



RESEARCH ARTICLE

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AI IN FINANCE: STRENGTHENING INVESTOR PROTECTIONS IN THE INDIAN MARKET

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ABSTRACT

In 2025, India's financial landscape will witness growth in Artificial Intelligence (AI)-driven tools that simplify investment decisions for robo-advisors, algorithmic trading, and predictive analytics. Despite these technological advancements in AI-driven financial tools, the participation of retail investors in the financial markets remains low. This paper explores the impact of AI-driven financial tools on investor protection in India by analyzing the evolution of the technology that outpaced the regulatory safeguards. The rising issues like lack of financial literacy, risk in data privacy, lack of transparency in AI decision making, and the insufficient mechanisms that have undermined the investor's level of confidence. A novel dimension has been explored in this study by the psychological impact of the emotionally stylized AI interfaces, such as the Ghibli style's inverse imagery and the visual designs of user-centric interfaces that influence investor behavior and their decision making. By comparing the various global best practices from the US and the UK with India's current regulatory stance, this paper aims for an AI-specific investor protection framework under the SEBI and the related institutions for the development. It also concludes with a policy recommendation aimed at developing the investor's trust, ensuring the ethical AI deployment, and promoting inclusive participation in the evolving digital financial ecosystem in India.



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I. INTRODUCTION

In the modern era, India's financial sector has seen a digital transformation that has been significantly driven by artificial intelligence AI. From the general trading activities and the Robo Advisors to the personalized investment dashboards, AI-driven tools generally promise greater convenience and accessibility to a broader group of investors. However, in India it continues to witness a relatively low investor participation in the formal financial markets [1]. In spite of the available advanced technological tools, a fundamental gap in the investor's confidence, understanding, and protection still exists. As an AI system designed for optimizing investment performance, it lacks transparency and accountability. The nature of black-box and the absence of rule checking by the authorities raise serious concerns for the individual investors, particularly for the first-time or inexperienced users who dominate the market [2]. With the evolving frameworks of SEBI is still struggling to keep pace with the technological changes, the Indian landscape of investor protection needs an urgent need for evaluation [3]. This paper addresses an important issue prevailing in the current situation on how the AI-driven financial tools impact investor protection in India, as shown in Fig. 1. This study explores why technological innovation is not enough for high investor participation and how the AI-driven tools can empower and mislead users. This paper also explores how the psychological and visual design elements may influence the investor in the decision-making process without any prior awareness.

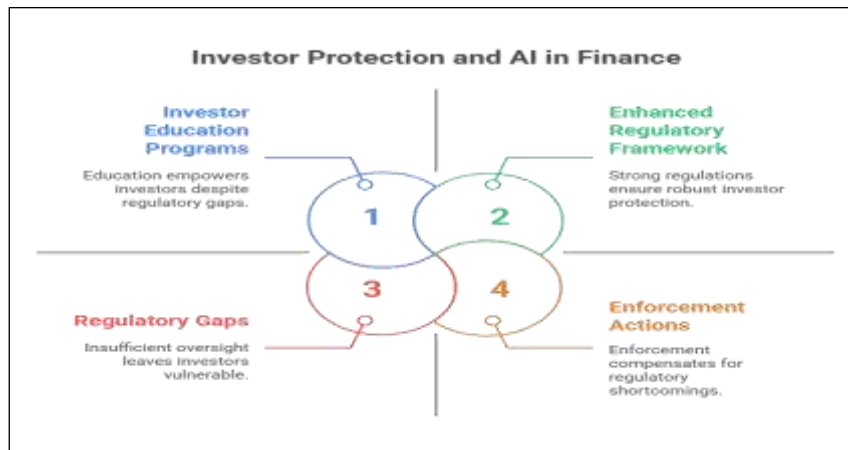


Figure 1: Objective of Investor Protection and AI.
Source: Authors, (2026).

Research Question

- Why the investor participation still low in spite of the various availability of AI Tools in India?
- What is the role of visual and emotional elements that influence the investor's decisions?
- How do AI platforms affect the investor trust and behavior?
- What are the regulatory reforms that are needed to ensure investor protection in the development of AI?

