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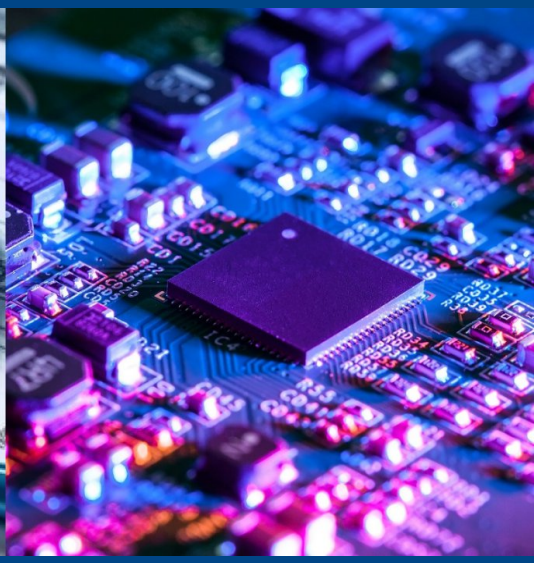

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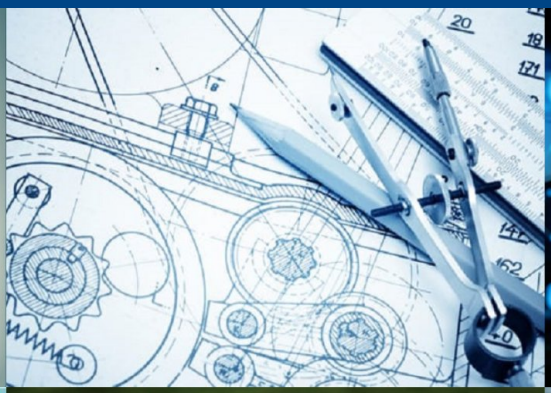

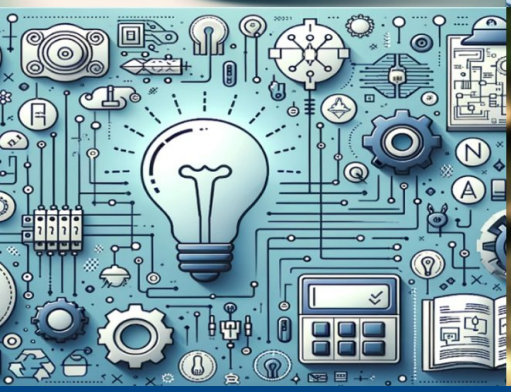

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The Role of AI in Sustainable and Ethical Investing

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ABSTRACT: Artificial Intelligence (AI) is increasingly transforming sustainable and ethical investing by improving ESG analysis, risk assessment, and decision-making .This study examines the awareness, perception, and impact of AI in sustainable investing using primary data collected through a structured questionnaire. The findings indicate moderate awareness of AI and ESG concepts among respondents, with many agreeing that AI improves efficiency and transparency. However, concerns regarding algorithmic bias, data privacy, and over-reliance on technology remain significant. The study concludes that while AI has strong potential to enhance ethical investing, proper regulation, transparency, and human oversight are essential.

KEYWORDS: Artificial Intelligence, ESG Investing, Sustainable Finance, Ethical Investing, Machine Learning, Transparency, Green Finance

I. INTRODUCTION

Sustainable and ethical investing has gained importance due to increasing concerns about climate change, corporate governance, and social responsibility. Investors today are not only focused on financial returns but also on environmental, social, and governance (ESG) factors. Artificial Intelligence (AI) has emerged as a powerful tool in this domain. It helps in analyzing large volumes of ESG data, identifying patterns, and improving decision-making. Technologies such as machine learning and natural language processing enable investors to evaluate companies more efficiently. However, the use of AI in finance also raises concerns such as lack of transparency, algorithmic bias, and ethical risks. Therefore, this study aims to understand the role of AI in sustainable investing and analyze public perception through survey data.

