



**Investigating Generative Artificial Intelligence Usage And Investment
Performance Efficiency Among Retail Investors In Coimbatore District**

G.Flora Shantha Kumari

Commerce, Bharathiar University, Coimbatore, Tamil Nadu

Dr. P. S. Selva Tharangini

Assistant Professor, Department of Commerce, Bharathiar University, Coimbatore, Tamil Nadu

ABSTRACT

This paper investigates the level of the Generative Artificial Intelligence (GenAI) application and its effect on the efficiency of retail investors investment performance in Coimbatore District. The research design will be descriptive and analytical and will be built on the primary data obtained in 200 individuals using a structured questionnaire. The results indicate that GenAI has got a massive adoption, especially among younger and technologically savvy investors who use these applications in the stock market analysis, portfolio management, financial news briefing, and making informed decisions. The findings suggest that a large share of investors thinks that they are performing better in their investments, primarily because they have better analytical tools, faster access to information they need, and fewer reliance on the old forms of advisory services. Nonetheless, the paper also emphasizes the fact that GenAI does not always guarantee higher financial returns because there were investors who did not see any significant increase or even decrease in its performance, which might be explained by the excessive use of AI, the lack of understanding, or the volatility of the markets. The discussion also indicates that GenAI represents a strong decision-support system; however, its performance is highly reliant on the user knowledge, experience as well as strategic implementation. On the whole, the research adds to the existing knowledge about the changing role of the AI in retail investment behavior and the necessity to balance the use of the technological tools with effective financial decision-making in terms of achieving the best possible investment results.

Keywords: Generative Artificial Intelligence, Retail Investors, Investment Performance, Decision-Making, Portfolio Management, Financial Technology, Investment Efficiency.

1. INTRODUCTION

The fast development of Generative Artificial Intelligence (GenAI) has introduced a fundamental change within the financial domain, specifically the provision, processing, and use of financial information by the retail investors. GenAI technologies help users to handle extensive data on the market, make predictive results, transform financial news, and make decisions with added speed and precision. Historically, the problems that retail investors had to deal with included poor access to professional information, information asymmetry and cognitive biases. Nevertheless, with the development of AI-based tools, these obstacles have been minimized, and more informed and



timely investment decisions can be made by individual investors. Consequently, GenAI is also being incorporated more and more in processes like stock analysis, portfolio optimization, risk evaluation, and financial planning, and its implementation redefines the current investment habits. The use of digital financial platforms and AI-based applications has been significantly increasing among the retail investors in the Indian context especially in economically progressive regions such as Coimbatore District. As more people become internet users, more use smartphones and fintech innovations are emerging, investors are increasingly becoming technologically conscious and more prone to data-driven approaches. Although the increased popularity of GenAI, the question of its effectiveness at improving the performance of investments is unclear. Some of the investors may also gain efficiency and improved decision making whereas others may have mixed results depending on the lack of knowledge, excessive dependence on technology, or market instability. Thus, this research aims at exploring the level of GenAI adoption amongst the retail investors in Coimbatore District and how it affects investment performance efficiency, as well as add to the current comprehension of the opportunities and constraints of AI in financial decision-making.

2. LITERATURE REVIEW

Ramalingam (2025) analyzed the effective application of Artificial Intelligence agents to Enterprise Application Integration (EAI) and Electronic Data Interchange (EDI). The paper highlighted the use of AI technologies in increasing efficiency in data processing, automation and simplification of communication between enterprise systems. It was noted that AI-supported combination minimized operational complexities and enhanced the rate of information exchange that was useful in enhancing decision-making processes. The results indicated the possibilities of AI systems to optimize organizational performance, which indirectly confirms their possible use in finance and investment-related areas.

Gurubaran (2025) examined patterns of funding and the functioning of the behavior of domestic investors in Indian startups, focusing particularly on recent technologies like Generative Artificial Intelligence (GenAI). The researchers have discovered that technological developments and innovation trends played a major role in investor behavior as more and more people started to be interested in AI-based enterprises. It was noted that investors showed greater interest in those startups that made use of GenAI, which means that their confidence in its opportunities is increasing. The study also indicated that behavioral variables, including risk perception and technological awareness were also very important in influencing investment decisions.

Hafinaz, Hariharan, and Kumar (2025) discussed the current changes in the fields of management, accounting and economics with attention to the application of more sophisticated technologies to the process of decision making. The paper has made known that the implementation of AI tools increased the analytical capacity, better financial forecasts, and strategic planning. They came to the conclusion that technology-based strategies helped in



enhancing efficiency and precision in economic and financial management practices. The results supported the relevance of integrating novel technologies such as GenAI to enhance the level of performance in different industries, such as investment management.

