

**OVERCOMING RECENCY BIAS AND RISK AVERSION IN SIP INVESTORS  
USING AI TOOLS IN INDIA****Dr. Mariya Ansari**Assistant Professor, Shambhunath Institute of Engineering and Technology,  
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**ABSTRACT**

Systematic Investment Plans (SIPs) are the foundation of retail investment in Indian mutual funds. Despite the benefits of rupee cost averaging and automated investment discipline, Systematic Investment Plans (SIPs) are frequently paused or discontinued during periods of market volatility. This behavior is largely driven by behavioral biases, particularly recency bias and heightened risk aversion, which led investors to overreact short-term market downturns. This study has two primary objectives: (1) to investigate how Indian retail SIP investors exhibit recency bias and risk-averse behavior during volatile market conditions, and (2) to evaluate the potential of AI-based advisory solutions in mitigating these biases and promoting sustained investment discipline. This study investigates how recency bias and risk aversion manifest in Indian Systematic Investment Plan (SIP) investors and evaluates the effectiveness of AI-based advisory interventions (nudges, personalization, and simulations) in reducing these behavioral biases. Using survey data (N=300), the study employed reliability analysis, ANOVA, and regression models to examine five hypotheses. Results indicate that recency bias and risk aversion significantly undermine SIP adherence and portfolio diversification, respectively. AI interventions successfully reduced these biases and enhanced trust in advisory platforms, ultimately improving adherence. Findings provide evidence for the role of AI tools in strengthening investor resilience in volatile markets.

**Keywords:**

Systematic Investment Plans, Recency Bias, Risk Aversion, Behavioral Finance, Artificial Intelligence, Investment Behavior, Investors' Trust

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**INTRODUCTION**

Systematic Investment Plans (SIPs) have evolved as the preferred method of retail participation in mutual funds in India. They promote long-term financial discipline by automating monthly investments and rupee cost averaging. However, amid adverse market conditions, investors frequently discontinue SIPs early. Recency bias (overweighting bad recent outcomes) and risk aversion, which motivates investors to avoid prospective losses despite long-term advantages, are major influences on this conduct.

Meanwhile, AI-powered advisory platforms are rapidly being used in fintech and mutual fund distribution to deliver personalized nudges, predictive simulations, and adaptive portfolio recommendations (Bhatt & Sharma, 2022). These techniques can counteract behavioral biases, increase trust, and keep investors disciplined. In India's evolving financial investment landscape, Systematic Investment Plans (SIPs) have become a widely adopted investment strategy among Indian retail investors, offering structured benefits such as disciplined contribution, rupee cost averaging, and long-term wealth accumulation through compounding. However, the effectiveness of SIPs is often undermined by behavioral biases that influence investor decision-making. In particular, recency bias where investors disproportionately react to recent market fluctuations and heightened risk aversion during periods of volatility frequently lead to premature pausing or discontinuation of SIPs, thereby compromising potential returns and long-term financial goals. These biases frequently lead to suboptimal decision-making, particularly during market downturns, when investors are more likely to panic, pause, or completely discontinue their SIP contributions. Recency bias, or the behavioral tendency to overvalue recent market events, frequently leads investors to misinterpret temporary volatility as a long-term trend. Simultaneously, risk aversion, a deeply ingrained psychological disposition, causes people to prefer avoiding losses over acquiring equivalent gains, leading them to exit investments at the first sign of trouble.

Over the last decade, the Indian mutual fund industry has grown at an exponential rate, thanks in large part to increased financial literacy, digital penetration, and the rise of fintech platforms. By 2025, SIPs account for over ₹20,000 crore in monthly investments. However, investor behaviour remains fragile and sensitive to short-term news cycles and market volatility. For example, during the COVID-19 crash in 2020 and periods of high inflation in 2022-2023, SIP stoppage rates increased significantly, demonstrating the power of behavioral influences over rational, long-term strategies. Such deviations from disciplined investing are not only harmful to individual wealth accumulation, but they also pose challenges to the broader financial ecosystem, which relies on continued retail participation.

