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## The Frictionless Paradox: Evaluating the Effect of Automated Digital Banking Payments (UPI Autopay & CBDC) on SIP Retention and Investor Engagement

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**ABSTRACT:** This research provides a critical analysis of the paradox of frictionless investment ecosystem in India, where the ease of transactions can enhance the continuity of Systematic Investment Plan (SIP) and ease of engagement is maximized by presenting salient information, providing user control, building trust, and increasing financial literacy. The study design is quantitative secondary data that is solely external public evidences. The empirical base includes the SEBI Investor Survey 2025, Reserve Bank of India's nationwide digital-payment survey and retail CBDC statistics, AMFI and NSE/CMIE SIP series, CAMSPay UPI AutoPay operating disclosures and NPCI's UPI AutoPay framework. The external datasets are used to capture the following aspects of the household investment behaviour, consumer digital-payment adoption, payment-platform activity, SIP account dynamics and e₹ ecosystem expansion. Analysis is based on descriptive statistics, growth rates, compound annual growth rates, lifecycle ratios and cross source triangulation. The number of outstanding SIP accounts grew by 98.1% and 18.6% annually to reach 10.5 crore in FY26, as compared to 5.3 crore in FY22, and UPI AutoPay emerged as one of the key SIP mandate routes in CAMSPay's mutual-fund payment network (NSE, 2026; CAMS, 2024). RBI evidence indicates that 86.1% of consumers who tried digital payments have adopted them, with ease and convenience being the top driver for their adoption, while SEBI evidence suggests that webinars and email updates are the preferred channels for active investors to engage with digital payments (RBI, 2024b; SEBI, 2026). The results validate a two-path approach: a seamless execution helps to reinforce retention, while a well-designed payment trigger and trusted digital points help reinforce engagement. CBDC/e₹ is assessed as an adoption-ready pathway with increasing infrastructure and UPI-QR interoperability.

## 1. INTRODUCTION

The financial system has built up a high-frequency digital payment layer, and the fast-growing mutual-fund SIP segment. UPI is the core retail-payment innovation in this transformation, and UPI AutoPay takes this core infrastructure into recurring mandates, such as for mutual funds (NPCI, n.d.). The Reserve Bank of India has also increased the number of banks and cities in the Digital Rupee (e₹-R) pilot from the initial four and four, respectively, to a wider banking and merchant ecosystem, providing a forward-looking payment option in digital finance for the future (RBI, 2022b; RBI, 2024a).

SIPs break down long-term investment objectives into regular investments, and thus rely on the consistency of the investment. SIPs are defined as fixed periodic investments, which can be done via standing bank instructions and, as per AMFI statistics, monthly SIP investments of ₹31,961 crore highlight how important it is to have a continuity of payments now (AMFI, 2026). The payment mechanism is thus an operational link between intention and actual behaviour of investors.

The study extends the idea of “frictionless paradox”. Consistency is enhanced by reducing payment friction, which is achieved through reduced repeated action costs of recurring debits, while highly automated finance is enhanced by moments of visibility that ensure investor engagement and information. The dual effect has a solid theoretical foundation in behavioural research on defaults, automatic enrolment, payment salience and mental accounting (Madrian & Shea, 2000; Beshears et al., 2009; Prelec & Loewenstein, 1998; Soman, 2001).

This article examines that paradox using data from external sources (regulatory, market and industry sources) that have been published. The evidence is structured along the dimensions of transaction ease, SIP retention, payment salience, investor engagement, trust, control, financial literacy and CBDC adoption readiness. The resulting design brings together evidence of what happens at the market level with evidence from households' surveys and existing behavioural theory.

## 2. BACKGROUND OF THE STUDY

Digitalisation of Indian payments has evolved from interoperable systems, mobile interfaces to a massive acceptance infrastructure. UPI is cited as one of the key technologies behind the retail payment transformation in RBI's Report on Currency and Finance 2023-24, which also presents the results of a survey conducted by the RBI of about 90,000 merchants and consumers across the country, both in rural and urban areas (RBI, 2024b). Within the consumer sample, 41.9% had tried a digital payment mode, 36.1% were current users and the conversion from trial to current usage reached 86.1%.

UPI AutoPay streamlines the recurring payment instructions in the UPI ecosystem. NPCI identifies mutual funds as one of the use cases it's working on and offers a host of mandate-management options, including modify, revoke, pause, unpause, as well as a pre-debit notification 24 hours prior to execution (NPCI, n.d.). These characteristics exemplify the two dimensions of the conceptual framework of this study: automation and control and salience.

There is evidence in the industry that this reoccurring rail is being used more. In FY24, CAMSPay captured over 50% share in the payment ecosystem for mutual funds, 1.4 million-plus UPI AutoPay mandate registrations per month, and 3.6 lakh SIP mandate registration associated UPI mandates per month (CAMS, 2024). According to its disclosures for FY25, it has registered over 1.01 million UPI AutoPay mandates monthly and processed over 65.58 million SIP transactions so far, with ₹107.25 billion worth of AutoPay transaction value processed (CAMS, 2025). In a payment network accounting for over 50% of the ecosystem (CAMS, 2026), Q4FY26 operating indicators recorded 3.2 million-plus UPI AutoPay mandate registrations for the quarter.

It is the sovereign digital-money dimension that is added with the e₹ pathway. The RBI Concept Note introduces CBDC as central bank money in digital form and explores the retail and wholesale architectures (RBI, 2022a). The retail pilot started in December 2022 and by June 2024, 50 lakh users and

4.2 lakh merchants were using the pilot (RBI, 2024a; RBI, 2024b). At the present time, the RBI public CBDC page has 19 banks that are participating and two non-bank wallets that are ready for future retail use cases (RBI, 2026).

## 3. PROBLEM STATEMENT

The growing number of SIPs and digital-payment platforms in India is posing a research challenge: how does the automation of recurring payments ensure continuity of investment without reducing the investor's focus on purpose? The operational value of automation is in the reliable repeatability of execution, and the behavioural value of engagement is in the timely information, visible controls,

education and trust. It's not as if UPI AutoPay doesn't already have a mutual-fund mandate rail; it is e₹ that provides an adoption-readiness and infrastructure path in its pilot ecosystem. The research problem thus focuses on the assessment of the alignment of these complementary developments in digital payment with the SIP retention and investor engagement of the externally published datasets.

## 4. RESEARCH OBJECTIVES

- To explore the impact of UPI AutoPay and CBDC payment readiness on SIP retention.
- To research the effect of automated payments on investor involvement.
- To gain insight into investors' preference of automated digital payment methods.
- To analyze if payment automation can enhance SIP continuity and facilitate timely investment implementation.
- To determine the factors that impact investor trust and acceptance of UPI AutoPay and CBDC for SIP related use cases.
- To compare the investor engagement mechanisms of automated and traditional SIP payment method.