Inamdar et al. (2025) discussed the disruptive nature of Generative Artificial Intelligence in financial predictions and high-tech methods of fraud detection. The experiment showed that GenAI contributed greatly to the precision of financial predictions through the analysis of large datasets and the recognition of concealed patterns. It was noted that AI-based methods enhanced risk management and allowed to identify fraud at the very first stage, enhancing the financial security system. The results indicated that the implementation of GenAI in financial business did not only contribute positively to efficiency but also offered a more accurate and evidence-based information to make decisions.

Jayaprakash and Loganathan (2025) studied how Artificial Intelligence has changed the nature of the Indian stock market, especially in trading and making investment decisions. The research concluded that AI technologies were used to make more informed and fast trading decisions because of the ability to analyze data in real-time and predict it. It was noted that AI applications enhanced the efficiency of the market, minimized the human factor, and assisted investors in their strategy optimization. The study reached a conclusion that the increased use of AI in stock markets was important in improving transparency, accuracy, and the overall performance of investments.

3. RESEARCH METHODOLOGY

The research design employed is descriptive and analytical research design, which utilizes the primary data of 200 retail investors in Coimbatore using structured questionnaire. The convenience sampling methodology was adopted and frequency and percentage methods were used to analyze the data. The method allows investigating the patterns of GenAI adoption and how it is perceived to affect investment performance.

3.1 Research Design

The current research uses a descriptive and analytic type of research design in the investigation of what happens in the use of Generative Artificial Intelligence (GenAI) and its effects on efficiency in investment performance among retail investors. The research is aimed at determining the trends of AI application and considering its perceived results.

3.2 Area of the Study

The research is done in Coimbatore District which is experiencing an increased number of retail investors who are fully involved in financial markets and embracing digital investment tools.

3.3 Population of the Study

The study population will be retail investors who are busy with stock market and other investing activities in Coimbatore District.



3.4 Sample Size and Sampling Technique

The sample of the population includes retail investors that are involved in stock market and other investment activities in Coimbatore District.

3.5 Sources of Data

The research is founded on primary data that is gathered by the researcher through direct respondents. Another source of secondary data used in the conceptual understanding was the journals, articles and reports.

3.6 Data Collection Instrument

The main data collection tool was a structured questionnaire. The questionnaire was divided into several sections that included demographic profile, the frequency of GenAI usage, the reason of using it, and opinion of the perceived effect on the investment performance.

3.7 Tools and Techniques of Analysis

The data collected were analyzed with the help of the descriptive statistical tools, such as frequency and percentage analysis. The findings were also tabulated and graphically displayed to make them easy to understand.

4. RESULT AND DISCUSSION

The research demonstrates that retail investors (which primarily consist of younger users) utilize Generative AI on a frequent basis, primarily to provide the analysis and make the decisions. It enhances efficiency and performance to the majority of the users and does not ensure higher returns.

4.1 Demographic Profile of Respondents

The table shown above shows the age-distribution of the respondents used in the study. It is noted that most of the respondents (36 %) are between the ages of 26 and 35 years, and the number in the 18-25 years bracket is 24 %. The sample is 23 and 17 % of 36-45, and 46 years and above respectively.

Table 1: Age Distribution of Respondents

Age Group (Years)	Frequency	Percentage (%)
18 – 25	48	24%
26 – 35	72	36%
36 – 45	46	23%
46 and above	34	17%
Total	200	100%