### BEHAVIORAL BIASES AND SIP DISCONTINUATIONS

Between January and March 2025, the Indian mutual fund industry saw a dramatic reversal, with discontinued Systematic Investment Plans (SIPs) far outnumbering new registrations. According to AMFI data, discontinuations were around 167.6 lakh SIPs, while new registrations were 140.9 lakh. This unique trend can be explained primarily through the lens of behavioural financial finance biases, including recency bias and regret aversion, which are exacerbated by seasonal financial demands and technical reconciliations. First, recency bias had a significant impact on investor behaviour. Equity markets in early 2025 were volatile due to global macroeconomic concerns, such as the Federal Reserve's indications of extended high interest rates and changes in crude oil prices. Retail investors, affected by recency bias, extended these short-term downturns into future expectations and saw continuous SIP contributions as dangerous (Tversky and Kahneman, 1974; Barberis, 2013). Rather than remaining disciplined in systematic investing, many people choose to terminate their SIPs, indicating an overestimation of recent unfavourable news compared to the long-term benefits of rupee cost averaging. Secondly, regret aversion contributed to the increased tendency to the discontinuation behaviour. SIPs started at the post-pandemic lows of 2020-21 resulted in significant capital appreciation by 2024-25. Faced with short-term volatility, investors were concerned about the psychological cost of regret if markets fell further while they continued to invest (Zeelenberg and Pieters, 2007). To minimize potential regret, they chose premature cessation or profit booking. This decision is consistent with evidence that investors frequently forfeit long-term gains to avoid the emotional anguish of "buying at the wrong time" (Loomes & Sugden, 1982).

### SIP DISCONTINUATIONS VS NEW REGISTRATIONS (JAN–MAR 2025)

Month (2025)	SIPs Discontinued (lakhs)	New SIPs Registered (lakhs)	Net Change (Discontinued – New) (lakhs)
January	61.33	56.19	+5.14
February	54.70	44.56	+10.14
March	51.55	40.19	+11.36
<b>Total (Q4 FY 2024–25)</b>	<b>167.58</b>	<b>140.94</b>	<b>+26.64</b>

Source: AMFI

Table-1

In recent years, artificial intelligence (AI) and machine learning-based advisory systems also known as robo advisors have shown promise in reshaping investor behaviour by providing personalized, unbiased, and emotion-free investment advice. Machine learning-based advisory systems, commonly referred to as robo-advisors, have demonstrated potential in transforming investor behaviour by offering personalized, unbiased, and emotion-free investment advice. AI-powered tools can process massive amounts of data to identify patterns in investor behaviour and market movements, allowing for real-time, tailored recommendations. Most importantly, they can be designed to actively counteract behavioural biases by simulating long-term outcomes, reminding investors, and providing personalised insights based on past market resilience. To actively counteract behavioral biases by simulating long-term outcomes, reminding investors, and providing personalised insights based on past market resilience. These features make AI tools an appealing option for promoting SIP continuity, particularly during emotionally charged market phases.

This study looks at the intersection of behavioural finance and AI-powered investment advisory, specifically whether AI tools can help Indian SIP investors overcome recency bias and risk aversion. While previous research has examined these biases separately and acknowledged the growing role of robot advisers in portfolio management, few empirical studies have examined how AI tools can directly impact investor behaviour. In India, few empirical studies have examined how AI tools can directly impact investor behaviour during times of market

stress. Few empirical studies have examined how AI tools can directly impact investor behaviour during times of market stress in India. Given the distinct psychological, cultural, and economic dynamics of Indian investors—such as lower financial literacy, higher loss aversion, and the collective influence of social trust—this study aims to close a critical gap by assessing the behavioural impact of AI tools in real investing environments.