## 5. RESEARCH QUESTIONS

1. How automated digital-payment infrastructure fits in with SIP retention and continuity in India?
2. Which of the following features of UPI AutoPay contribute to the ease of transactions, reliability of payments, and investor control?
3. How is the e₹ pilot helping India to be ready for the adoption of CBDC for future recurring investment applications?
4. What digital engagement channels and payment salience cues are helping to keep investors engaged?
5. What are the relationships between trust, control and digital financial literacy with acceptance of automated payment methods?
6. What does the combination of external payment-platform, SIP-system and investor-survey evidence reveal?

## 6. LITERATURE REVIEW

### 6.1 Digital Banking and Automated Payments

Perceived usefulness and perceived ease of use have been established as key factors in the technology-acceptance literature and are among the key factors that influence adoption (Davis, 1989). The UTAUT framework is extended by UTAUT2 to include the additional factors of habit, hedonic motivation and price value (Venkatesh et al., 2012) and UTAUT is extended by performance expectancy, effort expectancy, social influence and facilitating conditions (Venkatesh et al., 2003) to address consumer technology. These constructs are directly applicable to recurring banking payments because a one-time adoption decision can turn into a habit if it is executed reliably, and if the effort required for the payment is low. A complementary view is provided by behavioural research. Automatic enrolment has lasting impacts since defaults lessen the need for repeated decision making (Madrian & Shea, 2000; Beshears et al., 2009). Thaler and Benartzi (2004) also demonstrate that well-designed commitment devices enhance saving over time. These views combine to make automated payment mandates a form of choice architecture in financial processes.

### 6.2 UPI and UPI AutoPay

The performance, trust, attitude and behavioural intention are reflected on UPI adoption in India. Razi-ur-Rahim et al. (2024) report high explanatory power for the use of UPI with 894 urban UPI users, and identify performance expectancy and trust-related attitudes as significant mechanisms of adoption. This evidence backs the current framework's inclusion of transaction ease and trust.

UPI AutoPay is a new feature that takes UPI beyond one-time payments to recurring mandates. NPCI's product design features a number of features such as mutual funds, scheduling payments, changing mandates, pausing and revoking, and notifying customers of pre-debits (NPCI, n.d.). The operating disclosures show that the UPI AutoPay has been widely adopted for the processing of mutual funds payments and the rail is one of the preferred modes of mandate registration, as per CAMS (2024) data for FY24.

## 6.3 Central Bank Digital Currency (CBDC)

The design research of the CBDC highlights the need for both settlement assurance by the central bank and distribution and user-facing services by the private sector. The retail CBDC architecture is outlined by Auer and Böhme (2020), who highlight the operational efficiency, resilience, privacy and intermediary roles that must be balanced, and by Auer et al. (2020), which detail the institutional and technological motivators for global CBDC development.

Indian adoption studies point to trust and value perceived. Trust is cited as one of the major gaps between perceived risks, perceived benefits and willingness to adopt the Digital Rupee by Gupta et al. (2023). Kaur et al. (2025) have extended UTAUT for Indian households and added trust, security and attitude in CBDC usage intentions. The same is observed by Keshav and Sinha (2026) who find that effort expectancy, merchant acceptance, regulatory environment, attitude and trust in the central bank are factors that affect the intention of using a CBDC. The pre indicates framework is supported by these studies, which indicate that trust, control and digital financial literacy are contextual variables that should be included in the framework.

## 6.4 Systematic Investment Plans(SIPs)

SIPs are designed to implement disciplined periodic investing by making regular investments. According to AMFI (2026), SIP is a fixed periodic investment plan that is backed by standing debit instructions. It's similar to a commitment technology, which is a long-term investment decision broken down into a series of planned, smaller transactions.

The more important the SIP base becomes, the more relevant automated execution becomes. According to NSE's Market Pulse (April 2026) based on CMIE Economic Outlook and NSE EPR data, the number of outstanding SIP accounts is projected to rise from 5.3 crore in FY22 to 10.5 crore by FY26

(NSE, 2026). This growth increases the importance of the economic benefits of dependable mandate execution, payment reminders and lifecycle controls.

## 6.5 SIP Retention and Investor Behaviour

Household finance research has acknowledged that the success of using available products and decision structures is a key determinant of financial outcomes (Campbell, 2006). The literature on default and commitment suggests that automation may help to persist by decreasing the frequency of required actions (Madrian & Shea, 2000; Thaler & Benartzi, 2004). The same applies to SIPs too, a mandate ensures that your SIP investments are scheduled.

A second dimension of behaviour is added by payment salience. Prelec and Loewenstein (1998) provide an explanation of the concept of mental accounting and its relationship to payment and consumption or saving decisions. Payment mechanisms have been found to affect recall by Soman (2001) and the psychological immediacy of payment by Srivastava and Raghurir (2008), and payment form and coupling have been shown to affect behaviour by Raghurir and Srivastava (2008). Delgado Fuentealba et al. (2021) also show that automated bill payments can cause a change in attention patterns. This literature encourages a design that is seamless in execution, and has a pre-debit level of visibility and periodic goal review to keep investors engaged in the investment process.

## 6.6 Investor engagement in Digital Finance

Investor engagement involves monitoring, learning, goal review, informed control and willingness to continue on financial platforms. Financial Literacy is a critical foundation. Lusardi and Mitchell (2014) demonstrate that financial literacy influences economic decision-making, and van Rooij et al. (2011) find a connection between financial literacy and participation in the stock market. The results corroborate the contribution of the digital financial literacy in the conceptual framework.

The survey results from India substantiate the significance of digital engagement channels. According to the SEBI Investor Survey 2025, the active investors are more inclined towards webinars and email updates, whereas the general investor segment is more inclined towards social media and mobile apps for investor education (SEBI, 2026). The survey also reveals that ease and convenience are key drivers for digital payments adoption, while the users who are trying digital payments have a high rate of continued usage (RBI, 2024b).

