreted with caution.

Table 5. Chi-square tests of independence (preferred method × demographic group)

Cross-tabulation	χ^2	df	p-value	Cramér's V	n	Cells E < 5	Decision
Method × Education	5.24	4	.264	0.150	116	3 of 9	Fail to reject H0
Method × Income*	5.07	4	.281	0.188	72	3 of 9	Fail to reject H0
Method × Age	1.90	2	.386	0.128	116	3 of 6	Fail to reject H0
Q7 method × Q10 method	3.06	4	.549	0.115	116	2 of 9	Fail to reject H0

4. One-way ANOVA (H0-2 and H0-5)

Table 6 shows the ANOVA results. The respondents differed significantly in terms of changing the payment behaviour based on their preference ($F(2, 113) = 9.52$, $p < .001$, $\eta^2 = 0.144$, a big effect by standard comparisons). The UPI-preferring respondents had the highest change score (4.23), followed by the other-digital-preferring (3.93) and the cash-preferring (3.67). Bonferroni-adjusted comparisons revealed that only the difference between the cash and UPI users was significant ($p < .001$). The usage frequency of UPI also differed significantly across the preferred methods ($F(2, 113) = 11.02$, $p < .001$), with the UPI-preferring respondents using it significantly more often than the cash-preferring respondents ($p < .001$) and the other-digital-preferring (adjusted $p = .040$).

The usage frequency of cash also differed by the preferred method ($F(2, 113) = 5.87$, $p = .004$), but the direction was the opposite: the respondents who preferred UPI indicated that they used cash more often (mean 3.66) than those who preferred cash (3.05); only the cash–UPI pair was significant (adjusted $p = .003$). Thus, the frequencies probably capture the overall activity as opposed to the exclusive reliance on a particular method, which would explain that the frequent users of UPI also handle cash regularly; however, note that it may be explained also by the response style of the respondents. It should be taken with caution.

For the demographic groups, no significant differences in terms of changing the payment behaviour were found across the education ($F(2, 113) = 0.51$, $p = .604$), the income ($F(2, 69) = 0.18$, $p = .838$) or the age group ($F(1, 114) = 0.02$, $p = .903$). The 26–35 age group only had four respondents, therefore the comparison across ages had almost no power.

Table 6. One-way ANOVA results: group means (SD), F, p and effect size

Analysis	Group means (SD)	F (df)	p-value	η^2	Decision
1. CPB by preferred method	Cash 3.67 (0.66); UPI 4.23 (0.65); Other Digital 3.93 (0.50)	$F(2, 113) = 9.52$	< .001	0.144	Reject H0
2. UPI frequency by preferred method	Cash 3.49 (0.88); UPI 4.26 (0.82); Other Digital 3.58 (1.00)	$F(2, 113) = 11.02$	< .001	0.163	Reject H0

Analysis	Group means (SD)	F (df)	p-value	η^2	Decision
3. Cash frequency by preferred method	Cash 3.05 (0.92); UPI 3.66 (0.85); Other Digital 3.42 (0.90)	F(2, 113) = 5.87	.004	0.094	Reject H0
4. CPB by education	Up to Diploma 4.20 (0.74); Undergraduate 3.97 (0.66); Postgraduate 4.03 (0.72)	F(2, 113) = 0.51	.604	0.009	Fail to reject H0
5. CPB by income*	Below ₹25k 3.99 (0.77); ₹25k–50k 3.88 (0.66); Above ₹50k 3.95 (0.82)	F(2, 69) = 0.18	.838	0.005	Fail to reject H0
6. CPB by age group	18–25 4.01 (0.69); 26–35 4.05 (0.44)	F(1, 114) = 0.02	.903	0.000	Fail to reject H0

*CPB = Changing Payment Behaviour. * Excludes respondents who did not disclose income. Groups: preferred method = Cash, UPI, Other Digital.*

5. Linear regression: effect of convenience, security and speed (H0-1)

A multiple regression with payment preference as the dependent variable and convenience, security and speed as predictors was significant, $F(3, 112) = 69.97$, $p < .001$, and explained 65.2% of the variance ($R^2 = 0.652$; adjusted $R^2 = 0.643$). All three predictors were significant. Convenience had the strongest effect ($\beta = 0.398$, $p < .001$), followed by security ($\beta = 0.274$, $p = .002$) and speed ($\beta = 0.214$, $p = .020$). H0-1 is rejected. When changing payment behaviour was used as the dependent variable instead (Table 7, Model 2), the pattern was the same and R^2 rose to 0.729.

