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Perception of Retail Investors on Usage of Ai Chatbots on Esg Principles as an Effective Tool for Investment Decision in India

Sowmiya Asokan
Amity University Online, Noida, Uttar Pradesh

***Abstract* – The study investigates this crucial intersection of Indian retail investors truly perceive, trust, and ultimately act on the advice of an AI chatbot when the recommendation involves a moral choice, like investing for a sustainable future. Most of the respondents agree that they are willing to pay an extra fee for AI service providing highly detailed and personalized ESG analytics. By exploring their perceptions of transparency, risk, and the AI's ability to navigate complex ESG data, we seek to understand whether the chatbot is seen as a dependable guide or just a digital distraction in the journey toward responsible wealth creation.**

***Keywords* – ESG, AI Chatbot, Investment Decision, Retail Investors.**

I. INTRODUCTION

The investment decision for retail investors in India is often connected to various psychological factors. Historically, traditional advisory over financial investment decision is considered highly preferable by the investors until AI Chatbot entered the fintech industry. More number of investors are adding on every minute through brokerage apps which are popular now in India like Zerodha, AngleOne, Kite, Groww etc. These investors are not always professionals but are flooded with lot of information and charts that are hard to understand while AI chatbots provide user friendly environment as well as help the investors with solving and soliciting any data needed handy. Introducing ESG principles in the investment decisions especially to predict the greenwashing of companies and detect them using AI chatbot is considered as one of the best advantages of using the AI Chatbots. ESG demands not financial smarts but ethical judgement and qualities traditionally reserved for human wisdom. This study suggest the investment perception of retail investors using AI in their decisions especially in application of ESG principles in a long run.

Objectives:

- To measure the current level of awareness, usage and self-reported proficiency of Indian retail investors with AI chatbots on general investment and ESG specific queries.
- To understand the influence of AI chatbots the inclusion of Environmental, Social and Governance (ESG) factors in retail investor's portfolio selection process.
- To identify the psychological factors and beliefs that drives and inhibits the intention to act on investment advice generated by an AI chatbot.

II. LITERATURE REVIEW

Jangra R (2025) suggests that complex transformation fueled by AI, with emphasis on its implications on retail investor participation, financial inclusion, and ethical governance. AI-facilitated platforms like robo-advisors, algorithmic portfolio management platforms, and smart chatbots are increasingly leveling the playing field for access to tailored financial services. Mohapatra, N., Shekhar, S., Singh, R., Khan, S., Santos, G., & Carvalho, S. (2025) suggests the robo-advisory service providers may emphasize developing the algo ensuring trust, usability, and friendly interface in a manner that tends to minimize the perceived risk and emotional arousal leading to the use of robo-advisors pushing the intention of the investors towards sustainable investment.

Scope Of The Study

The study will focus specifically on AI Chatbots and Robo-Advisors used for gathering information, research, and generating investment recommendations. It will not cover complex algorithmic trading systems or AI used solely for back-office operations. This study confines the level of confidence investors place in the AI-generated advice, investor's requirement for the AI to justify its recommendations, extent to which AI usage is seen to increase or reduce investment risk, likelihood of increasing future reliance on these tools.

III. METHODOLOGY

The sampling used in the study is cluster sampling method. The population is clustered 10 per state covering north, south, east, west of overall geographic locations. Primary data is collected through interviewing and questionnaire method. Secondary data of the study is collected through various books, unpublished records, journals and thesis.

Variables

Both dependent and independent variables are involved in the study. The dependent variables are awareness, acceptance, familiarity and willingness. The independent variables are gender, age, income, investment decisions.

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LIMITATIONS

- The study is limited to 7 states of India covering north, south, east and west geography including states of Tamil Nadu, Punjab, Uttar Pradesh, West Bengal, Karnataka, Gujarat, Maharashtra.
- The study is confined to 70 respondents only.
- The findings of the study are true and results are based on assumptions.

IV. DATA AND INTREPRETATION

The main purpose of the research is to conduct study on finding the perception and awareness of AI Chatbot and its application on ESG principles for making a financial decision among the retail investors of India.

