

AI in mutual fund investment decision by retail investor

Ms. Rupashree R.¹, Dr. Satish Y. M.²

¹ Research Scholar, Department of Management Studies, M. S. Ramaiah Institute of Technology, Visvesvaraya Technological University, Karnataka, India.

ORCID: 0000-0002-7323-813X

² Professor, Department of Management Studies, M. S. Ramaiah Institute of Technology, Visvesvaraya Technological University, Karnataka, India.

ORCID: 0000-0002-6828-4164

Corresponding Author:

Ms. Rupashree R.

ABSTRACT

The world of financial services institutions has witnessed numerous shifts triggered by Artificial Intelligence (AI) in the past few years, and the AI Application for evaluating and managing mutual funds is no exception. The research focuses on the effect of the use of artificial intelligence on the investment by retail investors in mutual funds. The data was collected with 400 retail investors using a structured questionnaire to analyse retailer information and an approach of quantitative research was followed. The results indicate that the introduced AI investment tools could be advantageous in the realm of process of making investment decisions, providing greater analytical power, fostering investor confidence, and guiding them in making informed choices. But issues of security, transparency and fear of risk remain significant obstacles to the adoption of AI-powered investment systems. According to the study, the AI solutions can be reliable, transparent, and investor-centric to help improve investors' trust and make effective and informed investing choices for mutual funds...

Keywords: Artificial Intelligence, Mutual Funds, Retail Investors, Investment Decision, Robo-Advisors, Financial Technology (FinTech), AI Adoption

INTRODUCTION:

In financial services, AI makes headlines and impacts the way investment decisions are made, taken and monitored – with sound reason. From optimizing investment portfolios and managing risk to enhancing fraud detection, forecasting market trends, and providing personalized investment guidance, AI's role in investment advice has changed the landscape. Investment advising has been transformed by AI, which optimizes investment portfolios, evaluates risk, strengthens fraud protection, predicts market trends, and offers personalized investment guidance. Indeed, the AI Application-driven robo-advisors, recommendation engines and algorithmic investment-related tools has also been instrumental in altering the process of making investment decisions process of retail investors in the MF sector, including providing them with data-driven, cost effective and objective financial insights: (Cao, 2021; Shanmuganathan, 2020).

Exponential digitalization of financial markets has catapulted the role of retail investors (RIs) in MFIs. The fast digitisation of financial markets has allowed RIs to join the MFI fray. The government backed entry, marketing and usage of smartphones, digital payment platforms, online investment platforms, and easy Know Your Customer (KYC) have significantly boosted penetration of MFs among first-time investors in the

country. RIs tend to have less financial expertise and are more prone to behaviouristic errors like overconfidence, herd mentality, anchoring, and confirmation bias and loss aversion. Cognitive failures often lead to irrational investment decisions, with a negative impact on wealth building for the future. An AI-powered investment platform will try to address these obstacles by incorporating cutting-edge algorithms that can analyze the market, historic funds performance, customer risk tolerance, macroeconomic indicators and behavioural data to produce customized investment tips (Bhatia et al., 2020; Shanmuganathan, 2020).

Traditional investment advice relies heavily on the skill and wisdom of a person who provides advice to the investor, who may be subject to common investment-decisions making errors resulting from human biases, self-reliant decisions making and the different ways in which they relay market information. In contrast, data-driven, objective and consistent recommendations can be made with AI-powered advisory systems, which constantly improve their knowledge from previous and current financial data. As they learn how to better determine the value and quality of the information they receive—by an even smarter process called “adaptive learning”—the machine learning algorithms make better recommendations over time, so investors can get personalized portfolio ideas that are customized to their goals and objectives, financial requirements, desired level

of liquidity, and risk preference (Cao, 2021). These clever technologies can bring the primary advantage of reducing information asymmetries and increasing investment access for small RIs, who may lack pro financial advice.