Table 7. Regression of payment preference and changing payment behaviour on convenience, security and speed

Predictor	B	Std. Error	β	t	p-value
Model 1: DV = Payment Preference					
Intercept	0.572	0.230	–	2.49	.014
Convenience	0.390	0.094	0.398	4.13	< .001
Security	0.263	0.084	0.274	3.15	.002
Speed	0.202	0.086	0.214	2.35	.020
Model 2: DV = Changing Payment Behaviour					
Intercept	0.783	0.189	–	4.14	< .001

Predictor	B	Std. Error	β	t	p-value
Convenience	0.419	0.078	0.459	5.39	< .001
Security	0.256	0.069	0.285	3.71	< .001
Speed	0.167	0.071	0.189	2.36	.020

Model 1: $R^2 = 0.652$, adjusted $R^2 = 0.643$, $F(3, 112) = 69.97$, $p < .001$. Model 2: $R^2 = 0.729$, adjusted $R^2 = 0.722$, $F(3, 112) = 100.33$, $p < .001$. $n = 116$.

6. Payment preferences and changing payment behaviour (H0-3)

A simple linear regression of changing payment behaviour on payment preference was significant (B = 0.766, β = 0.821, t = 15.33, p < .001; $R^2 = 0.673$; $F(1, 114) = 235.06$). Also, the Pearson correlation between the two variables was very strong and positive (r = 0.821). Thus, respondents preferring a particular payment method more strongly showed bigger changes in their payment behaviour, which means that H0-3 is rejected.

7. Mediation analysis (H0-4)

Mediation was tested with Baron and Kenny's steps and the Sobel test (Table 8, Figure 3). Payment factors predicted changing payment behaviour significantly (total effect c = 0.868, p < .001) and payment preference (path a = 0.869, p < .001). As can be seen from Table 8, when both predictors were entered into the model, payment preference still predicted changing payment behaviour (path b = 0.337, p < .001) while the effect of payment factors was reduced (from 0.868 to 0.576) but still significant (p < .001). The indirect effect was also significant (a × b = 0.293; Sobel z = 4.68, p < .001) and explained 33.7% of the total effect. Therefore, payment preference partially mediated the relationship between payment factors and changing payment behaviour, and H0-4 was rejected.

Table 8. Mediation analysis (Baron–Kenny steps and Sobel test)

Step / path	B	Std. Error	p-value	R^2
Step 1: PF → CPB (total effect, c)	0.868	0.048	< .001	0.742
Step 2: PF → PP (path a)	0.869	0.060	< .001	0.648
Step 3: PP → CPB, controlling PF (path b)	0.337	0.068	< .001	0.788
Step 3: PF → CPB, controlling PP (direct effect, c')	0.576	0.074	< .001	0.788
Indirect effect (a × b)	0.293	0.063	z = 4.68; p < .001	–

PF = Payment Factors; PP = Payment Preference; CPB = Changing Payment Behaviour. Share of total effect mediated = 33.7%. Result: Partial mediation.

8. Influence of age and education: regression (H0-5)

A regression of changing payment behaviour on age group and education dummies (reference category: 18–25 years old and up to Diploma) was not significant, $F(3, 112) = 0.35$, $p = .792$; $R^2 = 0.009$, and none of the dummy predictors was significant (Table 9). Income was excluded from the regression analysis because 44 respondents (37.9%) did not disclose their income; income was tested in chi-square and ANOVA. Given the results of the chi-square and ANOVA tests and the regression, there is no basis for rejecting the null hypothesis that age, income, and education have no effect on payment choice and behaviour in this sample.

