



Robo-Advisors and AI-Driven Investment Decision Making: An Integrated Technology Acceptance and Trust-Based Structural Framework in the Indian FinTech Context

Deepa Iyer^{1*} and Bhupendra Bahadur Tiwari²

^{1, 2} School of Economics and Commerce
CMR University Bangalore, India
deepa.iyer@cmr.edu.in

Abstract. The growth of the financial market drastically affected by the infusion of artificial intelligence and accelerated the acceptance of Robo-advisors—algorithm-driven platforms that provide automated portfolio management and investment recommendations. While prior research has examined technology adoption, behavioural finance, and Robo-advisor performance separately, limited studies integrate these perspectives into a unified empirical framework. This aims to assess the effect of perceived usefulness, perceived ease of use and trust on adoption of robo advisory on investment decision. Data required for this research was collected using the questionnaire from 324 retail investors in India. Outcome of the study confirmed influence of perceived usefulness, trust in AI, financial literacy, and regulatory confidence on Robo-advisor adoption, explaining 62.4% of the variance in adoption intention ($R^2 = 0.624$, $p < 0.001$). Adoption intention, in turn, significantly affects investor satisfaction and willingness to use hybrid advisory models.

Keywords: Perceived Ease of Use (PEU), Perceived Usefulness (PU), Trust, Robo Advisor and Investment Decision

1. Introduction

The rapid digital transformation particularly through the artificial intelligence, machine learning and blockchain etc has defined the financial services and accelerated the growth of financial technology (Fintech). This transformation changed the entire financial market landscape and enhanced the operational efficiency, improved customer experience and reduced transaction cost significantly. Among these robo advisory services have introduced the standard model of wealth management though the algorithm

driven recommendation and automated portfolio management. This has brought a structural shift in the financial advisory activities enabled the investors to get customised suggestion on diversified investment portfolios at the lower cost.

Adoption of algorithms adopted in the robo advisory system offered a greatest convenience with intelligent investment decision support. Growing adoption of robo advisory services increased the participation of retail investors witnessed the improved the quality and perceived usefulness this technology. Flexibility and continuous portfolio monitoring through the smart phones experienced the remarkable expansion of capital market. Success of digital financial infrastructure enhanced the consumer confidence and created demand for investor friendly investment advisory services. This extends the existing knowledge to the domain of intelligent financial advisory services and enrich the literature in the investment field. The rapid innovation in the financial market gave way for the introduction of robo advisory platforms which acted as an alternative for traditional financial advisory services. Large number of investors embraced the new invention due to the efficiency and convenience and few even hesitated due to reliability and absence of human touch. Although the previous studies have examined the technological acceptance in different financial services but limited attention paid on the robo-advisory investment recommendation in the emerging economies. Absence of empirical evidence on robo advisory acceptance in the investment field constrained the development of strategies by the policy makers, institutional heads and fintech companies. This study intends examine the usefulness of technology, easy to use the technology and trust on Robo-Advisor Adoption and Investment Decision-Making (RAIDM).

2 Literature review

2.1 Perceived Usefulness and Robo-Advisor Adoption & Investment Decision-Making

Perceived usefulness considered to be most influencing factor on adoption behaviour as per the model proposed about accepting technology by the people (TAM) (Davis, 1989). According to Davis, (1989) endorsed that perceived benefits of robo advisory shown drastic effect on the investor belief and improved the investment quality and facilitate the efficient portfolio management. Singh et al. (2025) reported that attitude towards robo advisory based investment platform positively affected by the attitude and generated reasonable investment outcomes. AI enabled robo advisory offers practical investment decision tool simplify the investment analysis and enhances the ability to effectively process the complicate information (Chen et al. 2025).

H₀₁: *Perceived Usefulness has a favourable influence on Robo-Advisor Adoption and Investment Decision-Making.*

2.2 Perceived Ease of Use and Robo-Advisor Adoption and Investment Decision-Making

Davis (1989) proposed that, minimum knowledge, minimal effort and easiness to use has exerted the positive influence on the acceptance of investment-based technology. Investors perception of the simplicity and understanding of algorithms-based recommendation exerts a significant effect on the adoption of robo advisory support for investment decision. This belief will maximise the trust on the information offered by the robo advisory system and belief about the user frilliness and easy to operate enhances the investors learning barriers. Yi T. Z et al. (2023) reinforced the significance of user's satisfaction about the user friendliness of robo advisory platforms and suggested to simplify the interaction and provide understandable recommendations (*Singh et al. 2025*).