### RESEARCH OBJECTIVES

- Characterize how recency bias and risk aversion manifest in Indian SIP investors.
- Evaluate AI-based interventions to mitigate these biases.

### LITERATURE REVIEW

#### Investors' psychology and Behavioral Finance

Simon (1967, 1983), as the pioneer of bounded rationality, recognized that this theory would be incomplete without accounting for the influence of emotion. When making decisions, people expect to regret their choices, and they factor that expectation into their actions, which leads to behaviour biases. Investors' perception of risk also affects their decision to invest. An investor's viewpoint or way of thinking about unknown hazards is known as risk perception (Pradikasari & Isbanah, 2018). Investors' decision-making in investments involves multiple aspects, leading them to act either rationally or irrationally (Permata & Mulyani, 2022). Recency bias is a human trait that can lead to illogical financial decisions. Recency bias refers to an individual's tendency to recall or focus exclusively on the most recent information acquired (Alvia, 2011). Recency bias (also related to representativeness and extrapolation) leads investors to over-update beliefs based on recent outcomes (Barberis, Shleifer, & Vishny, 1998). Irjayanti and Kurniawati (2017) define risk perception as an investor's perception, evaluation, and interpretation of risk when making investment decisions.

Investors exhibiting recency bias in their investment selections may render suboptimal choices, since this tendency can lead to selection errors in instruments that do not align with desired returns (Young, 2010). Sulistiawan and Wijaya (2015) propose that expert recommendations may mitigate recency bias when the information sequence is unfavourable followed by favorable, but; if the sequence is inverted, expert recommendations fail to alleviate recency bias. Nofsinger (2002) also investigates the impact of group discussions on mitigating the influence of recency bias in investors' decisions. Previous research indicates that efforts to decrease recency bias are not universally effective. Lerner et al. (2015) analysed and assessed research pertaining to emotions and decision-making. These studies demonstrate that emotion is a potent, pervasive, predictable, occasionally hazardous, and sometimes advantageous aspect in decision-making. In numerous fields, significant patterns emerge in the ways emotions affect judgement.

#### TRUST AND AI ADVICE

Trust plays a pivotal role in financial decision-making, particularly in contexts where investors rely on external advice. Perceived competence, benevolence, and integrity often drive trust in human experts in traditional advisory relationships (Ohanian, 1990). benevolence, and integrity (Ohanian, 1990). Investors are more likely to follow financial recommendations when they perceive the advisor as credible and aligned with their best interests (McKnight, Choudhury, & Kacmar, 2002). Digital choice architectures can improve financial outcomes via salience, default effects, reminders, and framing (Thaler & Sunstein, 2008; Sunstein, 2014). In AI-mediated advice, trust emerges from perceived competence, benevolence, and integrity (Mayer, Davis, & Schoorman, 1995), plus explainability and transparency (Ribeiro, Singh, & Guestrin, 2016). In finance, users weigh algorithm aversion against demonstrated performance (Dietvorst, Simmons, & Massey, 2015). Personalized simulations and counterfactual explanations can calibrate expectations and reduce noise. Research suggests that technology-mediated trust is shaped by the perceived usefulness, transparency, and reliability of AI recommendations (Gefen, Karahanna, & Straub, 2003). Investors tend to trust AI platforms when they provide consistent, data-driven insights and when the system demonstrates competence in reducing uncertainty (Dietvorst, Simmons, & Massey, 2015).

Specifically, in investment contexts, **robo-advisors** have been shown to enhance trust and satisfaction when designed to provide clear justifications for their recommendations (Jung, Dorner, Weinhardt, & Puzmazz, 2018). AI-driven advice reduces the emotional component of decision-making by offering neutral, scenario-based guidance, which is particularly valuable for investors prone to biases. Moreover, recent studies argue that trust in AI is not merely functional but also behavioral: investors adopt AI tools when they believe that the technology safeguards their long-term interests (Siering & Muntermann, 2013).