Table 9. Regression of changing payment behaviour on age and education

Predictor	B	Std. Error	β	t	p-value
Intercept (18–25, up to Diploma)	4.200	0.218	–	19.27	< .001
Age 26–35 (vs 18–25)	0.064	0.351	0.017	0.18	.856
Undergraduate (vs up to Diploma)	-0.229	0.232	-0.160	-0.99	.327
Postgraduate (vs up to Diploma)	-0.169	0.252	-0.109	-0.67	.504

$R^2 = 0.009$, $F(3, 112) = 0.35$, $p = .792$, $n = 116$.

9. Summary of hypothesis testing

Table 10. Summary of hypothesis tests

Hypothesis	Test(s) applied	Key result	Decision
H0-1	Multiple regression (PP on convenience, security, speed)	$F = 69.97$, $p < .001$; $R^2 = 0.652$	Rejected
H0-2	Chi-square goodness-of-fit; one-way ANOVA	$\chi^2 = 36.33$, $p < .001$; ANOVA $F = 9.52$, $p < .001$	Rejected
H0-3	Simple regression; correlation	$F = 235.06$, $p < .001$; $r = 0.82$	Rejected
H0-4	Baron–Kenny steps; Sobel test	$z = 4.68$, $p < .001$; partial mediation	Rejected
H0-5	Chi-square (education, income, age); ANOVA; regression	All $p > .05$ (smallest $p = .264$)	Not rejected

Significance level: 5%. Full calculations are in the accompanying Excel workbook.

Discussion:

Adoption of UPI, with continued cash usage. While UPI dominated for both large and small-value transactions, almost a third of respondents continued to prefer cash. Respondents were significantly more likely to report increased use of UPI (over cash) than the reverse (Q14 = 4.19; Q13 = 4.10). This reflects the gradual transition towards a cashless economy as observed in the IMF report as well as in the study by Neha, Akshmeet and Shloka, and Rai (2025). It is also

in line with the findings by Sudiksha Shree et al. regarding the importance of cash in the current environment, where cash remains an option. The results therefore reflect a transition process rather than a binary shift.

Convenience, security and speed. All three factors were significant predictors of payment preference, with convenience driving the preference most strongly ($\beta = 0.398$). This corroborates the findings by Kumar & Sharma (2020) regarding the importance of convenience and quickness for digital-payment adoption, as well as those of Sudiksha Shree et al. on the role of convenience and efficiency. The role of security was also positive and significant, reflecting the emphasis on the prevention of online fraud in the study by Dahiphale et al. (2024) as well as the mediating role of perceived security in the study by Kumar & Sharma (2020). The factor was however reflected in agreement with the lowest scores of all statements on security influencing choice (Q18 = 3.38). This suggests that while security is an important consideration for most respondents, it is rarely a deciding factor in their day-to-day payment decisions. Finally, trust was not found to be a significant predictor in this study, possibly due to its conflation with the role of security.

Preference, behaviours and mediation. The role of preference in the context of payment methods was overwhelmingly strong, both in its association with changes in behaviours ($r = 0.82$) and in its capacity as a mediator (34%). The latter figure suggests that changes in stated preferences explain approximately a third of all changes in payment behaviours, with the remaining 66% reflecting either direct relationships or interactions too complex to be captured in this analysis. As a result of the design of this study, these results should be interpreted as an indication of relationships rather than proof of causality. Most respondents were still more likely to report changing behaviours as a result of their stated preferences rather than a direct result of their experiences with any particular method.

Demographics. The study did not find significant associations between age, income or education and either payment preferences or changes in behaviours. This contrasts with the findings by Sudiksha Shree et al. on the importance of age, gender and income in payment behaviours. This may however reflect the skew in the sample, which was overwhelmingly young (96.6% respondents were 18–25 years old) and highly-educated (91.4% were undergraduates or postgraduates). As a result, the observed variance was lower, and several subgroups (e.g. respondents who were 26–35 years old) were too small to be statistically significant. Another possible explanation reflects the tendency for respondents to believe that these factors did play a role in their behaviours, albeit to a limited extent. This was especially evident in their responses to the questions on the role of age (Q25 = 3.63) and income (Q26 = 3.87) as predictors of payment behaviours. These results should therefore be interpreted as evidence of tendencies rather than generalizability across the population.