One of the most prominent AI Application in MFI is the rise of robo-advisory platforms. The robo-advisors employ a rule-based approach to portfolio construction and asset allocation, periodic portfolio rebalancing, tax optimization and monitoring of performance, and they offer significantly reduced fees compared with traditional financial advisors. This involves using behavioural analytics to learn about investors' preferences and continually fine-tuning investment approaches. While AI provides superior analytical accuracy, the researchers point out several factors are still important to investors' adoption of AI in investment decision management, including trust, transparency of algorithms, cybersecurity risks, privacy protection, and perceived reliability (Kim & Schwab, 2024; Kulkarni et al., 2025).

While AI has certainly brought a great deal of technology to the investment world, there is still a lot of psychology involved in investment decisions. Common RIs make investment choices by using intuition, social influence, financial understanding, and personal experiences. Hence, AI is now not only considered a technological novelty, but also as a behavioural intervention that can help reduce biases and enhance investment discipline. Given the role of MF companies in embedding intelligent technologies into their digital investment platform, understanding the interaction between the adoption of intelligent technologies and investor behaviour is becoming increasingly important.

The Indian MF industry offers a perfect case study when it comes to how RIs are adopting AI due to its growing scope of financial inclusion, a rapidly expanding number of investors, and the acceptance of financial applications incorporating AI. But practical studies that detail the impact of AI on RIs' MF investing decisions are still relatively scarce, especially from emerging economies. Thus, the present study aims at studying the impact of AI on RIs' decision for investing in MFs based on their technological, behavioural and information aspects behind the acceptance of AI and its effect on investment behaviour.

LITERATURE REVIEW

Artificial Intelligence has garnered significant attention from researchers and scholars because of its potential to revolutionize financial decision-making. The first time, AI applications were mostly explored in the field of algorithmic trading and portfolio optimization, while the recent studies have shifted the spotlight towards AI-enabled financial advisory systems and their effect on investor behaviour.

Shanmuganathan (2020) analysed the AI Application in the field of behavioural finance and found that the behavioural finance principles and machine learning algorithms in robo-advisories contribute significantly to improve the investment decision-making process. The researchers maintained that AI advisory systems have the potential of handling intricate financial data, mitigating

emotional biases, and creating optimized investment portfolios. It was found that AI has a significant potential to boost investment efficiency and minimize cognitive bias among RIs.

One of the initial qualitative study focused on robo adoption in India was carried out by Bhatia et al. (2020). Their analysis found that robo-advisors that use artificial intelligence successfully reduce behavioural traps like loss aversion, anchoring, herding and overconfidence by delivering an objective and systematic investment proposal. The study did not neglect investor awareness, investor trust, technological familiarity and regulatory confidence as influential factors affecting AI adoption in the investment decisions.

In their research, Kim et al., (2024) examined robo-advisors through the prism of behavioural finance and found that although AI performed well on all of the analytical and operational aspects, it also did not replace human financial advisors. Investor trust, disclosure of AI-driven recommendations, models' explainability and the human approach to AI should all be important considerations for successful AI implementation, they say. The study suggested that the hybrid advisory approach is the best solution that blends the efficiency of AI with human expertise.

Using Heuristic theory and prospect theory, Kutumala et al. (2025) performed an empirical study on AI financial robo-advisors. They found that personalization, the perception of greater interactivity, structural assurances, the understanding of how algorithms work, and a more independent decision making process can positively affect investor adoption of AI advisory platforms. Moreover, the research determined that AI can also substantially decrease behavioural biases, including loss aversion or overconfidence, which can aid in attaining better financial outcomes for RIs.

Overall, current studies suggest that AI is playing a significant role in enabling MFs and increasing their adoption for investment purposes, owing to its analytical precision, the benefits of streamlining portfolio management, mitigating behavioural bias and other factors, which are gaining access to professional financial advice. Despite these developments, however, there are still some research gaps. The majority of the studies conducted focused on the adoption of robo-advisory, technological acceptance or behavioural finance individually while very few focused directly on the direct impact of AI on the investment decisions of RIs, especially in the Indian setting. Further, there is a lack of empirical studies that also review technological traits, behavioural aspects, and investors' attitudes that are responsible for MFIs in the context of AI. The aim of the present study is to tackle these gaps.

