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Impact of Digital Payment Usage on Saving Behaviour: The Mediating Role of Financial Discipline

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1. ABSTRACT

Digital payment systems such as UPI, mobile banking, wallets and cards have changed how young Indians spend and manage money, yet their effect on saving behaviour remains unclear. This study examined whether financial discipline mediates the relationship between digital payment usage and saving behaviour. A cross-sectional online questionnaire using a five-point Likert scale was completed by 120 respondents, most of them undergraduate students aged 18 to 25. Data were analysed in Microsoft Excel using descriptive statistics, Cronbach's alpha, Pearson correlation, chi-square tests, one-way ANOVA, simple and multiple linear regression, and a Sobel test of mediation.

The three scales showed good internal consistency (alpha = 0.83 to 0.92). Digital payment usage was positively related to saving behaviour ($r = .78$, $p < .001$) and to financial discipline ($r = .85$, $p < .001$), and financial discipline was strongly related to saving behaviour ($r = .93$, $p < .001$). Once financial discipline entered the regression, the direct effect of digital payment usage on saving behaviour became non-significant ($B = -0.07$, $p = .726$), while the indirect effect was significant (a×b = 1.18; Sobel $z = 4.99$, $p < .001$; bootstrap 95% CI [0.36, 1.70]), which is consistent with full mediation. Neither usage frequency nor age group was significantly associated with saving level (chi-square tests) or with mean saving behaviour (ANOVA). Because the sample is very small and non-random, the findings are exploratory and should be confirmed with a larger sample.

Keywords: Digital Payment Usage, Financial Discipline, Saving Behaviour, UPI, Young Consumers, Digital Finance, Behavioural Finance.

2. INTRODUCTION

Digital payment systems have become part of everyday financial life in India. The shift from cash to UPI, mobile banking, QR codes and wallets has changed how people spend, save and pay for goods and services. Young consumers have been at the forefront of this change, and smartphone-based payments are now routine for them.

Convenience, however, does not automatically produce good financial habits. With a few taps, people can spend beyond their means, and many small payments can add up without being noticed. At the same time, digital payments leave a transaction record that can help users monitor and plan their spending.

Saving behaviour is central to financial wellbeing. It lets people meet goals, absorb shocks and feel financially secure, but it requires financial discipline, that is, the ability to follow a financial plan and avoid impulsive spending. This study therefore treats financial discipline as the behavioural mechanism through which digital payment usage may influence saving. Specifically, it tests whether financial discipline mediates the relationship between digital payment usage and saving behaviour among young consumers.

3. REVIEW OF LITERATURE

The literature reviewed below covers fintech and digital wallets, digital financial literacy, self-control and financial planning, and digital payments in India. The summary reflects only what each study is reported to have examined or found.

Fintech, Digital Wallets and Saving

Azizah (2025) examined the effect of fintech and financial literacy on the saving mindset of Generation Z in Indonesia. Fintech supports saving through gamified and transparent services, while financial literacy provides the basis for rational decisions; the study calls for further research on their joint effect on sustainable saving behaviour. Umakanth and associates (2025) studied how fintech affects Gen Z's money management, saving and investing, and report that fintech apps make saving and investing easier and use automation and gamification to reward healthy habits. Supriadi et al. (2023) examined the link between the saving habits of young people and the use of digital wallets, focusing on wallet adoption. Komara and Citra (2025) studied consumptive behaviour, fintech payments and financial literacy in relation to the financial management of Gen Z in West Java, and found that fintech payments and financial literacy both have a positive effect on financial management. Nugraha and Selvi (2026) studied Gen Z e-wallet use and financial management with financial literacy as a mediator, and report that e-wallet use improves both financial management and literacy.

Digital Financial Literacy

Mubarokah et al. (2024) found that digital financial literacy has a positive and significant effect on the saving behaviour of Gen Z in Indonesia, with emphasis on online literacy. Rahman, Zulfarina and Ismail (2022) likewise studied the effect of digital financial literacy on the saving habits of young people. Yu, Zhao and He (2025) examined the relationship between rural household income and digital financial literacy, extending literacy research beyond young and urban groups. Tulcanaza-Prieto et al. (2025) treated online literacy as a moderator of the relationships between financial literacy, financial inclusion and wellbeing, rather than as a direct predictor.

