



AWARENESS AND PERCEPTION OF ROBO ADVISORY SERVICES AMONG INVESTORS IN MALAPPURAM

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ABSTRACT

Artificial Intelligence (AI) technology is changing the financial industry by providing inexpensive, automated, and customized tools to individual and institutional investors, revolutionising the way people make financial decisions. This study intends to evaluate the awareness and perception of robo-advisory services among investors in Malappuram district. Robo-advisors are computer-generated algorithms that provide Investment advice, Portfolio management, and financial planning solutions to customers without requiring much intervention from a human advisor by utilizing Artificial Intelligence and Data Analytics. This study also aims to study the perception of acceptance, its influencing factors, and the perception of investors towards acceptance of robo-advisory services.

It was an integrated descriptive research design. Data was obtained from 120 investors made with the help of purposive sampling, using a structured online questionnaire. Data analysis was done using descriptive statistics, weighted mean analysis, and a one-sample test. The results show that the investors had a positive perception towards the use of robo-advisory, and the most preferred domain where robo-advisory services would be used was in Portfolio Management and Financial Planning. The overall mean perception score stood at 3.605 (where '3' is the neutral point) which was significantly more than the neutral point. The perception of investors in Malappuram was found to be favourable, thus indicating the potential for a higher penetration rate of robo-advisory services, also as increasing awareness and information, robust security systems, transparency, and user trust are essential for larger adoption.

KEYWORDS: Robo-advisory services, Investor Awareness, Artificial Intelligence, Investor perception, Adoption, Trust

1. INTRODUCTION

Artificial Intelligence (AI) is interrupting the financial services sector by improving decision-making, introducing efficiency, and providing personalisation to customers. AI's capacity to process, analyse, and interpret data to generate useful results is what makes it disruptive to this industry (Poornima et al., 2025). Artificial Intelligence is simply technology that can perform certain activities that typically require human intelligence. The financial industry's technological revolution has been made possible by Artificial Intelligence. The financial industry has seen a significant transformation in how assets are managed, credit ratings determined, fraud detected, and investment advice delivered in the last decade thanks to AI (Gyau, 2024). With the advent of generative AI and ChatGPT, artificial intelligence has become mainstream and is now well-known to the general public. The financial field's adoption of AI has been growing in recent years since it has helped financial institutions optimise decisions, enhance the accuracy of forecasts, and reduce human prejudices in portfolio management (Upadhayay & Bhargava, 2025). Artificial Intelligence is utilised in various fields, including education, health, and banking, to perform certain duties, which leads to making better judgments. Adoption of AI in the financial sector has gained prominence as it has enabled financial institutions to optimise decision-making, improve the accuracy of forecasts, and reduce human prejudices in portfolio management (Upadhayay & Bhargava, 2025).

Robo-advisors have disrupted the financial market as they present an alternative for lower-end investors who are comfortable transacting online but want the guidance of a personal investment adviser, offering investment advice and discretionary management services to individuals without the experience and expertise of a human adviser, using algorithms and automated asset allocation as well as distribution processes advertised as being in the best interests of their clients (Fein, 2015).

AI financial advisory services enhance productivity, reduce costs, and assist in making better financial decisions. However, there were also a number of challenges related to privacy, child protection, security and safety. Individual innovativeness, perceived risk and technology anxiety have been identified as the significant determinants of indecision in the adoption of robo-advisors by Indian investors (Nain et al., 2024). Most of these studies explore technological efficiency, perfection, and performance enhancement of



AI-based advisory service systems. The current study investigates the perception and awareness of robo-advisory services amongst investors with reference to some parameters.

2. LITERATURE REVIEW

2.1 Artificial Intelligence

Artificial intelligence (AI) is an area of computer science that deals with machines that are capable of behaviours which, if they have been realised as intelligent agents, would tend to make them successful. Common AI comprises well-structured reasoning, knowledge and planning, learning and communication, perception and motion & manipulation. It is about the science and engineering of making intelligent machines, especially intelligent computer programs (Saini, 2023). Machine learning is a branch of AI that establishes the theory that your device does not need to be explicitly programmed for specific tasks but learns and enhances itself via experience. Machine learning algorithms are categorised into several types based on unsupervised, supervised, and reinforcement learning. In an unsupervised learning algorithm, it does not use any classified information to act without guidance (Saini, 2023). The key subdomain of Artificial Intelligence (AI) is Natural Language Processing (NLP). It serves as a bridge between human communication and operations with machines. NLP has become essential because of the rapid growth of digital text data and the need for smart systems that can understand human language and generate similar writing in various fields such as healthcare, finance, education and e-commerce (Torfi et al., 2020).