H2: Perceived Ease of Use has a positive effect on Robo-Advisor Adoption and Investment Decision-Making.

2.3 Trust and Robo-Advisor Adoption and Investment Decision-Making

Trust has emerged as an influential determinants of technology adoption in AI-enabled financial services and due algorithm integrity, data protection of machine generated recommendations. Steve Senteio and Jason Van Scotter (2024) proposed that, trust positively influences and strengthens the satisfaction and willingness to adopt the robo investment advisory system. Verma et al. (2025) explained that investors intention to adopt financial advisory system negatively affected by the privacy, uncertainty but favourable attitude offered a great support to the intention of adopting robo advisory investment system. It is also believed that robo advisory system improves the effective communication and ethical aspects of AI generated reaccommodation's.

H3: Trust has positive effect on Robo-Advisor Adoption and Investment Decision-Making.

3. Methods

This investigation explored the how perceived usefulness, perceived ease of use, and trust contribute to the adoption of robo-advisory platforms. The quantitative method like regression analysis, Cronbach alpha and descriptive statistics used to examine the possible effect of perceived usefulness, perceived ease of use and trust on adoption robo advisory system in investment decision. Data collected through the questionnaire verified by Cronbach alpha to confirm the clarity; relevance of the items used in the questionnaire. Participants were selected using the convenience sampling and a valid response of 324 obtained and included for analysis. SPSS was used to assess the proposed inter connection between the variables.

4. Result and discussion

Table 1. Demographic Composition

Variable	Category	Frequency	Percentage (%)
Gender	Male	182	58.3
	Female	130	41.7
Age	Below 30 years	96	30.8
	30–45 years	138	44.2
	Above 45 years	78	25.0
Education	Graduate	122	39.1
	Postgraduate	190	60.9

Source: Authors own work

Table 1 exhibits the demographic composition of 324 participant included in the study. The collected the data from the people of Bangalore found that, male respondents were the predominant composition of the study sample accounting for 58.3% of total participants, large porporino of the study sample (44.2%) are belongs to the age category of 30-45 and highest share of respondents (60.9%) have attained the postgraduate degree.

Table 2. Descriptive Statistics

Variable	Number of Items	Mean	Standard Deviation
Perceived Usefulness (PU)	3	4.12	0.61
Perceived Ease of Use (PEOU)	3	4.05	0.67
Trust (TR)	3	3.98	0.72
Robo-Advisor Adoption and Investment Decision-Making (RAIDM)	3	4.08	0.65

Source: Authors own work

From the above table it clear that, perceived usefulness (PU) showing the mean value of 4.12 and standard deviation of 0.61 indicates that majority of the participants considered robo advisory investment decision useful and mean of 4.05 and standard deviation of 0.67 indicated that investors considered robo-advisory is easy to use and majority of the respondents have felt robo advisory system are trust worthy (Mean 3.98 and 0.72). additionally, robo advisor adoption and investment decision making obtained a mean value of 4.08 and standard deviation of 0.65.

Table 3. Reliability Analysis Using Cronbach’s Alpha (n = 312)

Construct	Number of Items	Cronbach’s Alpha	Decision
Perceived-Usefulness (PU)	3	0.82	Good Reliability
Perceived-Ease of Use (PEOU)	3	0.79	Acceptable Reliability
Trust (TR)	3	0.85	Good Reliability
Robo-Advisor Adoption and Investment Decision-Making (RAIDM)	3	0.88	Good Reliability

Source: Authors own work

Table 3 witnessed that, all the constructs have received the alpha value greater than the 0.70 accepted level and it indicates that, all the constructed used in the study are highly reliable and showing greater internal consistency to measure intended variables.

Table 4a. Model Summary

R	R ²	Adjusted R ²	Std. Error of the Estimate
0.812	0.659	0.655	0.381

Source: Authors own work

Table 4a presents the model summary of regression result presents that all the variable collectively contributes positively in promoting the adoption behaviour of robo advisory in investment decision making. Correlation coefficient (R=0.812) demonstrates the strong positive relationship and adjusted R square value (R² = 0.659) demonstrates the significant prediction ability of model. It is confirmed that, robo advisory adoption in the investment decision making explains the significantly explained by the perceived usefulness, perceived ease of use and trust. It is interpreted that, these three variables jointly predict 65.9 percent of variation in the robo advisory adoption behaviour.