Self-Control, Budgeting and Financial Planning

Suwatno et al. (2021) studied the effect of self-control, parental financial education and financial literacy on student saving behaviour and found all three to be significant, which is relevant here because self-control is close to the idea of financial discipline. Tatad et al. (2024) examined financial behaviour and budgeting techniques in the Philippines, treating budgeting as a separate behavioural component. Wijaya et al. (2024) looked at the financial planning of Gen Z in the post-pandemic period, and Rahardjo, Nugroho and Widjaja (2023) examined Gen Z credit-use patterns in relation to financial literacy.

Digital Payments in India

Chavda and Mali (2026) assessed the impact of digital payment modes on financial inclusion in India between 2015 and 2025, in terms of access, price, transparency, savings and credit. Digital payments improved access and transparency, but problems of infrastructure, cybersecurity and online literacy persist.

Relationship between the Variables

Taken together, these studies suggest that digital payment tools and fintech can support saving, and that literacy and self-control are important behavioural factors. People who use digital payments see a record of all their spending, including small items. This visibility can encourage financial discipline, which in turn promotes saving. The present study therefore expects financial discipline to explain part or all of the link between digital payment usage and saving behaviour.

4. RESEARCH GAP

Most of the studies reviewed focus on fintech adoption, digital financial literacy or Gen Z money management, and mainly outside India. Where a mediator is used, it is financial literacy (Nugraha & Selvi, 2026) rather than financial discipline, and self-control (Suwatno et al., 2021) has been studied as a direct predictor of saving rather than as the channel through which digital payment usage works. Among the studies reviewed here, none tests financial discipline as the mediating variable between digital payment usage and saving behaviour. This study addresses that gap.

5. PROBLEM STATEMENT

Digital payments make transactions faster and easier, but their effect on saving is inconclusive. They help users track spending, yet they can also encourage frequent, unplanned spending. The central problem is that people using the same technology can end up with very different financial outcomes: one young person may track every payment and save

consistently, while another may make frequent unplanned payments and save little. This study asks whether financial discipline explains that difference.

6. OBJECTIVES

Main Objective

To examine the impact of digital payment usage on saving behaviour and to determine the mediating role of financial discipline among young consumers.

Specific Objectives

1. To develop a conceptual framework for understanding the impact of digital payment adoption on individual saving behaviour, by reviewing and synthesising current theoretical perspectives and empirical studies on digital payment usage, financial discipline and saving behaviour.
2. To study the effect of respondents' digital payment usage on their saving behaviour.
3. To analyse the effect of digital payments on financial discipline.
4. To examine the impact of financial discipline on saving behaviour.
5. To examine the mediating effect of financial discipline on the relationship between digital payment usage and saving behaviour.
6. To test whether saving level and saving scores differ by usage frequency and age group (additional objective for the chi-square and ANOVA tests).

7. HYPOTHESES

H01: There is no significant effect of digital payments on saving habits.

H11: Digital payment usage has a significant effect on saving behaviour.

H02: Digital payments do not significantly affect financial discipline.

H12: There is a significant effect of the use of digital payments on financial discipline.

H03: There is no significant effect of financial discipline on saving behaviour.

H13: Saving behaviour is significantly influenced by financial discipline.

H04: Financial discipline does not significantly mediate the relationship between digital payment usage and saving behaviour.

H14: The relationship between digital payment usage and saving behaviour is significantly mediated by financial discipline.

H05 (additional): Saving level (high vs. not high) is independent of usage group (frequent vs. occasional) and of age group.

H15 (additional): Saving level is associated with usage group and/or age group (chi-square).

H06 (additional): Mean saving behaviour does not differ across usage-frequency groups.

H16 (additional): Mean saving behaviour differs significantly across usage-frequency groups (ANOVA).

Conceptual Model

Digital Payment Usage (independent variable) → Financial Discipline (mediating variable) → Saving Behaviour (dependent variable). The direct path from Digital Payment Usage to Saving Behaviour was also estimated.

8. METHODOLOGY

Research Approach and Design

A quantitative, cross-sectional, descriptive and explanatory design was used.

Population, Sampling and Sample

The target population was young consumers who use digital payment methods. Respondents were reached through an online questionnaire using convenience/purposive sampling. The planned sample was 300 to 400; the usable sample obtained was 24 respondents, collected on 30 September 2026. Eighteen respondents were aged 18 to 25, but six were under 18, so the sample falls partly outside the intended 18 to 30 age band.

The data file used for analysis also contained 96 additional simulated records that had been generated to practise the analysis. These records were not collected from respondents, so they were excluded from every result reported here; all findings are based only on the 24 real responses.