II. LITERATURE REVIEW

Abhijit Chakraborty, KN Bharath, Yogeesha LC Shriram (2026)
This study looks at how AI helps with ESG investing by looking at big and messy data using machine learning and natural language processing. It talks about how AI brings more clarity, fewer personal opinions, and better ways to spot risks when making investment choices. The paper also brings up problems such as unfairness in algorithms, keeping personal information safe, and not knowing how models work.
Conclusion: AI can really help with sustainable investing, but it needs good rules and ethical checks in place.

James Brusseau (2023)
This paper looks at how ethical investing works in companies that use a lot of AI and asks if AI matches human values. It comes up with nine ways to check how much a technology is focused on humans. The study says that standard ESG frameworks aren't enough for companies that rely on AI.
Conclusion: We need new ethical measures to help make smart investments in AI-based companies.

Zeynep Hazal Kopal (2023)
This research looks at how AI is used in sustainable investing across different parts of the process, ESG ratings, and company evaluations. It shows problems with ESG ratings such as not being clear, not being consistent, and not showing real benefits.AI is shown to help process data better and move towards investment models that look ahead.
Conclusion: AI has a lot of potential, but we need to fix issues like bias, standardization, and ethical concerns.

Archisman Mitra, Arijit Maity (2025)
This study looks at the role of AI in green finance, especially in ethical and responsible investment practices. It explains how AI tools help with ESG analysis, managing risks, and finding out if companies are really green. The paper also discusses problems such as not enough rules, people not knowing enough, and not having standardised data.
Conclusion: AI makes green finance more efficient, but it needs strong laws and ethical use.

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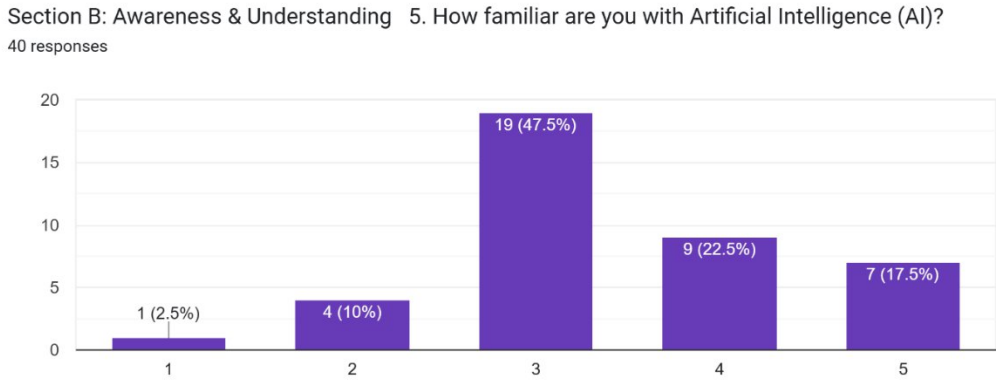
Pratyay Das, Vidhya Vijayakumar Themmadath, S Jeyalakshmi, Kulsoom Lateef, Akhil Agnihotri. (2025)
This paper looks at how AI and machine learning help find and check green investments. It shows how AI helps with screening for ESG factors, choosing assets, and predicting how well investments will do. The study also mentions worries like poor data quality, not being clear, and unfairness in algorithms.
Conclusion: AI can change sustainable finance, but its success depends on good data and proper rules.

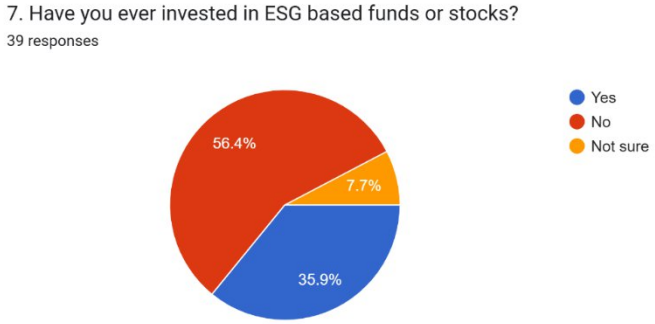
III. RESEARCH METHODOLOGY

Research Type: Descriptive Research M
Data Collection Method: Primary data through questionnaire
Sample Size: 40 respondents
Sampling Technique: Convenience Sampling
Tool Used: Structured questionnaire (20 questions)