2.2 AI in financial services

AI has changed our finance sector. Such technology will eventually affect traditional approaches in financial practices such as trading, risk management, fraud detection, and render personalised financial services. A qualitative study of robo-advisors among Indian investors found awareness limited, and respondents considered the principles behind robo-advice to be an assistance in portfolio management rather than a complete substitute for human advisers. Key worries included cost-effectiveness, building trust, securing data and behavioural biases. (Ankita Bhatia, 2021). The growing adoption of machine learning and AI across financial services, including robo-advisory, emphasises the need for explainable AI and robust governance as these systems become more complex (Vuković et al., 2025)

2.3 AI in Investment

There are many previous studies on AI in investment. A quantitative study conducted by Shumaila Fathima and Charoborty Madhumita in 2024 was based on Indian investors. This quantitative study of Indian investors found that trust, anxiety, performance expectancy, and preference for human advisers all significantly shaped behavioural intention to adopt robo-advisors. It is one of the more directly relevant adoption papers for explaining why people do or do not use the service. (Fatima & Chakraborty, 2024). AI technologies, particularly machine learning, natural language processing (NLP), and predictive analytics, are revolutionising how financial institutions analyze data and make investment decisions. Machine learning models enhance data processing capabilities, allowing for the analysis of large datasets to identify trends and inform strategies (Onyenahazi & Antwi, 2024). Despite the advantages of using AI in investment decision-making, there are some limitations. One of the key challenges associated with the use of AI in forecasting lies in its economic feasibility. While a significant number of studies report high accuracy rates, the actual profitability of such models after transaction costs, model overfitting, and data snooping are taken into consideration rarely prove to be profitable in practice (Mangat et al., 2022; Reschenhofer et al., 2019).

2.4 Awareness of robo-advisory services

Robo-advisors or robo-advisory services are digital financial advisory platforms providing automated and algorithm-based portfolio management advice with little to no human interaction. These platforms typically assess an investor's financial goals, risk tolerance, and personal preferences through an online questionnaire and then recommend or automatically manage a diversified investment portfolio. (Jung et al., 2018; Sironi, 2016). Robo-advisors offer their services through an Internet interface or platform. A key characteristic of a robo-advisor is the absence of any human contact between the advisor and investors. Robo-advisors are designed to avoid the necessity of a personal advisory relationship with the client (Fein, 2015).

There are only a few studies conducted on Robo-advisory services across the globe and a few studies in the Kerala context. This study aims to explore the awareness of individual investors about Robo-advisory services in Malappuram. In addition to this, this study aims to extend the body of literature on the current state of Robo-advisory services...

3. RESEARCH QUESTIONS

1. What is the level of awareness of robo-advisory services among investors in Malappuram?
2. What is the key information that makes investors' perceptions different?
3. What are the Major challenges and opportunities with robo-advisory services?

OBJECTIVES OF THE STUDY

- 1- To assess the awareness level of investors about Robo-advisory services
- 2-To examine investors' perception towards acceptance of robo-advisory services



3-To identify the factors influencing awareness of AI-based financial advisory services

4- To know investors' opinion about adoption of robo-advisory services

5. RESEARCH GAP

Only a limited number of previous studies have been conducted on awareness of robo-advisory services among investors; the main reason behind this is the recent emergence of robo-advisory services. By analysing these studies, they mainly examined investors' technological knowledge, risk perception of investors, etc. Moreover, many studies have been conducted in developed countries. Only a few studies focus on emerging markets like Kerala. Therefore, a clear study is needed regarding investors' awareness and perception of robo-advisory services in Malappuram. Thus, this study attempts to bridge this gap by conducting detailed research on this area.

6. RESEARCH METHODOLOGY

6.1 Research Design

This study adopted a quantitative, descriptive survey design to study awareness of robo-advisory services among individual investors in Malappuram district. In this study, a structured questionnaire was used to gather data from investors residing in Malappuram district who are active participants in financial service activities.

6.2 Population and Sampling

The study population was a group of investors who actively engaged in financial markets or services. The sample was selected using a purposive sampling method by meeting the criterion of having at least one year of experience in the investment field. A total of 120 responses were obtained, which aimed to assess their level of awareness and perception regarding Robo-Advisory services.