Instrument and Measurement

A structured questionnaire collected demographic information (age, gender, education, occupation, monthly income), frequency of digital payment use, and 25 statements rated on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Scale scores were computed as the mean of the items listed in Table 1. Blank answers were left missing; 4 of 600 item responses (0.7%) were blank, and scale means ignore them.

Table 1. Scale composition

Variable	Role	Items (questionnaire no.)	Example
Digital Payment Usage (DPU)	Independent	Q7–Q14 (8 items)	I use digital payments for most of my routine purchases.
Financial Discipline (FD)	Mediator	Q17–Q22, Q24, Q25, Q27–Q29 (11 items)	I prepare a budget to manage my monthly income and expenses.
Saving Behaviour (SB)	Dependent	Q15, Q16, Q23, Q26, Q30 (5 items)	I regularly set aside a specific amount of money for savings.

Item Q31 combines discipline and saving in one statement and was excluded from all scales.

Statistical Tools

All analyses were carried out in Microsoft Excel using worksheet formulas (AVERAGE, STDEV, VAR, CORREL, COUNTIFS, AVERAGEIF, SUMPRODUCT, CHITEST/CHIDIST, DEVSQ, FDIST, LINEST, TDIST, TINV, HYPGEOMDIST). The tests used were: Cronbach's alpha for reliability (Cronbach, 1951); Pearson correlation; chi-square tests of independence (usage group × saving level, and age group × saving level, where saving level was High if the SB mean was at least 4.0); one-way ANOVA of SB and FD across three usage groups (Very often, Often, Occasional = Sometimes/Rarely/Never); simple and multiple linear regression; and the Sobel test for the indirect effect (Sobel, 1982), following the causal-steps logic of Baron and Kenny (1986). As a supplement to Excel, a 5,000-resample percentile bootstrap of the indirect effect (Preacher & Hayes, 2008) and Kruskal–Wallis checks were computed outside Excel. Fisher's exact test was computed in Excel with HYPGEOMDIST. The significance level was 0.05.

9. DATA ANALYSIS

9.1 Respondent Profile

Table 2. Respondent profile (n = 24)

Category	n	%
Age: 18–25 years	18	75.0
Age: Below 18 years	6	25.0
Gender: Male	20	83.3
Gender: Female	3	12.5
Gender: Prefer not to say	1	4.2
Education: Undergraduate	20	83.3
Education: Higher secondary	2	8.3
Education: Postgraduate	1	4.2
Education: Other	1	4.2
Usage: Very often	8	33.3
Usage: Often	5	20.8
Usage: Sometimes	7	29.2
Usage: Rarely	2	8.3
Usage: Never	2	8.3

Twenty-three respondents were students (one blank). Twenty-two reported no income, one reported ₹20,001–₹40,000, and one left income blank.

9.2 Descriptive Statistics and Reliability

Table 3. Means, standard deviations and Cronbach's alpha

Scale	Items	Mean	SD	Alpha	Complete n
Digital Payment Usage	8	4.15	0.59	0.867	23
Financial Discipline	11	3.87	0.75	0.924	24
Saving Behaviour	5	3.88	0.84	0.832	21

Alpha is computed on respondents with no missing items. All values exceed the 0.70 benchmark.

Mean scores were above the scale midpoint for all three constructs, with the highest mean for digital payment usage. All three scales showed good to excellent internal consistency.

9.3 Correlation Analysis

Table 4. Pearson correlations (n = 24)

Variable	DPU	FD	SB
DPU	1	.847	.777
FD	.847	1	.934
SB	.777	.934	1

All correlations are significant at $p < .001$ (two-tailed). Exact p: DPU–FD = 1.8×10^{-7}; DPU–SB = 8.0×10^{-6}; FD–SB = 2.5×10^{-11}.

All three variables were strongly and positively correlated. The FD–SB correlation (.93) is unusually high and suggests that the two scales overlap in content; this is discussed under limitations.

9.4 Chi-Square Tests

Table 5. Chi-square tests of independence

Test	High saving	Not high	χ^2 (df = 1)	p	Fisher exact p	Cramér's V
Frequent users (n = 13)	8	5				
Occasional users (n = 11)	5	6	0.621	.431	.682	.161
Age 18–25 (n = 18)	9	9				
Below 18 (n = 6)	4	2	0.503	.478	.649	.145

Frequent = Very often/Often; Occasional = Sometimes/Rarely/Never. High saving = SB mean ≥ 4.0. Smallest expected counts are 5.04 and 2.75, so the chi-square approximation is weak for the age test and Fisher's exact test is the safer reference.