## 6.7 Review of Previous Studies

| Study                   | Focus               | Core insight                                                                                              | Relevance to this study                  |
|-------------------------|---------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------|
| Davis (1989)            | TAM                 | Perceived usefulness and ease of use shape technology acceptance.                                         | Supports transaction-ease construct.     |
| Venkatesh et al. (2003) | UTAUT               | Performance expectancy, effort expectancy, social influence and facilitating conditions explain adoption. | Supports automated-payment acceptance.   |
| Venkatesh et al. (2012) | UTAUT2              | Habit and consumer-context factors extend technology-use explanation.                                     | Supports recurring-use persistence.      |
| Madrian & Shea (2000)   | Automatic enrolment | Automatic enrolment substantially increases saving-plan participation.                                    | Supports automation-retention mechanism. |

| Study                            | Focus                   | Core insight                                                                                        | Relevance to this study                    |
|----------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------|
| Beshears et al. (2009)           | Defaults and saving     | Defaults influence participation, contribution and allocation outcomes.                             | Supports recurring mandate design.         |
| Thaler & Benartzi (2004)         | Commitment saving       | Pre-commitment structures can strengthen saving behaviour.                                          | Supports SIP continuity logic.             |
| Prelec & Loewenstein (1998)      | Mental accounting       | Payment coupling affects the mental experience of spending and saving.                              | Supports payment salience.                 |
| Soman (2001)                     | Payment mechanism       | Rehearsal and immediacy influence payment recall and behaviour.                                     | Supports pre-debit cues.                   |
| Raghubir & Srivastava (2008)     | Payment coupling        | Payment form and coupling shape consumer behaviour.                                                 | Supports salience pathway.                 |
| Delgado Fuentealba et al. (2021) | Automatic bill payments | Automation changes attention and household financial behaviour.                                     | Motivates purposeful investor touchpoints. |
| Campbell (2006)                  | Household finance       | Household outcomes reflect product use, knowledge and decision constraints.                         | Supports investor-behaviour framing.       |
| Lusardi & Mitchell (2014)        | Financial literacy      | Financial knowledge improves economic decision quality.                                             | Supports literacy moderator.               |
| van Rooij et al. (2011)          | Financial participation | Financial literacy is associated with market participation.                                         | Supports engagement and participation.     |
| Razi-ur-Rahim et al. (2024)      | UPI adoption in India   | Performance expectancy and trust-linked attitudes explain UPI use behaviour.                        | Supports UPI acceptance pathway.           |
| Gupta et al. (2023)              | Digital Rupee adoption  | Trust links perceived benefits and adoption willingness.                                            | Supports CBDC trust pathway.               |
| Kaur et al. (2025)               | Indian CBDC intentions  | Trust, security and attitude enrich UTAUT-based CBDC intention.                                     | Supports ₹ readiness variables.            |
| Keshav & Sinha (2026)            | Indian CBDC adoption    | Effort expectancy, merchant acceptance, regulation, attitude and trust contribute to use intention. | Supports current CBDC readiness framing.   |

**Source note:** Peer-reviewed studies cited in the reference list. The table synthesises study-level findings in relation to the conceptual framework.

## 7. RESEARCH GAP

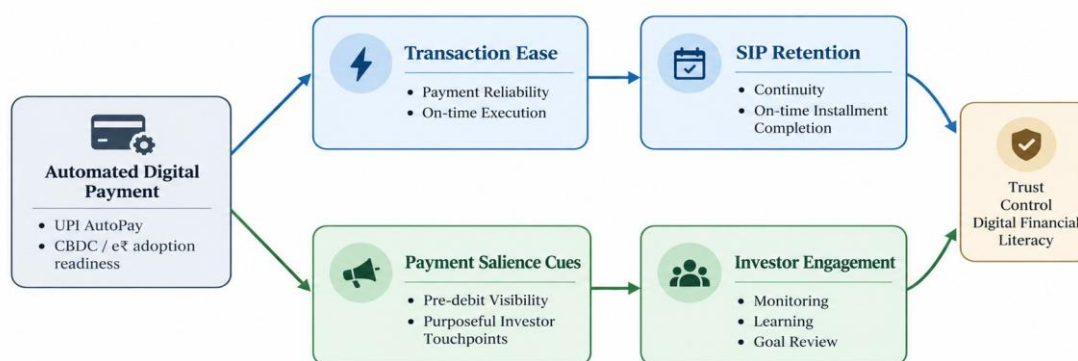
There is ample existing research that can provide evidence on technology acceptance, automatic enrolment, payment salience, financial literacy, and UPI adoption and CBDC intention. Industry and regulatory sources separately report scale of UPI AutoPay, dynamics of SIP lifecycle, digital-payment behaviour and e₹ pilot expansion. Having a single empirical treatment that encompasses these evidence streams around SIP retention and engagement of investors is particularly useful for the Indian market.

This study will leverage on that opportunity using a multi-source approach. It assesses UPI AutoPay as a functioning recurring payment system and CBDC/e₹ as an adoption-ready pathway and triangulates these payment indicators with the national survey data on digital usage and investor engagement, and with the SIP system statistics over time.

## 8. CONCEPTUAL GAP

The conceptual framework is a division of two complementary channels. The execution channel is from automated digital payment to ease of the transaction to SIP retention. The engagement channel is automated digital payment to payment salience cues to investor engagement. Both outcomes are enhanced through trust, control and digital financial literacy. It is based on TAM/UTAUT, behavioural default theory, payment-salience research and financial-literacy research (Venkatesh et al., 2003; Beshears et al., 2009; Soman, 2001; Davis, 1989; Lusardi & Mitchell, 2014).

### Conceptual Framework: The Frictionless Paradox



*Seamless execution supports retention; purposeful engagement cues strengthen investor attention.*

**Figure 1.** Conceptual framework: The Frictionless Paradox. The upper pathway represents seamless execution and SIP retention; the lower pathway represents purposeful salience and investor engagement.

## 9. RESEARCH METHODOLOGY

### 9.1 Research Design

This study has a quantitative secondary data research design. All of the empirical evidence is from external public data sources, regulator surveys, industry statistical series and published operating disclosures. The design integrates cross-sectional household data and longitudinal market-system data to allow for the assessment of the behavioural, payment and SIP-retention aspects in one analytical framework.

### 9.2 Research Approach

Deductive and triangulated method is used. Directional hypotheses are derived from established technology-acceptance and behavioural-finance theories, and evaluated using convergent evidence from separate, external sources. Cross-source

consistency is given the highest priority as the main evidentiary criterion, as the datasets are at complementary levels, namely household, consumer, payment platform, SIP system and CBDC ecosystem.