Findings:

• **Objective 1**: Convenience, security and speed jointly account for 65.2% of variance in preference for payment. Convenience is the strongest factor followed by security and speed.

• **Objective 2**: UPI is preferred for making regular payments and for small payments by 56.0% and 49.1% of respondents compared to 33.6% and 36.2% for cash. UPI is also used more often (mean 3.93 against 3.43 for cash) and the preference differences are statistically significant.

• **Objective 3**: Preference for payment is strongly and significantly linked with change in payment behaviour ($r = 0.82$; $R^2 = 0.673$).

• **Objective 4**: Preference for payment acts as a partial mediator to the effect of payment factors on change in payment behaviour (indirect effect = 0.293, 33.7% of the total effect).

• **Objective 5**: Age, income and education do not exhibit any significant relationship with choice of payment or changing of payment behaviour in this sample.

• Respondents who prefer UPI report the largest change in payment behaviour (mean 4.23) whereas those who prefer cash report the least change (3.67).

Suggestions:

- **Retailers:** Offer UPI at every billing point, because speed and convenience drive preference, but keep cash acceptance, since about one-third of consumers still prefer it, especially for small-value purchases.

- **Payment providers and banks:** Compete on ease of use and transaction speed first, and make security visible (instant alerts, simple dispute handling), because security is significant but is not consciously used as a selection criterion by many users.

- **Policy makers and educators:** Continue digital-literacy and fraud-awareness programmes so that consumers who still rely on cash can move to digital payments with confidence.

- **Marketing and segmentation:** In this sample, preference rather than age, income or education separated consumers, so campaigns can focus on the payment experience (speed, convenience) rather than on narrow demographic targeting. This should be verified with a more varied sample.

Limitations and Scope for Further Research:

- The sample is a non-probability convenience sample, which is skewed towards young and educated respondents, and the results cannot be generalised to all retail consumers in India.
- The data are self-reported, cross-sectional, and thus the mediation and regression results should be interpreted in terms of association rather than causation.
- All items are measured using the same Likert scale, and some items have similar wording (e.g., importance items versus “influences my preference” items), and therefore, method variance and response styles could contribute to the observed relationships.
- 44 respondents (37.9%) failed to report their income, and some cells in the chi-square analysis have expected counts below five, particularly for the age groups; limiting the power of the analysis, as the number of respondents aged 26–35 and those with education up to Diploma is relatively low.
- Trust and ease of use were included within hypothesis H0-1 but were not measured as separate constructs; ease of use was captured by convenience items, and trust is not directly measured.
- Likert-scale items were recoded as interval data for the purposes of conducting regression and ANOVA analyses, which is a standard practice but nevertheless an assumption.

Future studies could aim to use a larger sample size that uses probability sampling to capture a more diverse pool of respondents (e.g., older consumers, those with lower levels of education, and those from rural areas) and specify trust and perceived risk as separate constructs and test the mediation model using structural equation modelling (SEM). It would also be valuable to assess the volume of transactions conducted using each of the payment methods and collect repeated measures from the same participants.

Conclusion:

According to the study results, the retail payment behaviour of the surveyed consumers shifts distinctly toward UPI, while the usage of cash remains considerable. Convenience, security, and speed are found to influence customer preference, with convenience being the most critical factor, while the transition from one method to another is associated with higher rates of preference. The payment method preference partly determines the translation of the factors into behaviour. In this regard, the study findings suggest that for retail players and payment providers, it is relevant to focus on the ease of use and visibility of digital payments, as well as the assurance of safety for cash transactions. Due to the restricted age and educational range of the sample, the present findings can be considered indicative, yet requiring further verification with a more diverse audience.

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