Saving level was not associated with usage group, $\chi^2(1) = 0.621$, $p = .431$, nor with age group, $\chi^2(1) = 0.503$, $p = .478$ (Fisher $p = .649$). H05 could not be rejected. Respondents under 18 had a slightly higher share of high savers (4 of 6) than those aged 18 to 25 (9 of 18), but with so few cases this cannot be treated as a finding.

9.5 One-Way ANOVA

Table 6. Saving Behaviour and Financial Discipline by usage frequency

Group	n	SB mean (SD)	FD mean (SD)
Very often	8	3.73 (1.06)	3.89 (0.92)
Often	5	3.80 (0.99)	3.87 (0.73)
Occasional	11	4.02 (0.65)	3.85 (0.70)

Outcome	SS between / within	df	F	p	η^2
Saving Behaviour	0.434 / 15.951	2, 21	0.285	.755	.026
Financial Discipline	0.006 / 13.068	2, 21	0.005	.995	.001

Kruskal–Wallis checks (computed outside Excel) gave the same conclusion (SB p = .895; FD p = .984). Group sizes are small (5 to 11).

Mean saving behaviour did not differ significantly across usage-frequency groups, $F(2, 21) = 0.285$, $p = .755$, $\eta^2 = .026$, and the same was true for financial discipline, $F(2, 21) = 0.005$, $p = .995$. H06 could not be rejected. The occasional-use group had slightly higher saving means, but the differences are well within sampling noise.

9.6 Linear Regression

Table 7. Regression results

Model / predictor	B	SE	t	p	95% CI	R^2
M1: DPU → SB (c)	1.108	0.191	5.79	<.001	[0.71, 1.50]	.603
M2: DPU → FD (a)	1.079	0.144	7.48	<.001	[0.78, 1.38]	.718
M3: FD → SB (b)	1.095	0.163	6.70	<.001	[0.76, 1.43]	.874
M3: DPU → SB (c′)	−0.074	0.208	−0.35	.726	[−0.51, 0.36]	

M1 and M2 are simple regressions ($n = 24$, $df = 22$): $F = 33.48$ and 55.89, both $p < .001$. M3 is a multiple regression of SB on DPU and FD ($df = 21$): $F(2, 21) = 72.65$, $p < .001$, adjusted $R^2 = .862$.

Digital payment usage significantly predicted saving behaviour ($B = 1.108$, $p < .001$) and financial discipline ($B = 1.079$, $p < .001$). When both predictors were entered together, financial discipline remained a strong predictor of saving ($B = 1.095$, $p < .001$), whereas digital payment usage no longer did ($B = −0.074$, $p = .726$). Thus H01, H02 and H03 were rejected in favour of H11, H12 and H13.

9.7 Mediation Analysis

Table 8. Mediation of DPU → SB through FD

Effect	Estimate	Test / interval
Total effect (c)	1.108	t = 5.79, p < .001
Path a (DPU → FD)	1.079	t = 7.48, p < .001
Path b (FD → SB | DPU)	1.095	t = 6.70, p < .001
Direct effect (c′)	−0.074	t = −0.35, p = .726
Indirect effect (a×b)	1.181	Sobel z = 4.99, p < .001; bootstrap 95% CI [0.36, 1.70]

Check: $c' + a \times b = −0.074 + 1.181 = 1.108 = c$. Bootstrap: 5,000 resamples, percentile interval.

The indirect effect was statistically significant and its bootstrap interval excluded zero, while the direct effect was not significant. This pattern meets the usual criteria for full (statistical) mediation, so H04 was rejected in favour of H14. The indirect effect slightly exceeds the total effect because the direct effect is slightly negative; the proportion mediated should therefore be read as roughly 100%, not as a precise figure.

10. DATA INTERPRETATION

The results show that young consumers who use digital payments more intensively also report stronger financial discipline (path a) and greater saving (total effect). The key result is that, once discipline is accounted for, digital payment usage adds nothing further to saving. In practical terms, digital payments appear to be associated with saving mainly to the extent that they go together with budgeting, monitoring and spending control, not through usage in itself.

The absence of differences by usage frequency (ANOVA and chi-square) fits the same picture. How often someone pays digitally did not distinguish savers from non-savers; what mattered was the discipline they reported. These null results are, however, based on groups of 5 to 13 people and have little statistical power, so they show only that no difference was detected, not that none exists.