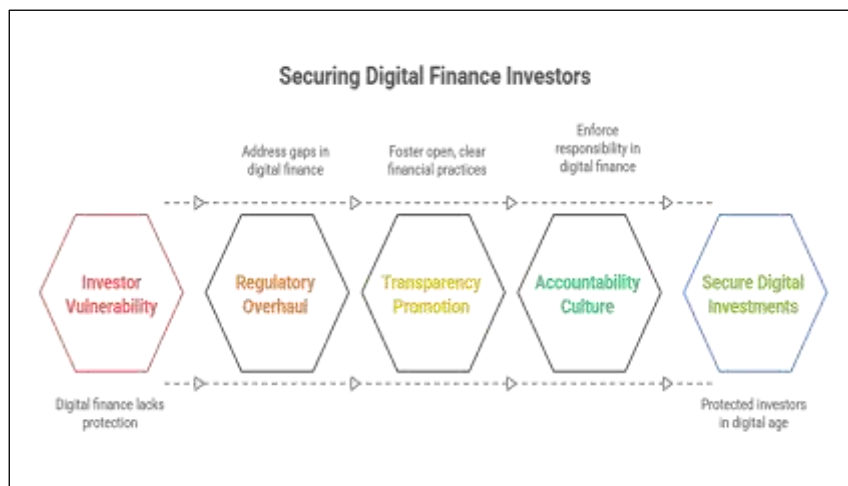


Figure 2: Relevance of Digital Finance Investors.
Source: Authors, (2026).

At present, India moves closer to a complete digital finance system, and the relevance of investor protection has never been critical, as shown in Fig. 2. Understanding the impact is important as the AI tools are now becoming the default interface for investment decision-making [4]. The study is important as it explores the intersection between the law, technology, and finance, making it more futuristic and its presence the regulatory gaps that exist.

II. UNDERSTANDING THE INVESTOR PROTECTION IN INDIA

In India, investor protection is the foundation for market integrity, which is essential for investor trust and participation. Generally, investor protection refers to the mechanism that safeguards investors, particularly retailers and first-time participants, from fraud, unfair practices, misinformation, and even risks. The digital platforms and the AI-driven tools are rapidly evolving in the financial systems and reshaping investor behavior. The protection of the investors is not only about preventing market manipulation, but also extends to issues like data privacy, ethical interface design, transparency, and more. Historically, the primary regulator verifying investor protection is the Securities and Exchange Board of India (SEBI), discussed in Fig. 3. Through various mechanisms like know your customer (KYC), mandatory disclosure, and the regulatory oversight of the intermediaries, SEBI has built a strong framework. However, these measures are based on traditional finance models, and they face various problems under the digital and AI-powered platforms. In India, the backbone of the financial growth is the retail investors who remain unacknowledged. Currently, there is a rise in demat account registrations, which makes the market participation low. This is not due to the lack of capital, but it raises a serious issue, which is, lack of trust. Then, many investors hesitate to engage in it because they feel under-informed and unable to verify the credibility of the AI-generated investment advice. One of the important challenges is financial literacy. According to the recent survey of SEBI, 27% of the investors in Indian clients understand the risk in investment and the products. This gap increases because of the advanced technology that has a higher demand. When the AI tools are not clear and there is no personal help, then many investors will stop investing or make a risky decision as they are influenced by the flashy designs or they trust what the website or an app looks like.

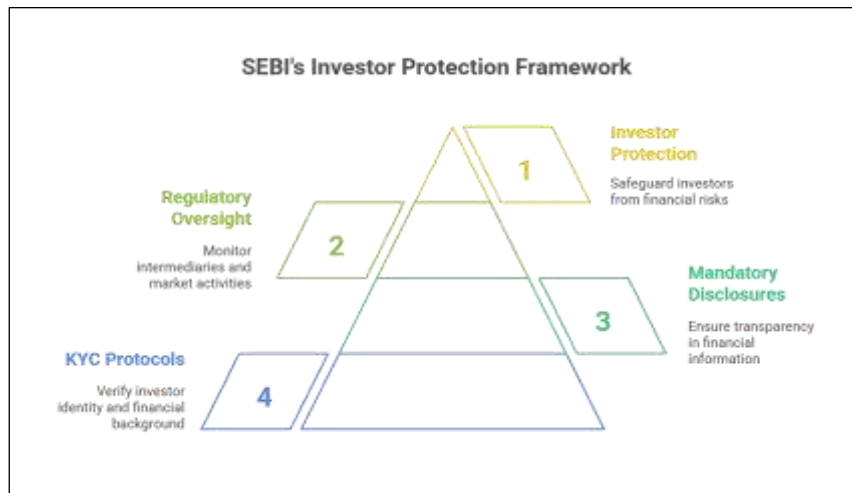


Figure 3: SEBI's Framework.

Source: Authors, (2026).

Moreover, SEBI has initiated steps like the Investor Charter (2021), and the new grievance platforms; these systems are reactive instead of preventing it. Currently, AI is helping to choose where to invest, identifying the market trends, also suggesting the traders that the risk for investors is bigger compared to the previous years. There are no special rules to make easy understanding of the AI decisions or to protect the users from being emotionally manipulated by various other apps or websites. Therefore, in this situation following rules aren't enough to protect the investors. We should make sure people feel safe, and we need to think differently and understand how they are affected emotionally, and know how the AI systems are making the investment decisions.