Table No: 1
Frequency distribution test on awareness or usage of AI Chatbots (within brokerage app) for investment purposes

Awareness or usage of AI chatbots (within brokerage app) for investment purposes					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Highly Aware	4	5.7	5.7	5.7
	Aware	39	55.7	55.7	61.4
	Neutral	15	21.5	21.5	82.9
	Somewhat aware	8	11.4	11.4	94.3
	Not aware	4	5.7	5.7	100.0
	Total	70	100.0	100.0	

Source: Primary Data

The Table-1 shows the frequency distribution test on awareness or usage of AI Chatbots (within brokerage app) for investment purposes. Most of the respondents are aware about the AI chatbot available in brokerage apps.

Table No: 2
One-way Anova on Various Factors of Investment Perception on AI Chatbots

One Way Anova On Various Factors Of Investment Perception On Ai Chatbots						
		Sum Of Squares	Df	Mean Square	F	Sig.
Ai Chatbots Offer Faster And More Efficient Investment Advice Than Human Advisors	Between Groups	5.486	4	1.371	1.787	.142
	Within Groups	49.886	65	.767		
	Total	55.371	69			
I Trust The Investment Recommendations	Between Groups	1.457	4	.364	.603	.662
	Within Groups	39.243	65	.604		
	Total	40.700	69			
	Between Groups	2.086	4	.522	.792	.534
	Within Groups	42.785	65	.658		
	Total	44.871	69			
	Between Groups	5.475	4	1.369	1.592	.187
	Within Groups	55.896	65	.860		
	Total	61.371	69			
	Between Groups	20.982	4	5.246	6.600	<.001
	Within Groups	51.660	65	.795		
	Total	72.643	69			
	Between Groups	.380	4	.095	.126	.973
	Within Groups	49.062	65	.755		
	Total	49.443	69			
	Between Groups	8.157	4	2.039	1.598	.185
	Within Groups	82.928	65	1.276		
	Total	91.086	69			

Source: Primary Data

The Table-2 shows One-way Anova test on factors of Investment Perception on AI Chatbots. The factors of emotional regulation such as (AI chatbots offer faster and more efficient investment advice than human advisors, I trust the investment recommendations provided by an AI chatbot, I believe AI investment advice is mostly for younger and highly tech-savvy investors, I prefer an AI chatbot that clearly explains the reasoning behind its investment suggestions, AI chatbots are less prone to emotional bias (like fear or greed) than human investors/advisors, Using an AI chatbot for investment decisions increases my perceived financial risk) have significant value more than 0.05%, thus they are insignificant with each other and strongly satisfies alternative hypothesis. The factor of emotional regulation which is (I worry about the security and privacy of my financial data when using AI chatbots) having significant relationship and it satisfies the null hypothesis with significant value less than 0.05%.

Table No: 3
One-way Anova on Various Factors on Perception of ESG Principles and AI Chatbots

One Way Anova On Various Factors On Perception Of Esg Principles And Ai Chatbots						
		Sum Of Squares	Df	Mean Square	F	Sig.
I Believe Ai Can	Between Groups	7.674	4	1.919	3.131	.020

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Effectively Detect When A Company Is "Greenwashing" (Making False Esg Claims)	Within Groups	39.826	65	.613		
	Total	47.500	69			
Ai Chatbots Help Me Easily Find Relevant And Accurate Esg Data On Companies (E.G., Carbon Emissions, Labor Practices)	Between Groups	5.033	4	1.258	1.936	.115
	Within Groups	42.239	65	.650		
	Total	47.271	69			
An Ai Chatbot's Recommendation To Invest In An Esg Fund Is More Convincing Than A Human Advisor's	Between Groups	8.430	4	2.107	4.195	.004
	Within Groups	32.656	65	.502		
	Total	41.086	69			
The Use Of Ai Makes Esg Investing Less Complicated For A Retail Investor Like Me	Between Groups	17.618	4	4.404	8.187	<.001
	Within Groups	34.968	65	.538		
	Total	52.586	69			
I Would Be Willing To Accept Slightly Lower Returns If The Ai Chatbot Assures Me The Investment Has A Strong Esg Profile	Between Groups	.560	4	.140	.196	.940
	Within Groups	46.426	65	.714		
	Total	46.986	69			

Source: Primary Data

The Table-3 shows One-way Anova test on factors on Perception of ESG Principles and AI Chatbots. The factors of emotional regulation such as (I believe AI can effectively detect when a company is "greenwashing" (making false ESG claims), AI chatbots help me easily find relevant and accurate ESG data on companies (e.g., carbon emissions, labor practices), I would be willing to accept slightly lower returns if the AI chatbot assures me the investment has a strong ESG profile) have significant value more than 0.05%, thus they are insignificant with each other and strongly satisfies alternative hypothesis. The factor of emotional regulation which is (An AI chatbot's recommendation to invest in an ESG fund is more convincing than a human advisor's, The use of AI makes ESG investing less complicated for a retail investor like me) having significant relationship and it satisfies the null hypothesis with significant value less than 0.05%.