## 9.3 Population and sample

| External source                       | Sample / observation base                                             | Coverage                                                                                | Role in study                                                        |
|---------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| SEBI Investor Survey 2025             | 91,950 households in Listing Survey; 53,357 households in Main Survey | 400 towns and 1,000 villages; all-India investor awareness, participation and behaviour | Respondent profile and investor engagement                           |
| RBI nationwide digital-payment survey | Approximately 90,000 merchants and consumers                          | Rural and urban participants across all States and Union Territories; 2022              | Digital-payment adoption, ease, continued usage and trust experience |
| NSE/CMIE SIP series                   | Five fiscal years: FY22-FY26                                          | New, discontinued and outstanding SIP accounts                                          | SIP retention and lifecycle analysis                                 |
| AMFI SIP statistics                   | Monthly and fiscal-year industry statistics                           | Mutual-fund SIP contribution and SIP operating definition                               | SIP scale and continuity context                                     |
| CAMSPay disclosures                   | FY23-FY26 operating disclosures                                       | UPI AutoPay mandates, SIP processing and mutual-fund payment network metrics            | UPI AutoPay usage and payment automation                             |
| RBI e₹ sources                        | Dec 2022-2026 pilot milestones                                        | Banks, locations, users, merchants, QR interoperability and wallet ecosystem            | CBDC awareness and adoption readiness                                |

**Source note:** SEBI (2026); RBI (2024b); NSE (2026); AMFI (2026); CAMS (2023, 2024, 2025, 2026); RBI (2022b, 2024a, 2026).

## 9.4 Sampling Method

The study uses purposive source selection of external data sets that are official and high coverage and directly represent the constructs in the research title. Regulator publications, industry association statistics, exchange/market-research series and operating disclosures (audited or annual report) are preferred. In each source, the published sampling framework is maintained. SEBI adopts a stratified multi-stage household design for national representativeness while RBI's digital-payment survey adopts proportional rural-urban and geographic representation (SEBI, 2026; RBI, 2024b).

## 9.5 Data Collection

Data were gathered from publicly available tables, survey reports, official webpages and annual report disclosures. The extraction period is from all the evidence available at this moment (September 2026). All observations that were removed were documented using source, period, unit, construct and interpretation. Derived metrics like growth, compound annual growth rate, net SIP additions and discontinued-to-new SIP ratio are directly calculated from the externally published values.

## 9.6 Research Instrument

A research instrument is used in the form of structured secondary-data extraction matrix. The matrix has five columns: Source; Reporting period; Construct; Original published metric; Unit of measurement; and Analytical use. This is a structure that maintains source definitions and allows for consistent comparisons across household surveys, indicators from payment platforms and SIP-system time series.

## 9.7 Variables of the Study

| Variable                  | Operational indicators                                                           | External evidence |
|---------------------------|----------------------------------------------------------------------------------|-------------------|
| Automated digital payment | UPI AutoPay mandate activity; recurring-payment features; e₹ ecosystem readiness | CAMS; NPCI; RBI   |

| Variable                   | Operational indicators                                                                        | External evidence                                           |
|----------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| Transaction ease           | Ease/convenience, smooth-use experience, mandate control and pre-debit visibility             | RBI; NPCI                                                   |
| SIP retention              | Outstanding SIP accounts, new SIPs, discontinued SIPs, net additions, continuity ratios       | NSE/CMIE; AMFI                                              |
| Investor engagement        | Active/dormant status, digital education-channel preferences, digital-payment continued usage | SEBI; RBI                                                   |
| Trust and control          | Fraud-free user experience; pause/revoke controls; trust-based adoption evidence              | RBI; NPCI; Gupta et al. (2023); Razi-ur-Rahim et al. (2024) |
| Digital financial literacy | Investor education usefulness and financial-literacy literature                               | SEBI; Lusardi & Mitchell (2014); van Rooij et al. (2011)    |
| CBDC adoption readiness    | Participating banks, locations, users, merchants, UPI-QR interoperability                     | RBI                                                         |

## 9.8 Data Analysis Techniques

Descriptive analysis provides a summary of the proportions and operating indicators from the external survey. The following methods are used to evaluate the data from the SIPs: Year-to-year changes, cumulative growth, compound annual growth rate (CAGR), net additions (new SIPs - discontinued SIPs), and the discontinued-to-new SIP ratio. The adoption readiness is measured by the number of institutions participating and milestones being reached by users/merchants.

Cross-source triangulation is the linkage of payment automation indicators and SIP retention and investor-engagement indicators. Hypotheses are categorized based on external evidence and theory in terms of direction of convergence. This method allows to interpret the frictionless paradox at an ecosystem level and gives a solid ground for future investor-level linked data studies.

## 10. HYPOTHESIS DEVELOPMENT

| Hypothesis | Directional statement                                                                                       | Theoretical / empirical basis                                           |
|------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| H1         | Greater adoption of automated digital payment mandates aligns positively with SIP continuity and retention. | Automatic enrolment/default literature; UPI AutoPay operating evidence. |
| H2         | Transaction ease, payment reliability and on-time execution strengthen SIP retention.                       | TAM/UTAUT; RBI convenience evidence; NPCI AutoPay design.               |
| H3         | Pre-debit visibility and purposeful digital touchpoints strengthen                                          | Payment-salience research; SEBI channel                                 |

|    |                                                                                                                           |                                                                             |
|----|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
|    | investor engagement.                                                                                                      | preferences; NPCI pre-debit design.                                         |
| H4 | Trust and user control strengthen acceptance of automated payment methods.                                                | UPI/CBDC adoption literature; RBI user experience; NPCI lifecycle controls. |
| H5 | Expansion of e₹ infrastructure strengthens CBDC adoption readiness for future investment-linked use cases.                | RBI CBDC pilot milestones; CBDC architecture/adoption literature.           |
| H6 | Digital financial literacy strengthens constructive engagement with automated investing.                                  | Financial-literacy literature; SEBI investor-education evidence.            |
| H7 | Automated execution and engagement mechanisms operate as complementary pathways that jointly support sustained investing. | Default theory plus payment-salience theory; conceptual synthesis.          |

## 11. DATA ANALYSIS AND RESULTS

### 11.1 Respondent's Profile

Two major external surveys are the foundation of the household and consumer profile. SEBI's Investor Survey 2025 was conducted in 400 towns and 1,000 villages covering 91,950 households, followed by a 53,357 household Main Survey. The design includes urban and rural India, all the states and union territories and can be used for national household estimates (SEBI, 2026). In 2022, RBI conducted a study on digital payment of around 90,000 rural and urban merchants and consumers across all states and union territories, with a particular focus on rural areas (RBI, 2024b).

| External survey            | Respondent base                 | Geographic / segment profile       | Use in analysis                                              |
|----------------------------|---------------------------------|------------------------------------|--------------------------------------------------------------|
| SEBI Listing Survey        | 91,950 households               | 400 towns; 1,000 villages          | National investor incidence and awareness                    |
| SEBI Main Survey           | 53,357 households               | Approx. 36,000 urban; 17,000 rural | Detailed investor behaviour and engagement                   |
| RBI Digital-Payment Survey | ~90,000 merchants and consumers | Rural + urban; all states/UTs      | Digital-payment awareness, trial, current use and experience |

**Source note:** SEBI Investor Survey 2025 (SEBI, 2026) and RBI Report on Currency and Finance 2023-24, Chapter III (RBI, 2024b).