6.3 Data Collection and Research Instruments

The data were collected through a structured questionnaire that was shared online. The online questionnaire was created using Google Forms, and the links were shared via investor communities, investors' WhatsApp groups, and Telegram investment groups. This study used five-point Likert scales to measure all the study's constructs. This study used Microsoft Excel, a one-sample t-test, and the IBM Statistical Package for Social Sciences (SPSS) for data analysis

DATA INTERPRETATION

A survey of 120 respondents was conducted to examine investors' awareness and perception of robo-advisory services as a channel of making investment decisions, as well as the factors affecting their choice of using automated online investment tools as a channel of making investment decisions. Considering the change in financial advisory services due to the entry of AI in the Indian market, the survey aims to highlight opportunities for a coordinated state-level approach to regulating automated online investment platforms.

The level of awareness varied by Gender, Age group and Income levels

Demographics variable	Category	Number of individuals	Percentage
Gender	Male	72	60
	Female	48	40
age	20–30 Years	42	35
	30–40 Years	39	32.5
	40–50 Years	24	20
	Above 50	15	12.5
	Below 5 Lakhs	39	32.5
Income level	5 – 10 Lakhs	39	32.5
	10 – 15 Lakhs	24	20
	15– 20 Lakhs	12	10
	Above 20 Lakhs	6	5

Table 1

Income-wise willingness to use robo-advisory services

The income-wise analysis reveals investors' willingness to use robo-advisory services varies only marginally across income categories. Investors with income between ₹ 5–10 lakh have the highest proportion (23%) willing to use robo-advisory services. The second largest category is those earning between ₹15–20 lakh (22%), and third, above ₹ 20 lakh (20%). Investors earning ₹10lakh-15 lakh per year form about 19% of the total investor base and those making less than ₹5 lakh constitutes nearly 16%.

Sources used by investors for making investment decisions

The results indicate that a large portion (39%) of investors do their own analysis to invest in the market. Approximately 28% of investors make investment decisions based on advice from their financial advisors. Only 11% of investors avidly read newspapers,

media reports, and TV shows to obtain investment tips and advice. Approximately 20% of investors depend on their friends and family to help them make investment decisions.

Investors prefer robo-advisory services across various investment activities

The analysis shows that portfolio management is the most prevalent activity for robo-advisory, with 61 respondents (51%), followed by financial planning (58, 48.3%). A total of 43.3% reported risk management, 39.2% reported trading and investment avenue selection, and 36.7% reported other. The second-lowest response was for tax planning (24.2%). Overall, respondents mainly associate robo-advisory services with portfolio management and financial planning.

Investors consider various features of robo-advisory platforms

The results show that security, privacy and reliability of the platform were the most valued features, with 35% of the respondents selecting them. Personalised recommendations and user-friendly apps were given much less importance compared to security, privacy and reliability of the platform. Low service charges, easy registration and chatbot support were given relatively lower importance. Investor trust, privacy and reliability of the platform were more important than convenience-related features.

STATEMENTS	SD	D	N	SA	A	WEIGHTED MEAN
Robo-advisory services help me make better investment decisions.	7	13	28	43	29	3.62
Robo-advisory services improve the quality of investment advice.	6	12	27	46	29	3.67
Robo-advisory services provide transparent investment recommendations.	8	14	31	41	26	3.53
Robo-advisory services save time in making investment decisions.	5	9	23	44	39	3.86
Robo-advisory services improve my confidence in investment decisions.	9	15	32	39	25	3.47
Robo-advisory services provide personalised investment recommendations	6	12	25	48	29	3.77
Robo-advisory services make investment management more convenient and accessible.	7	14	27	45	27	3.59
Robo-advisory services are cost-effective compared with traditional financial advisory services.	10	16	30	40	24	3.43

Table-2

SD – Strongly Disagree | D – Disagree | N – Neutral | A – Agree | SA – Strongly Agree

A one-sample *t*-test was conducted to determine whether the overall mean perception of investors towards robo-advisory services was significantly greater than the neutral value of 3.