The questionnaire included sections on:
Demographics
Awareness of AI & ESG
Impact of AI
Ethical considerations
Data Interpretation (Pie Chart Analysis):



1. Awareness of AI: It can be seen from the results that most people chose a **medium amount of familiarity (level 3)** with regards to Artificial Intelligence. This implies that though the participants might have some prior knowledge about artificial intelligence due to its exposure in the media, in their studies, or through usage of the technologies, yet they do not have any profound knowledge on the subject. This means that limited knowledge of AI can hamper their active engagement with AI investment applications.



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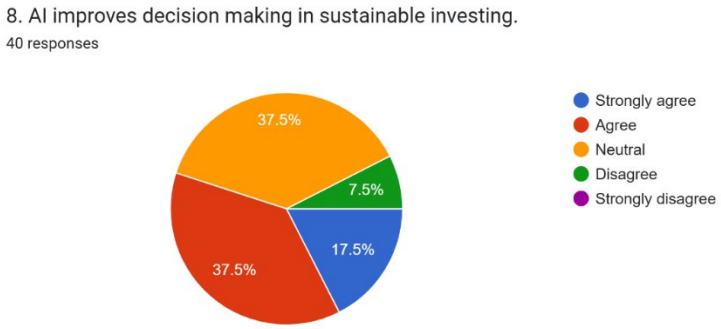
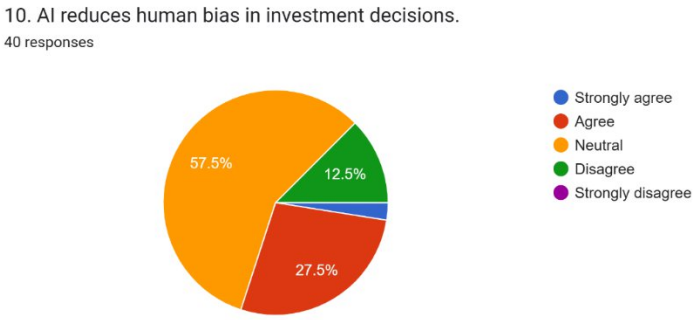
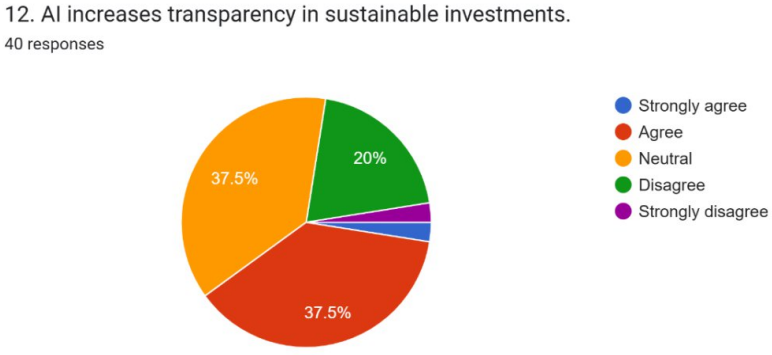
2. It can be seen from the findings that the majority of the participants (22/40) have not engaged in ESG investments, 14 have been active in ESG investments, and some are not sure whether they are involved in ESG investments or not. This reflects a substantial difference between the awareness of ESG investments and their application by individuals. Despite the increasing popularity of ESG investments worldwide, there has been little adoption by individual investors. This may be attributed to various factors, including inadequate information on ESG products, lack of access, and uncertainties about the gains.



3. Respondents chose the answers **“Agree”** or **“Strongly Agree”** at a significant rate, reflecting their very favorable views towards the use of AI for investment decisions. It appears that people acknowledge the effectiveness of AI when it comes to processing massive data and generating accurate insights. Nevertheless, their positive view might be grounded in belief rather than personal experience because of the minimal usage of ESG investments.