### 11.2 UPI AutoPay Usage

UPI AutoPay is no longer a recurring-payment feature, but a material mandate-rail for mutual funds. The mandate controls and pre-debit visibility are also automated with AutoPay, which explicitly mentions mutual funds as one of the use cases (NPCI, n.d.). The FY24 disclosures indicate that over 50% of the payment ecosystem of mutual funds is captured in CAMSPay, with 1.4 million-plus UPI AutoPay mandate registrations on the platform every month and 3.6 lakh UPI AutoPay mandates registered monthly for SIPs (CAMS, 2024).

In FY25, the UPI AutoPay transaction value was reported to be ₹107.25 billion per month, UPI AutoPay mandate registrations were reported at 1.01 million+ per month and SIP transactions were reported at 65.58 million per day to date (CAMS, 2025). The indicators for Q4FY26 indicate that 3.2 million-plus UPI AutoPay mandate registrations were made during the quarter, and the company's involvement in over half of the mutual-fund payment ecosystem (CAMS, 2026). Since the disclosures are reported on varying bases over the periods, each indicator is considered in its own stated period and unit.

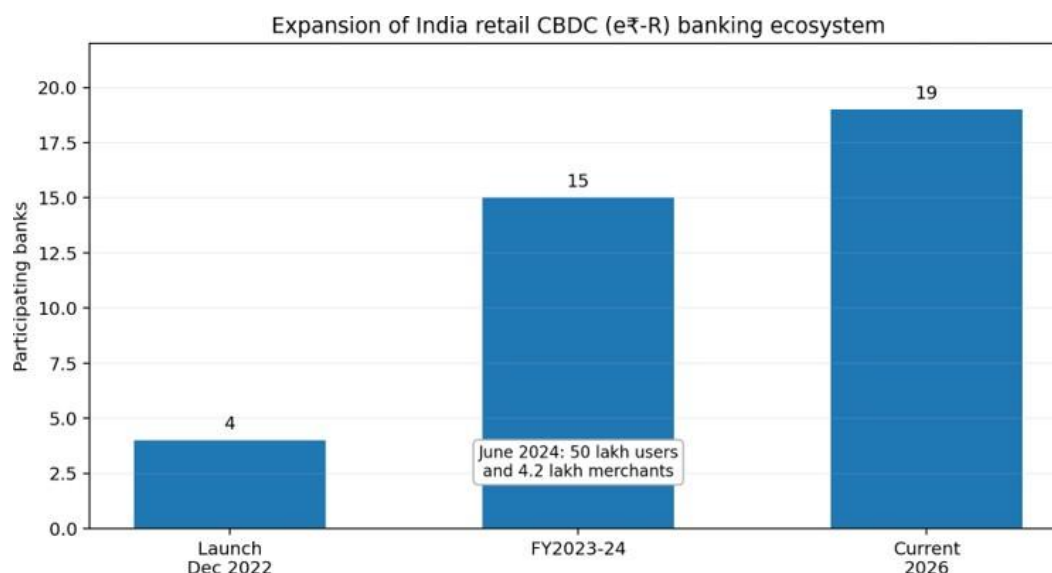
| Reporting period | Published CAMSPay indicator                                                                                                                              | Interpretation                                       |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| FY23             | 1.5 million total mandate registrations across CAMSPay payment solutions; ₹50 billion NACH + digital transactions                                        | Early scale in recurring-payment infrastructure      |
| FY24             | 1.4 million+ UPI AutoPay registrations per month; 3.6 lakh SIP UPI AutoPay mandates per month; >50% MF ecosystem share                                   | AutoPay established as a prominent SIP mandate route |
| FY25             | 1.01 million+ UPI AutoPay registrations per month; ₹107.25 billion UPI AutoPay transaction value; 65.58 million daily SIP transactions processed to date | Large recurring-payment operating base               |
| Q4FY26           | 3.2 million+ UPI AutoPay mandate registrations in quarter; >50% MF ecosystem share                                                                       | Continued ecosystem-scale adoption                   |

**Source note:** CAMS annual and operating disclosures: CAMS (2023, 2024, 2025, 2026). Reporting units are preserved exactly as published.

## 11.3 CDBC Awareness and Usage

The study's evidence for the CBDC adoption readiness comes from the retail Digital Rupee pilot. The first phase started on 1st December 2022 with four banks in four cities and mobile wallets for person-to-person and person-to-merchant transactions (RBI, 2022b). In FY24, the pilot was expanded to include 15 banks and 81 locations and the interoperability between UPI and CBDC QR infrastructure was introduced (RBI, 2024a).

As of June 2024, a total of 50 lakh users and 4.2 lakh merchants were involved in the retail CBDC pilot (RBI, 2024b). The current list of participating banks and two non-bank providers on RBI's public CBDC page also includes the e₹ wallets, which can transact via CBDC QR codes as well as UPI QR codes (RBI, 2025; RBI, 2026). The developments provide increasingly wide bases for future applications of digital money based on recurring payments and investment.



**Figure 2.** Expansion of India's retail CBDC banking ecosystem. Sources: RBI (2022b, 2024a, 2024b, 2026).

## 11.4 SIP Retention

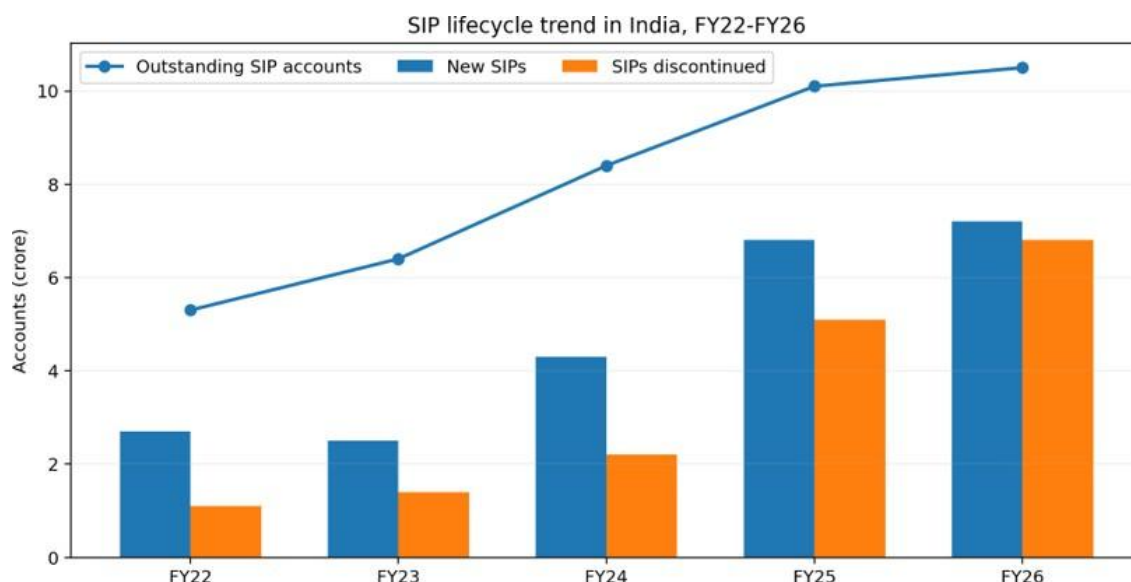
| FY   | New SIPs (cr) | Discontinued (cr) | Outstanding (cr) | Net additions (cr) | Discontinued / new |
|------|---------------|-------------------|------------------|--------------------|--------------------|
| FY22 | 2.7           | 1.1               | 5.3              | 1.6                | 40.7%              |
| FY23 | 2.5           | 1.4               | 6.4              | 1.1                | 56.0%              |
| FY24 | 4.3           | 2.2               | 8.4              | 2.1                | 51.2%              |
| FY25 | 6.8           | 5.1               | 10.1             | 1.7                | 75.0%              |
| FY26 | 7.2           | 6.8               | 10.5             | 0.4                | 94.4%              |