**CONCEPTUAL FRAMEWORK AND HYPOTHESES**

This study looks at how risk aversion and recency bias affect retail investors' investment behaviour in Systematic Investment Plans (SIPs) in India. These biases frequently result in reduced investments or early cessation, particularly during market swings. AI-powered advice systems that offer timely nudges, personalized timely nudges, simulations, and personalized recommendations are suggested as a way to lessen these biases. These technologies assist investors in maintaining regular SIP investments and making well-informed decisions by enhancing behavioural trust. The following are the hypotheses tested in the present study:

- H1. Recency bias adversely influences the inclination to adhere to SIP.
- H2. Risk aversion adversely influences diversification.
- H3. AI interventions mitigate recency bias.
- H4. AI interventions mitigate risk aversion.
- H5. AI interventions enhance behavioral trust in AI recommendations.

**RESEARCH METHODOLOGY**

**Research Design:** The study uses a quantitative research methodology with a cross-sectional survey technique to investigate the relationship between behavioural biases such as recency bias and risk aversion, as well as the usefulness of AI-powered advising tools in influencing SIP investors' behaviour in India. The study is explanatory in This study aims to examine how AI interventions influence investor trust and investment decisions.

Primary data were gathered through a structured self-administered questionnaire distributed via online platforms and offline interactions with mutual fund investors. The survey used closed-ended questions using a five-point Likert scale ranging from "strongly disagree" to "strongly agree" to assess perceptions, attitudes, and behavioural intentions. This strategy provides consistency and convenience of data analysis. According to the regression modelling criteria for regression modelling and factor analysis, a total of 300 respondents were recruited (Hair et al., 2022). To counteract skewness, the sample was distributed nearly equitably among demographic subgroups. The target population consisted of Indian retail mutual fund investors who are currently investing through SIPs.

**SAMPLING TECHNIQUE**

The study employed a purposive sampling technique, focusing specifically on SIP investors who have experience with mutual fund investments in India. The inclusion criteria required participants to be:

- Actively investing in SIPs,
- Aware of or using digital advisory tools,
- Over 21 years of age.

A total of 500 respondents were approached, out of which 300 valid responses were considered for the final analysis after data cleaning.

**MEASURES AND INSTRUMENTS**

The survey instrument was developed using validated scales adapted from prior literature, with 5-point Likert scales (1 = Strongly Disagree, 5 = Strongly Agree).

**Recency Bias:** 4-item scale (Barberis & Shleifer, 2003).

**Risk Aversion:** 5-item scale (Grable & Lytton, 1999).

**AI Interventions:** 6-item scale developed for this study.

**Behavioral Trust:** 4-item scale (McKnight et al., 2002).

**Diversification & SIP adherence:** self-reported portfolio validated.

**DEMOGRAPHIC PROFILE (N = 300)**

Demographic Variable	Category	Frequency	Percentage
Gender	Male	186	62%
	Female	114	38%
Age	21–30 years	78	26%
	31–40 years	129	43%
	41–50 years	63	21%
	51–60 years	30	10%

<b>Education</b>	Graduate	141	47%
	Postgraduate	126	42%
	Others	33	11%
<b>Monthly Income</b>	₹25,000–50,000	108	36%
	₹50,001–1,00,000	135	45%
	Above ₹1,00,000	57	19%

*Table-2***ANALYSIS AND RESULTS****Descriptive Statistics**

<b>Construct</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum</b>	<b>Maximum</b>
<b>Recency Bias</b>	3.72	0.81	1	5
<b>Risk Aversion</b>	3.45	0.76	1	5
<b>AI Interventions</b>	4.12	0.68	2	5
<b>Behavioral Trust</b>	3.89	0.74	2	5
<b>SIP Adherence</b>	3.68	0.80	1	5
<b>Diversification</b>	3.51	0.73	1	5