4. People gave more **neutral** responses when asked about their belief in the ability of AI to remove bias in decision making. This implies that individuals do not believe that artificial intelligence can eradicate bias from decision making. Although it is thought to be very objective, it is highly dependent on the data provided. In case such data carries some form of bias, the algorithm will learn from it and reinforce it even further.



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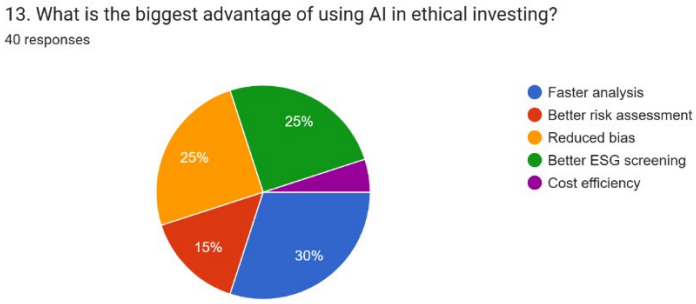
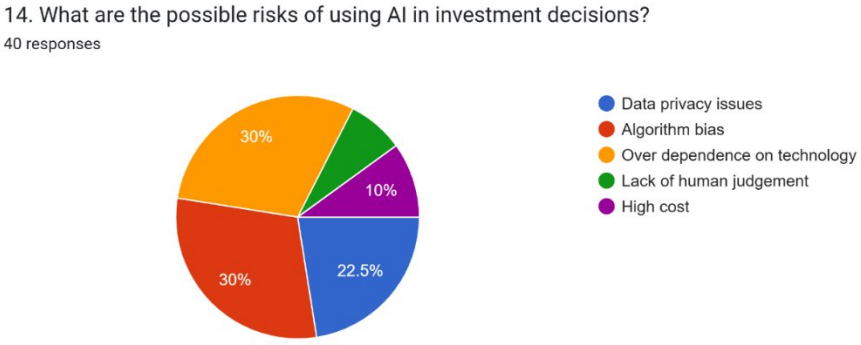
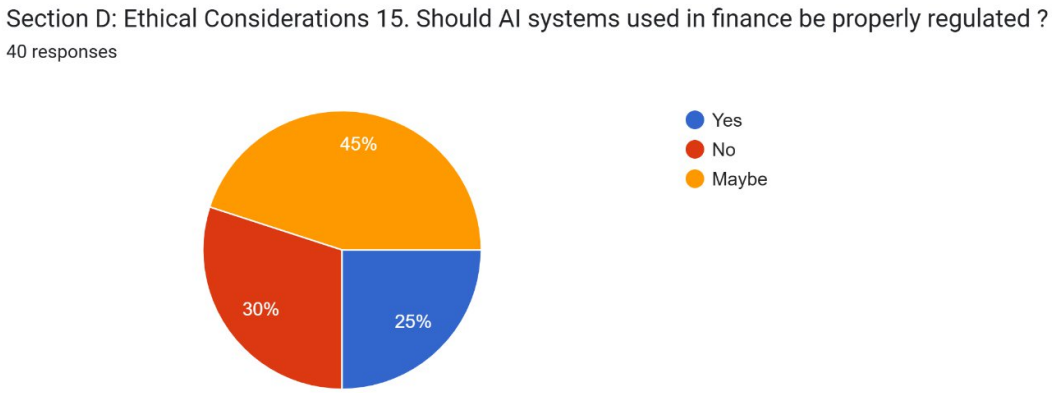
5. There was a **mixture of answers with some agreeing and others being neutral**, suggesting that people have conflicting views on the matter. While some participants support the claim that AI makes things more transparent through data-driven analysis and objective assessment, there are still people who have reservations because of the "black box" problem in AI systems, where the process is hard to decipher.



6. The respondents listed some of the major advantages that were attributed to AI, including **rapid analysis, better ESG evaluation, and lesser bias**. In this case, it can be noted that the respondents have an understanding of how AI is efficient in analyzing large amounts of data and its capability of making more accurate evaluations based on ESG criteria.