OBJECTIVES:

The study seeks to understand how AI influences the process of making investment decisions of RIs, the strengths of investing through AI-powered advisory platforms, the factors that drive investors' adoption of AI technologies, the impression of AI technologies on the investors' perception of risks and quality of decision, as

well as the steps that can be taken to further improve the process of investing by leveraging AI technologies.

METHODOLOGY

The research design is quantitative because the study aims to understand the impact of artificial intelligence on process of making investment decisions in the case of MFs among RIs and it is descriptive research. Primary data will be gleaned from RIs via structured questionnaire with AI-enabled investment platforms or digital advisory services. The 400 respondents will be selected using purposive sampling technique.

RESULT AND ANALYSIS

This section discusses the results of empirical analysis used to explore how artificial intelligence (AI) impacts RIs' investment decisions in MFs. Forty hundred people were surveyed.

Table 1 Descriptive Statistics

Variable	N	Mean	Standard Deviation
AI Adoption	400	4.12	0.69
Perceived Usefulness	400	4.21	0.64
Trust in AI	400	3.88	0.77
Risk Perception	400	3.54	0.81
Investment Decision Quality	400	4.08	0.71

The results of descriptive statistics show that overall, the participants had positive attitudes towards using artificial intelligence in MFs. When it came to the mean score of variables, Perceived Usefulness had the highest score value (Mean = 4.21), indicating that RIs tended to believe that AI platforms for investing are useful for making investment decisions. The AI Application for financial services was another, widely accepted field with a high mean value (Mean = 4.12) for AI Adoption. The Investment Decision Quality (Mean = 4.08) indicates that the respondents felt that AI aids in improving the investment outcome. In contrast, the mean answered for Risk Perception was lowest (Mean = 3.54), suggesting that while investors recognize there are some risks involved with using an investing platform based on AI, these risks are still relatively unimportant, as compared to the investments that investors hope to benefit from.

Table 2 Reliability

Construct	Number of Items	Cronbach's Alpha
AI Adoption	5	0.871
Perceived Usefulness	5	0.883
Trust in AI	5	0.854
Risk Perception	5	0.816
Investment Decision Quality	5	0.891

The internal consistency of the instruments was measured using Alpha and the results showed a value between 0.816 to 0.891, which is above the minimum value of 0.70. The results obtained in this study validate evidence of high internal consistency and reliability for all measurement

constructs that show consistency in measuring the latent variable related to the measured items in the questionnaire. Thus, the instrument is viewed to be reliable for the inferential statistical subsequent analyses.

Table 3 Pearson Correlation Matrix

Variables	AI Adoption	Perceived Usefulness	Trust in AI	Risk Perception	Investment Decision
AI Adoption	1.000				
Perceived Usefulness	.721**	1.000			
Trust in AI	.684**	.653**	1.000		
Risk Perception	-.312**	-.298**	-.341**	1.000	
Investment Decision	.774**	.759**	.702**	-.418**	1.000

Through correlation analysis, it can be seen that there are statistically significant relationships between all variables in the study. This study shows a positive correlation between AI Adoption and Investment Decision Quality (with $r = 0.774$ and $p < 0.01$). Large companies that have embraced AI technologies for investment decisions tend to have higher quality decisions. Perceived Usefulness ($r = 0.759$) is also positively related to an investment decision, with a high positive correlation, and so is Trust in AI ($r = 0.702$). Further, investment decisions (-0.418) is negatively correlated with Risk Perception, indicating that as investors' perception of risk rises, they are less willing to use AI powered investment platforms for MFs.

Table 4 Model Summary

R	R Square	Adjusted R Square	Standard Error
0.812	0.659	0.655	0.423

The model has a strong explanatory power on the investment decisions of RIs in the MF market, with an R^2 of 0.659, meaning 65.9% of the variance in stock MFI decisions is explained by the model. The above outcomes indicate that the total effect of factors of AI Adoption, Perceived Usefulness, Trust in AI, and Risk Perception has a significant overall effect on investment decisions.