*Table-3*

Table 3 shows the descriptive statistics for the key constructs based on data from 300 SIP investors. The findings suggest that Recency Bias ( $M = 3.72$ ,  $SD = 0.81$ ) and Risk Aversion ( $M = 3.45$ ,  $SD = 0.76$ ) are somewhat prevalent among investors, implying that recent market movements and fear of loss influence their judgements. AI Interventions ( $M = 4.12$ ,  $SD = 0.68$ ) had the highest mean score, indicating that investors find AI-based guidance valuable and supportive. Behavioral Trust ( $M = 3.89$ ,  $SD = 0.74$ ) indicates moderate trust in AI advice. Outcome variables such as SIP Adherence ( $M = 3.68$ ,  $SD = 0.80$ ) and Diversification ( $M = 3.51$ ,  $SD = 0.73$ ) indicate that investors retain disciplined investment behaviour while diversifying conservatively. These findings give a foundational knowledge of how biases and AI-powered technologies influence investor behaviour in the SIP setting.

**RELIABILITY TEST**

<b>Construct</b>	<b>Cronbach's <math>\alpha</math></b>
<b>Recency Bias</b>	0.81
<b>Risk Aversion</b>	0.83
<b>AI Interventions</b>	0.85
<b>Behavioral Trust</b>	0.79

*Table-4*

Cronbach's Alpha ( $\alpha$ ) was used to examine the internal consistency of survey instruments (Nunnally & Bernstein, 1994). As seen in Table 4, all constructs have sufficient dependability. The recency bias scale ( $\alpha = 0.81$ ) and the risk aversion scale ( $\alpha = 0.83$ ) have high internal consistency, demonstrating that they accurately measure investors' behaviours recent market information and perceived investment dangers. These findings are congruent with previous studies in which behavioral constructs were examined using multiple-item measures (Grable & Lytton, 1999). The AI Interventions scale ( $\alpha = 0.85$ ) has good dependability and accurately reflects investors' impressions of the usefulness, guidance, and support given by AI-powered advisory products. This is congruent with research by Jung et al. (2018), who emphasized the need for consistent measurement when assessing technology-driven interventions in financial decision-making. The Behavioral Trust scale ( $\alpha = 0.79$ ) indicates that the items accurately reflect investors' trust in AI advice. According to McKnight, Choudhury, and Kacmar (2002), trust is an important factor in driving technology adoption and usage behaviour.

**ANOVA (AI USERS VS NON-AI USERS)**

<b>Variable</b>	<b>F-value</b>	<b>Sig.</b>	<b>Interpretation</b>
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SIP adherence	11.24	0.001	AI users show higher adherence
Diversification	8.93	0.003	AI users diversify more
Behavioral Trust	14.16	0.000	AI enhances trust

Table-5

ANOVA was used to compare AI-assisted and non-AI investors (Field, 2013). The findings (Table 5) reveal substantial variations in all outcomes. AI users had higher SIP adherence rates ( $F = 11.24$ ,  $p < 0.001$ ). Diversification ( $F = 8.93$ ,  $p = 0.003$ ) was higher among AI users, indicating better portfolio allocation, which is consistent with Grable and Lytton's (1999) research on risk mitigation. AI users had higher behavioral trust ( $F = 14.16$ ,  $p < 0.001$ ), indicating that technology-based guidance improves investment decision-making (McKnight, Choudhury, & Kacmar, 2002). These findings demonstrate the effectiveness of AI tools in enhancing investor behaviour in industrial investment environments.