III. ROLE OF ARTIFICIAL INTELLIGENCE IN FINANCIAL MARKETS

In India, Artificial Intelligence is transforming the Global markets. It plays a crucial role in trading, digital investment, fraud detection, and customer services. Generally, the AI systems analyze the financial datasets in real time and provide trading and personalized investment advice. Portfolio recommendations are given by the Robo-advisors nowadays, making the financial advice more accessible to investors daily. A report by NITI Aayog in 2024 highlights that Indian fintech platforms, over 65%, are using AI for investment guidelines, credit scoring, and even fraud detection [5]. The Other platforms, like Zerodha and Groww, combine AI to suggest sending alerts, portfolios, and encourage users to engage in it. However, it leads to legal and ethical concerns. Some of the key issues like algorithmic opacity, where the inverters cannot understand how the decisions are made, the data privacy, as the AI focuses on collecting personal data. Many of the platforms may lack transparency and consent, increasing the risk of manipulation. However, there is no clear responsibility when the AI advises lead to financial losses. SEBI and RBI need to address these risks completely. To improve the user's experience, Gamified interfaces are used, but this leads to impulsive trading, especially the young investors. Despite these challenges, AI continues to improve financial inclusion and efficiency. Therefore, we need strong laws to make sure that the algorithms of computers used in finance are fair enough and easy to understand, and protect the people who invest their money.

Table 1: Examples for Financial Markets.

Case Study	Country	Year(s)	Core Issue
NSE Co-Location Scam	India	2015–2018	Unequal server access for high-speed trading, loss of investor trust.
Paytm Money Risk Profiling	India	2020–Present	AI is failing to personalize financial advice properly.
Robinhood and GameStop Controversy	USA	2021	AI-based app halted trades, sparking claims of bias toward large institutional investors.

Source: Authors, (2026).

III.1 REAL WORLD EXAMPLES

III.1.1 The NSE Co-Location Scams (India, 2015-2018)

This case is about the unfair trading on the National Stock Exchange (NSE) of India. Some of the brokers were secretly given faster access to the NSE's computers, and because of this, they could place orders quickly than others using the high-speed trading Technology. However, this gives them an unfair advantage and makes the market unfair for other traders. It leads to a loss of trust among the regular investors.

III.1.2 Robinhood and the GameStop Controversy (USA, 2021)

In 2021, many of the small investors started buying the GameStop shares after the campaign. Then, the stock price shot up so quickly. Robinhood, a trading app, was used by many investors, but suddenly it stopped people from buying the GameStop and other stocks. This made many people angrier, and they felt that the app was protecting the big investors instead of the small investors. Some people also felt that the app's design and the AI suggestions are riskier, making the situation worse.

III.1.3 Paytm Money and Risk Profiling Issues (India, 2020- Now)

Paytm Money is an app that helps people invest in mutual funds. It uses the AI to study the user's profile and suggest the people where to invest. But many of the users are complain that the app does not fully understand their financial situations. It means that the investment suggestions might not always be right for the people and could lead to worse financial decisions.

IV. VISUAL AND PSYCHOLOGICAL IMPACT OF AI INTERFACES

In the modern digital age, visual designs play an important role, which is often underestimated, but they shape the investor's behavior. Nowadays, AI-powered financial platforms are not just tools but are carefully influenced with decision-making through layouts, colors, animations, and feedback. These interfaces are often user-centric, and they are psychologically engaging designs that are capable of subtly jolting users towards their particular actions [6]. One of the striking examples is the Rise of the Ghibli-inspired images or the emotionally soft visuals from the fintech platforms. Just like aesthetic Ghibli films, which were known for their warmth, calm, and their emotional depth, some investment apps are adopting soothing color palettes, gentle transitions to foster a sense of trust and comfort. On one side, it can reduce the anxiety of first-time investors, but it blurs the line between emotional comfort and manipulation. It may give potential users a false sense of security, making them engage in high-risk financial products. This tactic comes under what economists call "the choice architecture", where it impacts the decisions [7]. Various financial platforms create the illusion of control and success. While these elements increase the engagement of the young investors with limited financial literacy can lead to impulsive behavior [8]. Investors understand how and why these recommendations are made, yet the emotional design makes them feel more confident and connected to the tool. This is known as the "Illusion of transparency," which becomes a dangerous platform that involves real-time trading and Investments. The psychological impact of AI tools integrated with behavioral nudges, including personal alerts or prompts, encourages more traders to participate. In the absence of regulatory standards on interface ethics, users may remain vulnerable, not just influence the data-driven, but also emotionally. To safeguard the investor's interest, regulations must be considered. It should focus on transparency, informed consent, and fairness, which are essential to ensure that the financial tools do not exploit the psychological design at the cost of any investor protections [9-11].