**Source note:** Base data: NSE Market Pulse April 2026, Figure 299; source within the NSE publication: CMIE Economic Outlook and NSE EPR (NSE, 2026). Net additions and discontinued-to-new ratios are derived directly from the published values.

The SIP account base improved significantly from 5.3 crore in FY22 to 10.5 crore in FY26, with a total growth of 98.1% over four intervals, which translates to an 18.6% CAGR. New SIP registrations grew by 166.7% cumulative and 27.8% CAGR, from 2.7 crore to 7.2 crore. In the five fiscal years, the number of new SIPs has been higher than discontinued SIPs in every year and has resulted in a net total of

6.9 crore SIPs. The discontinued to new ratio has improved from 40.7% in FY22 to 94.4% in FY26, emphasizing the increasing strategic significance of the mandate reliability, investor communication and retention design in the much larger SIP ecosystem (NSE, 2026).

AMFI's July 2026 figures provide an up-to-the-minute benchmark: The SIP contribution for the month was at ₹31,961 crore (AMFI, 2026). High monthly contribution flows and a bigger outstanding base can lead to considerable investment persistence at industry level if there is a small increase in continuity of recurring payments.



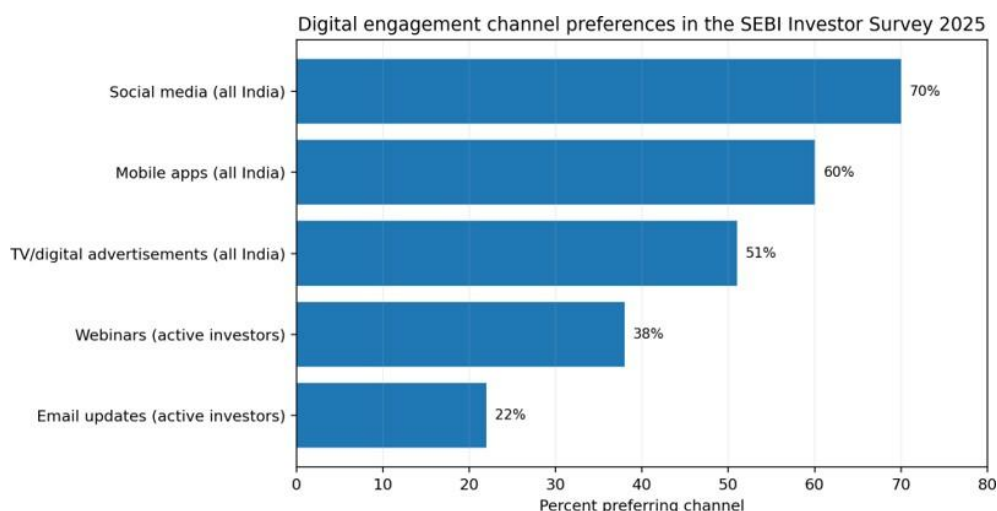
**Figure 3.** SIP lifecycle trend, FY22-FY26. Base data: NSE (2026), sourced there from CMIE Economic Outlook and NSE EPR.

## 11.5 Investor Engagement

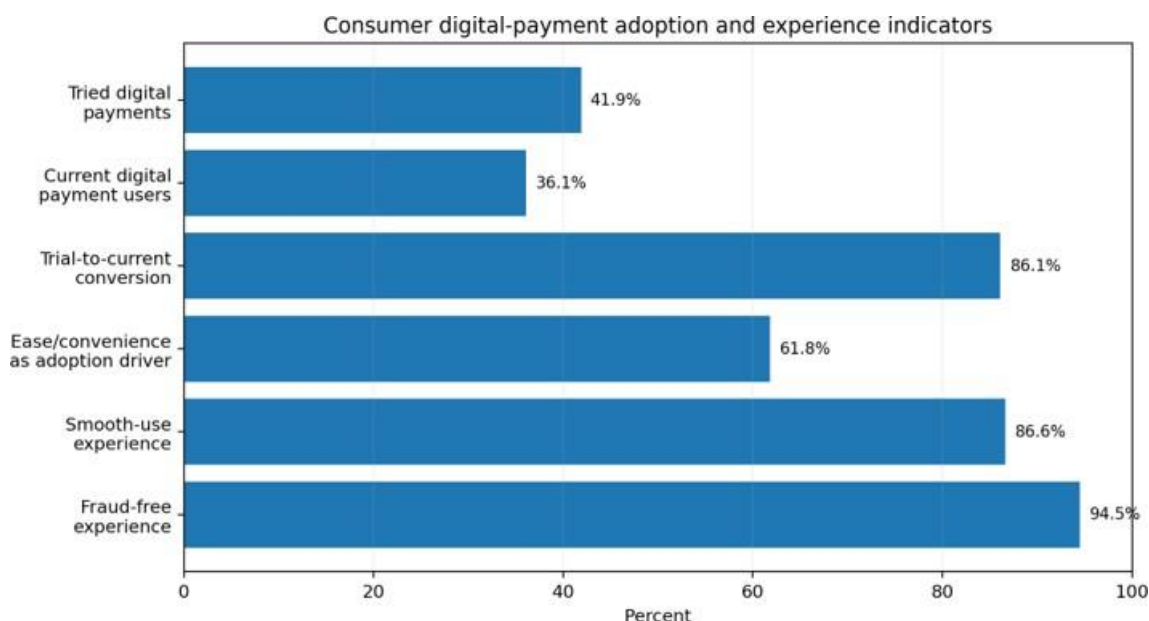
The survey conducted by SEBI in 2025 categorizes securities-market investors into active and dormant investors, with 60% of investors being active and 40% dormant (SEBI, 2026). The all-India sample believes social media (70%), mobile apps (60%) and TV/digital ads (51%) are preferred modes of investor education and information. When it comes to webinars, 38% of active investors prefer them, while 22% prefer email updates, highlighting the need for timely digital touchpoints that

complement automated investing (SEBI, 2026).