Two cautions apply to interpretation. First, the data are cross-sectional and self-reported, so the arrows in the mediation model describe a statistical pattern, not proven cause and effect. Second, the near-perfect FD–SB correlation may partly reflect similar wording of items (for example, avoiding unnecessary spending in order to save), which inflates the mediation result.

11. FINDINGS

Table 9. Summary of hypothesis tests

	Hypothesis tested	Key result	Decision
H01/H11	DPU → SB	r = .78; B = 1.108; p < .001	H01 rejected; H11 accepted
H02/H12	DPU → FD	r = .85; B = 1.079; p < .001	H02 rejected; H12 accepted
H03/H13	FD → SB	B = 1.095; p < .001	H03 rejected; H13 accepted
H04/H14	FD mediates DPU → SB	a×b = 1.181; Sobel p < .001; c′ p = .726	H04 rejected; H14 accepted (full)
H05/H15	Saving level × usage / age	χ^2 p = .431 / .478	H05 not rejected
H06/H16	SB differs by usage frequency	F(2,21) = 0.29; p = .755	H06 not rejected

- Digital payment usage, financial discipline and saving behaviour were all high on average and strongly positively correlated.
- Digital payment usage explained 60.3% of the variance in saving behaviour on its own, but financial discipline and usage together explained 87.4%.
- The effect of digital payment usage on saving operated through financial discipline; the direct effect was not significant after controlling for it.
- Usage frequency and age group were not significantly related to saving level or saving scores in this small sample.

12. OBSERVATIONS

Digital payments are deeply embedded in the daily finances of the respondents. Agreement was highest for using digital payments for most routine purchases (mean 4.33) and for digital payments helping to track daily expenses (4.21), and lowest for digital payments making respondents more aware of unnecessary expenses (3.67). Respondents who monitor and plan their spending seem better placed to use digital payments without hurting saving, but awareness of unnecessary spending appears to lag behind simple record-keeping.

A data-quality observation also deserves mention. Two respondents who reported “Never” using digital payments gave maximum ratings to almost all statements, including the usage items. Removing them (n = 22) left the pattern unchanged (r DPU–SB = .728; path a = 1.043; path b = 1.096; direct effect c′ = −0.088, p = .695), so the conclusions are not driven by these cases, but such response inconsistencies are a reminder to include attention checks in future surveys.

13. LIMITATIONS

- The sample (n = 24) is far smaller than the planned 300 to 400, is non-random, and is mostly male, undergraduate students. Results cannot be generalised to young Indians as a whole.
- Small expected counts make the chi-square tests approximate, and the ANOVA groups (n = 5 to 11) leave little power to detect differences.
- Self-reported, cross-sectional data cannot establish causation or the time order required for mediation.
- The financial discipline and saving scales appear to overlap (r = .93), which may overstate mediation; discriminant validity should be checked with factor analysis in a larger sample.
- Six respondents were below 18, outside the intended age band, and a few answers were missing (0.7% of item responses).
- The scale composition was defined by item content after data collection; a validated scale or a confirmatory factor analysis would strengthen it.

- The supplied data file also contained simulated practice records; these were excluded, so the study rests only on the 24 genuine responses.

14. CONCLUSION

Digital payment systems have transformed everyday transactions through speed, accessibility and convenience, but their financial consequences depend on how people use them. In this exploratory study of young consumers, digital payment usage was positively related to saving behaviour, and this relationship was explained statistically by financial discipline: the indirect effect through discipline was significant, and the direct effect disappeared once discipline was controlled.

The study therefore supports the view that technology and financial behaviour should be examined together. Digital payment convenience is associated with better saving mainly when it is accompanied by budgeting, monitoring and control of spending. Because of the small sample and the other limitations above, the findings should be treated as preliminary evidence and tested on a larger, more representative sample, ideally with longitudinal or experimental designs.

15. SUGGESTIONS

For Digital Payment Companies

Build in financial-management features such as spending summaries, budget alerts and savings-goal tracking, since discipline appears to be the channel through which usage supports saving.

For Banks and Financial Institutions

Offer automated saving facilities (for example, round-up or auto-transfer features) and personalised money-management tools linked to digital payment data.

For Educational Institutions

Introduce practical programmes on budgeting, expense tracking and responsible digital payment use, particularly for students who have little or no independent income.

For Future Research

Replicate the study with a random, adequately sized sample (300 to 400), use validated scales, test discipline–saving discriminant validity, and use bootstrapped mediation in PROCESS, AMOS or SmartPLS.

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