V. COMPARATIVE ANALYSIS - GLOBAL BEST PRACTICES

The regulation of AI in the financial services has seen progress across the Global markets, with the UK and the US taking active steps to manage the risks and the challenges of the AI-powered financial tools. In the UK, the Financial Conduct Authority (FCA) launched the regulatory sandbox, which means an initiative that provides a safer space for companies to test their innovation, AI-driven Financial solutions under supervision. This setup enables the new technology while ensuring the regulatory standards and protecting the consumers. It's proven to be a valuable way to balance innovation with risk management.



Figure 4: Best Practices.

Source: Authors, (2026).

In the US, the Securities and Exchange Commission (SEC) has played an important role in maintaining the Robo Advisors and the algorithmic trading systems [12-15]. The SEC requires the platform to be more transparent, like how it operates and how the user data is used. This approach provides clarity by helping investors understand the AI tools and ensuring informed decision-making in the financial markets of the investors, as shown in Fig.4.

Table 2: Comparison of the UK, USA, and India.

Country	Regulatory Body	Key Initiative	Focus Area	Impact/Benefit
UK	Financial Conduct Authority (FCA)	Regulatory Sandbox – a controlled environment to test AI financial tools	Innovation, Risk Management	Supports innovation while maintaining regulatory oversight
USA	Securities and Exchange Commission (SEC) & CCPA	SEC: Transparency in Robo-advisors & AI trading CCPA: Strong data privacy law	Transparency, Data Privacy	Enhances informed decisions and user control over personal data
India	SEBI & RBI	SEBI: Guidelines for algorithmic trading RBI: Digital lending regulations (early)	Partial coverage of AI, lacks robust data/privacy law	Needs improvement in AI-specific regulation and consumer protections

Source: Authors, (2026).

In addition, the California Consumer Privacy Act (CCPA) has provided a high standard for data protection, ensuring the AI-driven financial platform has a guideline. It mandates that the users should get consent to the collection and the usage of their personal data, ensuring a level of control that mitigates the risks associated with data privacy violations. In contrast, India's regulatory framework for AI in the financial services is still in the early stages of development. While the Securities and Exchange Board of India (SEBI) has already released the guidelines of algorithmic trading, it doesn't fully cover AI, and there is a lack of strong data, privacy, and transparency standards, which can be seen in the UK and the US. Similarly, the Reserve Bank of India (RBI) has taken steps to regulate digital lending, but it hasn't introduced clear and AI-specific regulations yet. India can benefit by learning from these International best practices. By adopting the regulatory sandbox model like the one in the UK, it could help us to balance between innovation and consumer protection. At the same time, improving data privacy and transparency, which is similar to the US approach, could be more helpful to build public trust in the AI-powered financial tools.

VI. CONCLUSION

This paper highlights the transformational role of AI-driven financial tools in shaping investor protection in India and the investors' behavior. AI's adoption in the investment platform has liberalized the financial advice, offering benefits like personalized recommendations, real-time trading, and accessibility. However, disadvantages may also lead to challenges like algorithmic opacity, data privacy, and potential for emotional manipulation. The research objectives were examined on how the AI interfaces influence the decision-making of the investor and to assess the regulatory frameworks that are needed to protect the investors. By focusing on the AI's psychological and visual effects, this study helps to reveal how the design elements, such as the Ghibli-inspired visuals, could nudge the users towards impulsive decisions. The importance of informed consent and transparency is the key to mitigating these risks. To address these challenges, this paper recommends some policy actions:

- 1) To implement the AI-specified regulations-
SEBI should develop a clear framework for AI transparency in the financial tools, incorporating algorithmic explainability and transparency in the data usage.
- 2) To promote investor education-
The government should provide financial literacy programs that focus on the AI-driven tools. The users should understand the mechanism of the platforms they use.
- 3) To strengthen the interface ethics-
Ethical design principles should be incorporated in the interface regulations, ensuring that it does not manipulate the user's emotions or encourage irrational behavior.

These measures will safeguard the investors and will build trust in the AI-driven financial services. By giving importance to transparency and the users' empowerment, we will create a balanced environment in India, where innovation in finance and investor protection coexist.

VII. AUTHOR'S CONTRIBUTION

Conceptualization: R. Ashok Kumar, E. Ajitha.

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Writing – Review and Editing: R. Ashok Kumar, E. Ajitha.

Resources: R. Ashok Kumar, E. Ajitha.

Supervision: R. Ashok Kumar, E. Ajitha.

Approval of the final text: R. Ashok Kumar, E. Ajitha.

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