Table No: 4
Frequency Distribution Test on Willingness to pay an extra fee for an AI service providing highly detailed and personalized ESG analytics

Willingness to pay an extra fee for an AI service providing highly detailed and personalized ESG analytics

Willingness to pay an extra fee for an AI service providing highly detailed and personalized ESG analytics					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	14	20.0	20.0	20.0
	Agree	31	44.3	44.3	64.3
	Neutral	12	17.1	17.1	81.4
	Disagree	9	12.9	12.9	94.3
	Strongly disagree	4	5.7	5.7	100.0
	Total	70	100.0	100.0	

Source: Primary Data

The Table-4 shows the frequency distribution test on willingness to pay an extra fee for an AI service providing highly detailed and personalized ESG analytics. Most of the respondents agree that they are willing to pay an extra fee for AI service providing highly detailed and personalized ESG analytics.

Findings:

- Most of the respondents are aware about the AI chatbot available in brokerage apps.
- The factors of emotional regulation such as (AI chatbots offer faster and more efficient investment advice than human advisors, I trust the investment recommendations provided by an AI chatbot, I believe AI investment advice is mostly for younger and highly tech-savvy investors, I prefer an AI chatbot that clearly explains the reasoning behind its investment suggestions, AI chatbots are less prone to emotional bias (like fear or greed) than human investors/advisors, Using an AI chatbot for investment decisions increases my perceived financial risk) have significant value more than 0.05%, thus they are insignificant with each other and strongly satisfies alternative hypothesis. The factor of emotional regulation which is (I worry about the security and privacy of my financial data when using AI chatbots) having significant relationship and it satisfies the null hypothesis with significant value less than 0.05%.

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- The factors of emotional regulation such as (I believe AI can effectively detect when a company is "greenwashing" (making false ESG claims), AI chatbots help me easily find relevant and accurate ESG data on companies (e.g., carbon emissions, labor practices), I would be willing to accept slightly lower returns if the AI chatbot assures me the investment has a strong ESG profile) have significant value more than 0.05%, thus they are insignificant with each other and strongly satisfies alternative hypothesis. The factor of emotional regulation which is (An AI chatbot's recommendation to invest in an ESG fund is more convincing than a human advisor's, The use of AI makes ESG investing less complicated for a retail investor like me) having significant relationship and it satisfies the null hypothesis with significant value less than 0.05%.
- Most of the respondents agree that they are willing to pay an extra fee for AI service providing highly detailed and personalized ESG analytics.

Suggestions:
SEBI mandate should clear "AI disclosure frameworks" where financial institutions must explain how the AI arrived at its investment or ESG advice. While Securities and Exchange Board of India (SEBI) has not yet issued a final mandate requiring a full, technical explanation of how an AI model arrives at specific investment or ESG advice, it is actively moving in that direction through consultation papers and recent amendments.

V. CONCLUSION

A significant percentage of Indian consumers and investors are aware of and open to using AI-based tools (like robo-advisors and chatbots) for financial decisions, surpassing global averages in some surveys. Robo-advisors are the most commonly used AI tool, primarily adopted by younger, salaried, and relatively new investors. AI and robo-advisors are increasingly viewed as essential for democratizing sustainable investing. They facilitate the adoption of Environmental, Social, and Governance (ESG) strategies by lowering barriers, reducing complexity, and helping investors screen for sustainable assets.

AI and robo-advisors are increasingly viewed as essential for democratizing sustainable investing. They facilitate the adoption of Environmental, Social, and Governance (ESG) strategies by lowering barriers, reducing complexity, and helping investors screen for sustainable assets. AI-driven financial services to fully realize their potential in India—particularly in the high-growth area of ESG investing—providers must prioritize building trust through radical transparency and operationalizing the rigorous governance and fairness standards being set by SEBI. stablishing clear senior management responsibility for the AI model lifecycle and aligning grievance redressal mechanisms with existing SEBI norms.

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