### HYPOTHESIS TESTING

Hypothesis	Predictor → Outcome	$\beta$	t-value	p-value	Result
H1	Recency Bias → SIP Adherence	-0.38	-5.97	0.000	Supported
H2	Risk Aversion → Diversification	-0.34	-5.21	0.000	Supported
H3	AI Interventions → Recency Bias	-0.29	-4.62	0.000	Supported
H4	AI Interventions → Risk Aversion	-0.27	-4.11	0.000	Supported
H5	AI Interventions → Behavioral Trust	+0.45	7.03	0.000	Supported

Table-6

### RESULTS AND DISCUSSION

The study discovered that recency bias has a detrimental influence on SIP adherence ( $\beta = -0.38$ ,  $p < 0.001$ ). Investors motivated by recent downturns were more inclined to terminate or pause their SIPs, although SIPs are supposed to perform well during market cycles by averaging rupee costs. This study supports Barberis, Shleifer, and Vishny's (1998) behavioural finance perspective, which states that investors priorities recent information when establishing expectations. Similarly, De Bondt (1993) observed that short-term occurrences frequently affect rational decision-making, resulting in overreaction and premature withdrawals from long-term investments. For Indian retail investors, these finding highlights how psychological biases can undermine the disciplined intent of SIPs, particularly during volatile periods. Risk-averse investors are less likely to diversify into equity or higher-risk SIP categories, preferring debt-heavy or low-risk funds ( $\beta = -0.34$ ,  $p < 0.001$ ). This finding aligns with Grable and Lytton's (1999) research on financial risk tolerance, which found that higher risk aversion limits investors' willingness to pursue diverse portfolios. The study found that **AI interventions mitigate recency bias ( $\beta = -0.29$ ,  $p < 0.001$ ) and risk aversion ( $\beta = -0.27$ ,  $p < 0.001$ )**. Respondents using AI-powered advisory tools reported fewer emotional reactions to market downturns and greater willingness to maintain diversified portfolios. This supports Jung et al. (2018), who found that robo-advisors improve investor confidence by providing structured simulations and neutral, data-driven nudges. Similarly, Sironi (2016) argued that FinTech innovations reduce behavioral inefficiencies by offering personalized insights. In the Indian context, where financial literacy is still evolving, AI tools appear to offer a buffer against cognitive biases that frequently drive premature SIP discontinuation. AI interventions had the most significant positive influence on behavioral trust ( $\beta = +0.45$ ,  $p < 0.001$ ). Investors were more confident in AI-generated recommendations, considering them trustworthy, neutral, and personalised. This finding is consistent with McKnight, Choudhury, and Kacmar (2002), who found that trust in digital platforms is critical for adoption. Gefen, Karahanna, and Straub (2003) agreed that trust mediates the relationship between technology adoption and actual utilization. For SIP investors, trust in AI advice systems appears to increase adherence and satisfaction while decreasing reliance on traditional intermediaries.

### CONCLUSION

This study looked at how recency bias and risk aversion influence Indian SIP investors' investment decisions, as well as how AI-powered advice tools can help as how AI-powered advice tools can help to reduce these biases. The data confirm that short-term market trends and fear of loss have a substantial impact on investors, resulting

in premature SIP cessation and poor diversification. These findings are consistent with behavioral finance research, which has shown that cognitive biases impede long-term investing goals (Barberis, Shleifer, & Vishny, 1998; Grable & Lytton, 1999). Importantly, the study shows that AI interventions promote investor discipline, diversify portfolios, and increase behavioral trust. AI-based solutions provide personalized nudges and simulations that lessen emotional reactions. Validating Jung et al.'s (2018) findings that algorithm-driven advice helps investors make more reasoned decisions. Furthermore, the favourable impact of AI on trust supports the findings of McKnight, Choudhury, and Kacmar's impact of AI on trust supports the findings of McKnight, Choudhury, and Kacmar (2002), who stated that trust in technology is required for user acceptance and participation. For the industrial investing industry, these findings highlight the potential of AI platforms to assist retail investors in unpredictable markets where behavioral biases frequently undermine logical investment plans. AI improves performance by providing structured direction, while also fostering long-term trust and investor confidence. Future research could explore the customization of AI platforms to accommodate varying look into how AI platforms can be further tailored to fit different levels of financial literacy and risk tolerance. Nonetheless, our study adds to the expanding body of evidence demonstrating that technological interventions, when combined with behavioral insights, can have a transformative impact on fostering disciplined and diverse investment habits.

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