According to the same SEBI survey, 91% of the investors who attended investor education programmes found them useful, which reinforces the need for purposeful learning interventions for sustained engagement. RBI's consumer evidence brings a payment-use angle – 41.9% had tried digital payments, 36.1% were current users and the conversion rate from trial to current was 86.1%. The key drivers for adopting the technology included ease and convenience (61.8%), smooth use (86.6%) and no fraud (94.5%) (RBI, 2024b).



**Figure 4.** Investor digital-engagement channel preferences. Source: SEBI Investor Survey 2025 (SEBI, 2026).



**Figure 5.** Consumer digital-payment adoption and experience indicators. Source: RBI (2024b).

## 11.6 Relationship Between Automated Payments and SIP Retention

Convergent external evidence is used to assess the relationship. The FY24 data from CAMSPay reveals that over half of the mutual-fund payment ecosystem (CAMS, 2024) has seen 3.6 lakh SIP-related UPI AutoPay mandate registrations per month. The numbers of outstanding accounts increased from 8.4 crore in FY24 to 10.5 crore in FY26, an increase of 25.0% (NSE, 2026) across the SIP system as a whole. This market observation is consistent with default and auto-enrolment studies that have found that costs of repeated action are a barrier to persistence and automated processes help overcome those costs (Beshears et al., 2009; Madrian & Shea, 2000).

This is further reinforced by the AutoPay design of NPCI, which involves scheduled execution, pre-debit notification, and a user controlled mandate lifecycle, that provides reliability and perceived control (NPCI, n.d.). The convergent evidence therefore supports H1 and H2 at an ecosystem level: recurring automation is in line with continuity, and transaction ease is the path that leads to intended SIP contributions to become recurring transactions.

| Evidence layer        | External indicator                                                          | Source                                        | Implication                                          |
|-----------------------|-----------------------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------|
| Operational adoption  | 3.6 lakh SIP-related UPI AutoPay mandates per month in FY24 CAMSPay network | CAMS (2024)                                   | Strong recurring-payment penetration in mutual funds |
| SIP system growth     | Outstanding SIP accounts 8.4 cr FY24 to 10.5 cr FY26 (+25.0%)               | NSE (2026)                                    | Large and expanding continuity base                  |
| Payment design        | Scheduled execution + pre-debit notification + pause/revoke controls        | NPCI (n.d.)                                   | Reliability combined with investor control           |
| Behavioural mechanism | Automatic/default structures increase saving-plan persistence               | Madrian & Shea (2000); Beshears et al. (2009) | Theoretical support for retention mechanism          |

## 11.7 Relationship Between Automated Payments and Investor Engagement

Investor engagement becomes an additional channel to complement automation. The 86.1% trial-to-current digital-payment conversion rate highlights the fact that once the consumers have experienced digital payments, they are likely to continue using it; the 61.8% convenience rate and 86.6% smooth-use experience result further emphasize the low-effort approach (RBI, 2024b). Concurrently, NPCI's 24-hour pre-debit notification and mandate-control capabilities foster meaningful moments of salience and agency in an automated process (NPCI, n.d.).

SEBI's channel preferences reveal that apart from popular channels like mobile and social, investors also appreciate webinars and email updates, especially those who are active investors (SEBI, 2026). Additionally, the adoption of UPI and CBDC studies also highlight the importance of trust, performance expectancy, merchant acceptance, security, and attitude in the continued use of digital payments (Razi-ur-Rahim et al., 2024; Gupta et al., 2023; Kaur et al., 2025; Keshav & Sinha, 2026). Each of these pieces of evidence supports H3, H4, H6 and H7: purposeful investor attention is maintained by purposeful payment salience, trust, control and financial literacy when it comes to automation.

| Hypothesis | Evidence status                            | Primary basis                                                                          |
|------------|--------------------------------------------|----------------------------------------------------------------------------------------|
| H1         | Supported by convergent secondary evidence | UPI AutoPay SIP mandate scale + expanding outstanding SIP base + default literature    |
| H2         | Supported by convergent secondary evidence | RBI convenience/smooth-use evidence + NPCI recurring-payment design                    |
| H3         | Supported by convergent secondary evidence | Pre-debit salience + SEBI digital engagement preferences + payment-salience literature |
| H4         | Supported by convergent secondary evidence | RBI user experience + NPCI controls + UPI/CBDC trust literature                        |

| Hypothesis | Evidence status | Primary basis |
|------------|-----------------|---------------|
|------------|-----------------|---------------|

|    |                                                |                                                                                  |
|----|------------------------------------------------|----------------------------------------------------------------------------------|
| H5 | Supported as adoption-readiness pathway        | 4 to 15 to 19 participating-bank expansion; 50 lakh users and 4.2 lakh merchants |
| H6 | Supported by survey and literature convergence | SEBI education usefulness + financial-literacy research                          |
| H7 | Supported by integrated framework              | Execution and engagement evidence operate through complementary mechanisms       |

## 12. KEY FINDINGS

- The SIP ecosystem grew significantly with outstanding SIPs rising by 98.1% from FY22 to FY26, and an 18.6% CAGR as per the statistics provided by NSE/CMIE (NSE, 2026).
- UPI AutoPay has successfully got to the point of material adoption in the mutual funds segment. In FY24, more than half of the mutual-fund payment ecosystem was on a platform that registered 3.6 lakh UPI AutoPay mandate for SIPs on average per month, according to CAMSPay.
- Ease of payment is significantly linked to continued use of digital. According to RBI (2024b), 86.1% of digital-payment trialists are now using digital payments, and ease and convenience are the main reason for adopting digital payments (61.8%).
- The user experience and trust indicators are good: 86.6% of the digital-payment users said that they used the digital payment system without any hassle and 94.5% said that they did not experience any fraud in the RBI survey (RBI, 2024b).
- Investors' engagement is digital. The webinar and email updates are particularly relevant channels for active-investor education, as 60% of investors are active (SEBI, 2026), whereas social media and mobile apps dominate the sample of all investors.
- The perceived usefulness of investor education has been high among the participants with 91% finding the programmes useful, which further highlights the importance of touchpoints that are oriented towards investor education (literacy) (SEBI, 2026).
- Retail pilots have progressed from four banks in FY24 to 15 banks, and there are 50 lakh users and 4.2 lakh merchants on the public page of the RBI as of June 2024 (RBI, 2022b; RBI, 2024a; RBI, 2024b; RBI, 2026).
- The evidence proves that the frictionless paradox holds true: seamless recurring execution reinforces continuity, while purposeful salience, trust and control help to hold investors' attention.