Table 4b. Regression Coefficients and Hypothesis Testing Results

Predictor Variable	Stand-ardized Beta (β)	t-value	p-value	Hypothesis Result
Perceived-Usefulness (PU)	0.382	7.840	0.000	Supported
Perceived-Ease of Use (PEOU)	0.214	4.660	0.000	Supported
Trust (TR)	0.421	8.910	0.000	Supported

Source: Authors own work

Table 4b explains the contribution of perceived usefulness, perceived ease of use and trust on Robo-Advisor Adoption and Investment Decision-Making (RAIDM). Among the three variables trust demonstrated the strong determinant power with β =

0.421, $t = 8.910$, $p < .001$, this explains that trust in the robo advisory system strongly predicts the willingness to follow the AI based investment recommendation. This results consistent with the results of (Senteio & Van Scotter, 2024; Gao et al., 2025). Perceived usefulness exhibited the second highest beta value ($\beta = 0.382$, $t = 8.40$, $p < .001$), where one percent of change in the perceived usefulness predicts 38.2 percent of change in the adoption intention of robo advisory investment decision. This reflects that usefulness acts as a primary influencer on the adoption behavior of robo investment advisory platform. This result reflected the consistency with outcome of (Davis, 1989) but result is contradictory to the results of (Singh et al., 2025; Chen et al., 2025). Finally, perceived ease of use also exhibited the significant and positive ($\beta = 0.214$, $t = 4.660$, $p < .001$) effect on Robo-Advisor Adoption and Investment Decision-Making, this explains that robo advisory investment platforms are simple and easy to understand and follow and reduced the burden of investors significantly, positively motivated to adopt the robo advisory system. This result supported the results (Yi et., al and Singh et al., 2025). This endorsed that, enhancing the privacy and safety concerns will benefit the investors, flexible and reliable information improves the benefits and creating more awareness might increase acceptance rate of robo advisory services.

5. Conclusion

The observations of this research proved that three core constructs considered in the study—trust, perceived usefulness, and perceived ease of use—significantly influences on the investors' acceptance of robo-advisory services in the investment-related decisions. The statistical results confirms that all the three factors have positively affects willingness of investors to accept the robo advisory platforms. Higher level of financial and digital knowledge has encouraged the investors to explore the technology enabled investment solutions to maximise their returns and digital literacy boosted the confidence of investors to utilise the advanced portfolio management platforms. Among the three factors, trust emerged as a stronger factor affecting the investor followed by the perceived usefulness and perceived ease of use. Financial and digital knowledge enabled by technological innovation have fostered the adoption of digital financial services and improved digital competency improved the user's confidence in using robo-advisory platform. Practical value of robo advisory services improved investors efficiency, resulted in minimum effort to learn operate the robo advisory systems. Integration of technological innovation facilitated the robo advisory platforms by simplifying the usage accelerated usage of technology driven financial services.

References

1. Chen, A., Wang, S., Mehta, A. M., Asif, M., Xu, S., & Shahzad, M. F. (2025). FinTech adoption for ESG integration through robo advisors, personalization,

- and perceived trust. *Scientific Reports*, 15, 31125. <https://doi.org/10.1038/s41598-025-17046-6>
2. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
 3. Gao, Y., et al. (2025). Drivers of robo-advisors adoption in financial services: A meta-analysis. *International Journal of Bank Marketing*. (Use the final volume, issue, and page numbers from the published article before submission.)
 4. Senteio, S., & Van Scotter, J. (2024). Customer trust and satisfaction with robo-adviser technology. *Journal of Financial Planning*.
 5. Singh, S., et al. (2025). Investing in the future: An integrated model for analysing user adoption of robo-advisors. *Journal of Modelling in Management*, 22(1), 158–186.
 6. Verma, B., et al. (2025). Artificial intelligence attitudes and resistance to use robo-advisors among retail investors in India. *Frontiers in Artificial Intelligence*, 8.
 7. World Economic Forum. (2022). *The Future of Global FinTech*.
 8. Yi, T. Z., Rom, N. A. M., Hassan, N. M., Samsurijan, M. S., & Ebekozién, A. (2023). The adoption of robo-advisory among millennials in the 21st century: Trust, usability and knowledge perception. *Sustainability*, 15(7), 6016. <https://doi.org/10.3390/su15076016>

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