Table 5 ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	126.53	4	31.63	176.84	.000
Residual	65.81	395	0.17		
Total	192.34	399			

The ANOVA test reveals that the model is statistically significant (with the F value = 176.84 and p value < 0.001), showing that the statistically significant variables provided the overall significant explanation in the investment decision of MFs by RIs.

Table 6 Regression Coefficients

Variable	Standardized Beta	t-value	Sig.
AI Adoption	0.412	8.96	.000
Perceived Usefulness	0.318	7.53	.000
Trust in AI	0.281	6.74	.000
Risk Perception	-0.162	-3.98	.001

AI Adoption was the best predictor variable of Investment Decision quality ($\beta = 0.412$, $p < 0.001$), followed by Perceived Usefulness ($\beta = 0.318$) and Trust in AI ($\beta = 0.281$). These results suggest that favorable investment decisions in the MF industry are more likely when these investors consider the AI Application as useful, trusted, and easily adopted. Risk Perception, however, had a significantly negative impact ($\beta = -0.162$, $p = 0.001$), indicating that any investment decisions made with the help of AI might be discouraged due to concerns about the reliability of the algorithm or data safety or a lack of understanding about technology.

Table 7 Differences in AI Adoption Based on Investment Experience

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.64	3	2.88	6.12	.000
Within Groups	186.54	396	0.47		
Total	195.18	399			

The One-Way ANOVA results show that the difference in the level of adoption of AI is statistically significant among the various levels of investment experience ($F = 6.12$; $p < 0.001$). Investors with higher investment experience were more accepting and using AI empowered MFI irones as compared to relatively less experienced investors. The results reveal that a better understanding of financial markets has a positive impact on the attitude of using AI tools for financial investment.

DISCUSSION

It is important to note that, according to the study, AI has been playing a vital role in RIs' process of making investment decisions in the domain of MFs. The perception of investors suggests that AI investment websites have the potential to boost investing decision-making, adjust portfolios, and give insights into the market. This will help to further roll out the smart technology in the financial institutions.

The findings further suggest that investments decision quality is positively affected by the adoption of AI, perception of the usefulness of AI and their trust in AI. If the investor has faith in an AI-driven advisory company he or she's willing to trust the AI assistance for rational and objective MFIs. The results indicate promising potential advantages for the application of AI to cut down on the behavioural biases and make more rational investment decisions.

But, on the other hand, the response of investors to risk perception is yet to come in. Some investors may be wary

of using AI investments, due to concerns about the potential hazards associated with AI investing and mistrust of the reliability of AI-driven investment recommendations. These challenges need to be addressed to assure investors, invest in AI-powered financial services and make it more accessible.

Overall, the research shows how much potentially would be saved in terms of the efficiency of investing in MFs, and how investment decisions could be supported with AI. Knowing the above, the MF companies and fintech companies need to look towards offering investors a plain, safe and user-friendly AI solution and public awareness on part of the investors should be raised to ease the journey of the investors of using AI-based investment platforms.

CONCLUSION

Based on their study the researchers have concluded that Artificial Intelligence has indeed revolutionized the Investment decision-making of RIs in the context on the investment process of the MFs has made this process more quality, accurate and efficient. AI investment platforms help investors process the information of the market and navigate investment options, improve decision making and minimize behavioural biases. The finding also indicates that people's confidence in investment, as well as their perceived usefulness and trustfulness, are crucial for the success of investing advisory system applied by AI. Overall, AI is a valuable tool in the financial sector's effort to become even more digital and to make informed and rational investments in the MFs.

RECOMMENDATIONS

One of the most important things for MF companies and fintech firms to do is to develop a platform that investors can use and trust, is transparent, secure and conveniently easy to use with the help of AI technology. Financial institutions are also advised to beef up investor education and awareness promotion programs to better educate investors on AI-driven investment services and its benefits. Furthermore, there is a need for more robust best practices and codes of conduct regarding AI's application in financial services that would ensure that investors minimize risks and information regarding algorithms and their methods remains confidential and transparent. These measures should lead to more investments by AI-powered investing platforms in improving RI trust, a development that will likely lead to more informed and efficient investing decisions by RIs..

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