## 13. DISCUSSION

The findings combine evidence from operations with behavioural finance. The effort of execution construct in UPI AutoPay is similar to the effort construct in TAM/UTAUT, as well as to the evidence in the default literature regarding automatic saving (Davis, 1989; Venkatesh et al., 2003; Madrian & Shea, 2000). Economically, in the SIP context, this mechanism is significant as the outstanding account base has increased by almost 2 times in FY22-FY26. Frictionless paradox is revealed when execution is combined with attention. The salience and recall of the payment mechanisms can change (Prelec & Loewenstein, 1998; Soman, 2001; Raghubir & Srivastava, 2008). The pre-debit notification by NPCI gives a user a deliberate information cue before automated execution and pause and revoke give users agency. The study's findings that frictionless execution and purposeful engagement can be achieved in the same payment flow is reflected in this design.

Contextual bridge provided by Trust and Literacy. In the Indian context, trust is found to be linked to attitude and use behaviour (Razi-ur-Rahim et al., 2024), while the factors of trust, security, merchant acceptance, and regulatory environment are identified as adoption factors in Digital Rupee studies (Gupta et al., 2023; Kaur et al., 2025; Keshav & Sinha, 2026). The evidence from SEBI and the financial-literacy literature demonstrate the importance of informed control for ongoing financial participation (SEBI, 2026; Lusardi & Mitchell, 2014; van Rooij et al., 2011).

CBDC adds a forward-looking adoption-readiness dimension that adds to the study's focus on the observed UPI AutoPay SIP mandate series today. The e₹ pilot has been scaled up across institutions, geographies, users, merchants and QR interoperability, leading to a more mature digital-money ecosystem (RBI, 2024a; RBI, 2024b; RBI, 2026). This expansion is interpreted by Auer and Böhme (2020) and Auer et al. (2020) as an expression of adoption readiness. The framework thus calls for the e₹ to be a future pathway for recurring payments, and to be as easy, controlled, trusted, and salient as any other.

## 14. IMPLICATIONS OF THE STUDY

### 14.1 Implications for Mutual Funds and Payment Platforms

- Embed UPI AutoPay as a high-visibility recurring mandate option across SIP onboarding journeys while retaining clear pause, revoke and modification controls.
- Use pre-debit communication as an engagement moment that connects the upcoming instalment with portfolio progress, goal review and educational content.
- Combine mandate-health dashboards with timely prompts for bank-balance readiness, mandate expiry, account changes and investor goal updates.
- Use channel preferences identified by SEBI to tailor education: mobile/social formats for broad reach and webinars/email for active-investor depth.

### 14.2 Implications for Regulators and Digital-Payment Policy

- Continue strengthening interoperability and common lifecycle standards across recurring-payment rails.
- Extend investor education around recurring mandates, transaction controls, cyber hygiene and long-horizon investing.
- As e₹ use cases mature, evaluate recurring investment functionality with transparent user consent, programmability safeguards and familiar QR/payment interfaces.
- Encourage public reporting of mandate success, recurring-payment continuity and investor-service indicators to deepen evidence on retention outcomes.

### 14.3 IMPLICATIONS FOR INVESTORS

- Automated mandates can translate an investment plan into disciplined periodic execution.
- Pre-debit alerts and app-level mandate controls can support informed participation while preserving convenience.
- Periodic portfolio review and investor education can keep long-term goals visible alongside automated execution.

## 15. LIMITATION OF THE STUDY

The external datasets are complementary to each other in terms of the analytical level they operate on: SEBI measures households and investor behaviour, RBI measures consumer and merchant digital-payment behaviour, CAMSPay provides platform operations, NSE/CMIE provides statistics on the lifecycle of SIPs, and RBI CBDC sources provide statistics on the expansion of the pilot. This multi-level structure helps to reinforce triangulation and maintains the original unit and definition of each source.

The evidence thus confirms the association and mechanism interpretation at the ecosystem level. Investor linked payment and SIP panels are useful next step design for individual causal magnitude, payment success transitions and engagement trajectories. At the present time the e₹ component only represents the level of readiness for adoption and maturity of infrastructure, and can be used as a baseline for future investment research as more use cases become available.

## 16. FUTURE SCOPE OF THE STUDY

- Link AMC or RTA mandate-level payment records with SIP continuation outcomes to estimate investor-level

retention effects.

- Use SEBI's published respondent data for deeper segmentation of investor engagement by age, gender, geography, income, literacy and product participation.
- Extend the design to provider-level mandate success rates, retry behaviour, pre-debit response patterns and digital-engagement analytics.
- Evaluate recurring e₹ investment use cases as the retail CBDC pilot expands programmability, offline functionality and merchant/payment integrations.
- Build longitudinal panels that connect digital-payment adoption, SIP tenure, portfolio review frequency and financial-literacy interventions.
- Compare UPI AutoPay, eNACH and future e₹ recurring mechanisms on transaction ease, control, cost, continuity and engagement.

## 17. CONCLUSION

The study reveals compelling evidence from the outside to support the two-path view on automated digital banking payments in India. The first path is live: UPI AutoPay minimises the effort for recurring payments and offers a scalable mandate framework for SIP execution. The second path is behavioural: pre-debit visibility, trusted interfaces, lifecycle controls and investor education are purposeful steps to engage in an otherwise automated process.

This design is important as shown in the market evidence of SIP. The number of outstanding SIP accounts has nearly doubled from FY22 to FY26 and SIP contributions in a month stood at ₹31,961 crore in July 2026 (NSE, 2026; AMFI, 2026). Payment disclosures by mutual funds on CAMSPay indicate that a significant portion of the UPI AutoPay is being achieved, while RBI's national survey reveals high continuation rates for those who have experimented with digital payments. The investor survey conducted by SEBI shows that active investors appreciate the timely delivery of education in a digital format. All of these findings add up to the argument that automation and engagement go hand-in-hand when payment systems are easy and salient and give control.

CBDC/e₹ is an extension to the future. The retail pilot's growth in banks, locations, users, merchants and UPI-QR interoperability creates a viable path to adoption for investment linked payment apps in the future. The frictionless paradox is thus more aptly understood as a design principle: seamless execution helps to retain, purposeful engagement cues help to reinforce investor attention.

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