7. The three main risks that emerged from the study include **bias in algorithms, dependence on technology, and issues regarding data privacy**. It clearly shows that respondents have knowledge about the dangers that come along with AI technologies. Bias in algorithms points to problems related to unfairness, whereas dependency suggests worries about the risk of depending too much on artificial intelligence and lowering the role of human judgment.



8. Most of the survey participants chose "Maybe", which implies uncertainty, though it seems like they tend to be in favor of regulations. It means that while the participants realize the necessity of implementing some control

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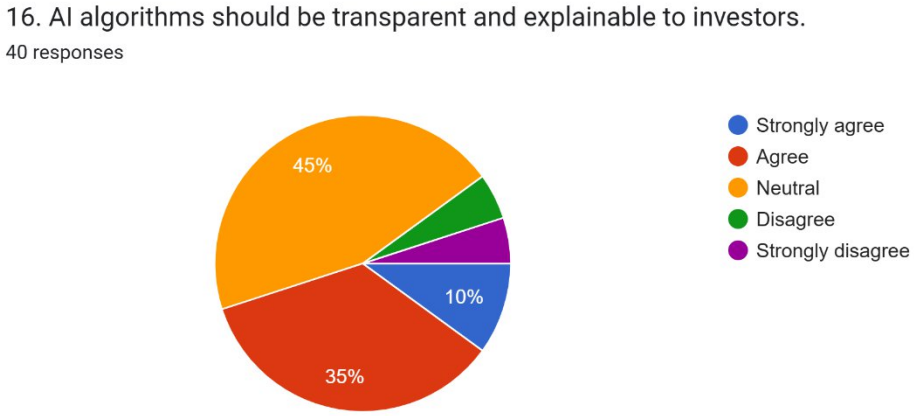
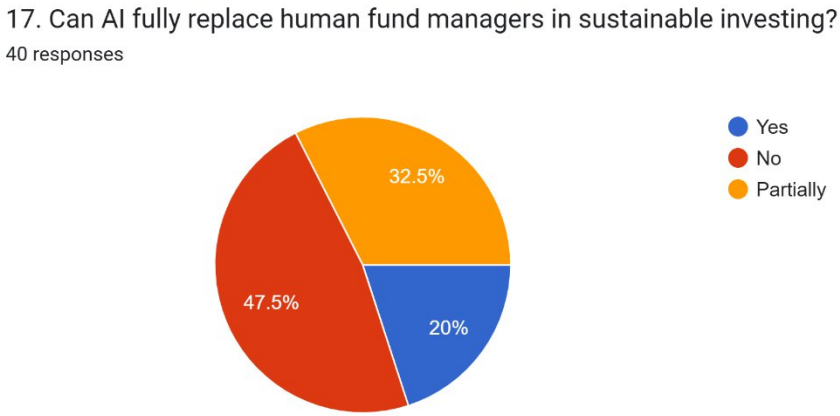
mechanisms, they cannot decide on their nature or scope. Probably, the participants lack information about current legislation and do not know how difficult it is to regulate AI technologies.



9. Most of the respondents believed that **AI systems must be understandable and transparent**. This shows that there is a great need for transparency regarding decision making by the AI system, especially in finance. It is vital to be able to explain decisions since investors would want to know why certain decisions were made.



10. Many people feel that **AI cannot substitute human fund managers**, showing that AI is more of an aid and not a replacement. People have confidence in their intuition and expertise as humans. It could be assumed that many people believe that AI would just increase efficiency but would lack human elements like ethics and contextual knowledge.

IV. CONCLUSION

The study reveals that awareness of AI and ESG investing is moderate among respondents, but actual investment participation remains low. Most respondents believe that AI improves decision-making, enhances ESG analysis, and helps identify ethical companies. However, there is significant uncertainty regarding AI's ability to reduce bias and increase transparency. Major concerns include algorithmic bias, data privacy risks, and over-reliance on technology. Respondents also believe that AI cannot fully replace human fund managers, highlighting the importance of human judgment. Overall, AI has strong potential to transform sustainable and ethical investing, but its success depends on proper regulation, transparency, ethical safeguards, and balanced human-AI collaboration.

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