Hypotheses

H0- There is no significant difference between the mean perception of investors towards robo-advisory services and the neutral value. ($\mu=3$)

H1- The mean perception of investors towards robo-advisory services is significantly greater than the neutral value. ($\mu>3$)

N	Mean	SD	Ci For μ	T-Test	P-Value
120	3.605	1.111	(3.404, 3.806)	5.966	1.28×10^{-8}

Table-3

Decision

Since $p < 0.001$, the null hypothesis is rejected. The overall mean perception score of 3.605 is significantly greater than the neutral value of 3 ($t = 5.966p < 0.001$). Therefore, respondents demonstrate a significantly positive perception of robo-advisory services.

Summary of Findings

In light of the analysis, the following are the findings of the study

1. Younger and middle-class participants predominated in the study. Of the respondents, 60% were male, and 40% were female. The largest age group was 20–30 years (35%), followed by 30–40 years (32.5%). Many were from the lower- and middle-income groups, reflecting that the study sample mainly consisted of economically active investors.

2. All income groups were interested in robo-advisory services, and this was especially true of those with an income of ₹5–10 lakh, followed by those earning more than ₹20 lakh. However the majority of respondents still made their own investment decisions, with financial advisors, friends, and family as their second choice for guidance. This indicates that although income affects the likelihood



of using AI investment advice, the trust in personal judgment and traditional investment advice sources outweighs that of robo-advisors

3. Portfolio management and financial planning were the major areas preferred by respondents for robo-advisory assistance. The most preferred area was portfolio management (51%), followed by financial planning (48.3%). Risk management (43.3%) and trading (39.2%) were also highly preferred, while tax planning was comparatively lower (24.2%). This indicates that the respondents view robo-advisory mainly as a tool for systematic investment and other portfolio-related decisions.

5. Security and privacy were identified as the most important AI platform features. The most important aspect was high security and privacy (35%), followed by personalised recommendations (19%) and user-friendly applications (18%). Relatively less importance was given to Chatbot Support and Easy Registration. This finding suggests that investors value trust, security of personal and financial data, and the reliability of the platform more highly than convenience.

6. Investors had a positive mindset about robo-advisory services, especially in terms of saving time in making investment decisions (weighted mean = 3.86), making personalised recommendations (3.77), and ensuring the quality of investment advice (3.67). The overall mean perception score was 3.605, which is significantly higher than the neutral score of 3 ($t = 5.966$; $p < 0.001$), thus rejecting the null hypothesis and proving investors have a positive perception of robo-advisors.

7. Transparency and trust need to be improved. The overall perception towards robo-advisory services was highly positive; however, the mean scores for transparency of investment advice (3.53) and increased confidence in investment decisions (3.47) were slightly lower. This indicates that even though people generally seem positive about the technology, their doubts about transparency and trust in AI-driven recommendations could impact overall uptake of robo-advisory platforms.

8. The overall findings of the study suggest that the perception of investors towards the robo-advisory services is positive and statistically significant. The one-sample t-test also shows that the overall perception is significantly different from the neutral level. This means that the alternative hypothesis is accepted, and we can conclude that the investors' perception towards robo-advisory services is significantly positive. But wider adoption will require increasing awareness, security and privacy, transparency, trust and confidence with investors.

LIMITATIONS OF THE STUDY

The following limitations occurred during the research study, the limitations are as follows.

1. This study is limited to the Malappuram district.
2. This study is based on a sample size of only 120 respondents.
3. Time and cost were other limiting factors that were insufficient to conduct a detailed survey.
4. Since Robo Advisory is yet to gain pace in India, there is not much awareness amongst investors.

CONCLUSION

Artificial intelligence is advancing the financial industry by enhancing efficiency, accuracy, and personalisation, thus contributing significantly to fostering a growing investment culture in India. This study aims to analyse the awareness and perception of robo-advisory services among the investors of Malappuram district. The results suggest a positive perception of investors towards robo-advisory services. One-sample t-test was used to determine if the overall mean perception score of 3.605 was significantly different from the neutral value of 3, and it was. Thus, the null hypothesis was rejected, and the positive perception of investors towards robo-advisory services is statistically significant. The study also revealed that investors' positive attitude toward robo-advisory services is due to their ability to save time and enhance the quality of investment guidance. Despite these benefits, concerns surrounding security, privacy, transparency, trust, and confidence in automated recommendations continue to exist. In conclusion, the study suggests that while there is significant potential for the adoption of robo-advisors among investors in Malappuram, the widespread acceptance of these services will likely require greater awareness, robust data security and privacy measures, transparency in investment recommendations, and enhanced trust and confidence in AI-driven financial advising.

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