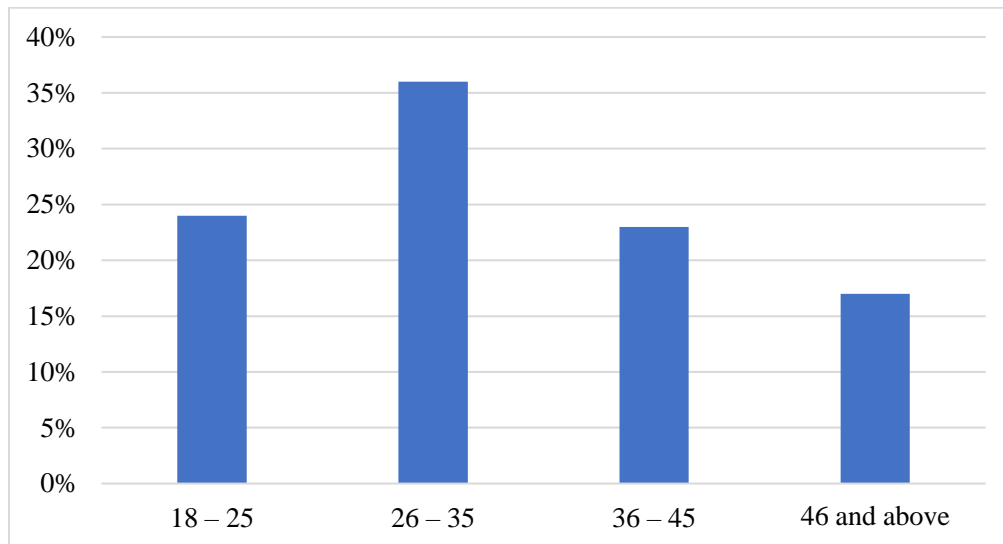


Figure 1: Graphical Representation of Age Distribution of Respondents

The graphical level also underscores the fact that the sample is dominated by the younger people and middle-aged people. This shows that retail investors who engage more with Generative Artificial Intelligence tools are within the range of 26-35 years bracket, probably because of the increased level of technological awareness and flexibility. Conversely, the number of people participating in it declines as they grow older, indicating that older investors are less likely to use AI-based investment instruments.

4.2 Usage of Generative AI among Retail Investors

The table shows how often the use of Generative AI (GenAI) at retail investor level took place in the research. It can be seen that most of the respondents are actively engaged in the use of GenAI tools, with 38% using it once a week and 29% using it daily. Also, 22 % of the participants assert to be using GenAI infrequently with only 11 % saying that they rarely or never use such tools.

Table 2: Frequency of GenAI Usage

Usage Frequency	Frequency	Percentage (%)
Daily	58	29%
Weekly	76	38%
Occasionally	44	22%
Rarely/Never	22	11%
Total	200	100%

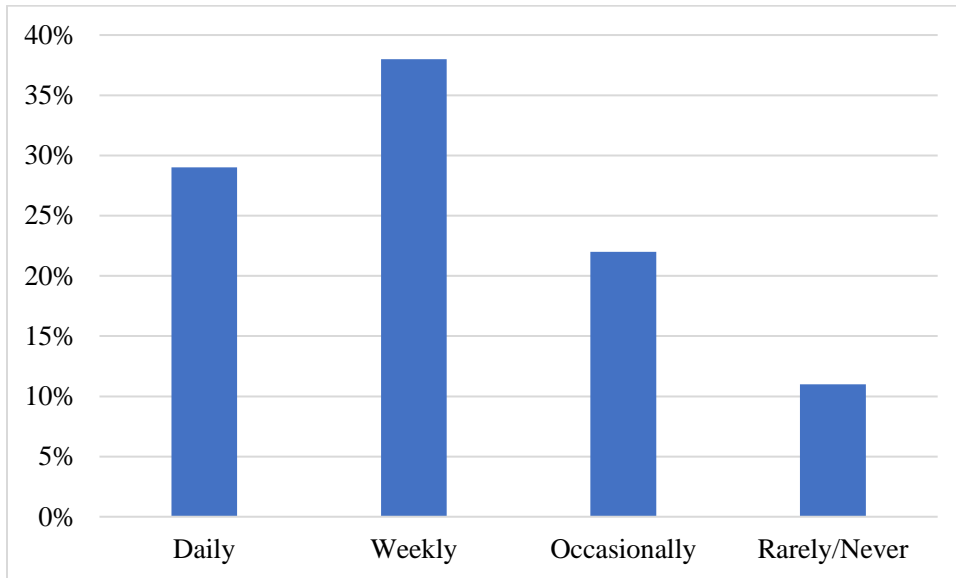


Figure 2: Graphical Representation of Frequency of GenAI Usage

The graphic representation further stresses that the distribution is mainly dominated by regular use (daily and weekly). It means that GenAI is highly adopted by retail-level investors and it can be implied that these tools have become an inseparable part of the investment decision-making. The relatively small proportion of rare or non-users indicates the growing confidence and belief in AI technologies in financial processes.

4.3 Purpose of Using Generative AI

The table shows the multiple uses of the Generative Artificial Intelligence (GenAI) tools by retail investors. The most prominent application is noted to be GenAI with the largest number of respondents (32) using the tool to analyse the stock market. It is then followed by portfolio management (24) and financial news summarization (21). Also, 15 percent of the respondents use GenAI to get investment advice, and 8 percent use it in other ways.

Table 3: Purpose of GenAI Usage

Purpose of Use	Frequency	Percentage (%)
Stock Market Analysis	64	32%
Portfolio Management	48	24%
Financial News Summarization	42	21%
Investment Advice	30	15%
Others	16	8%
Total	200	100%

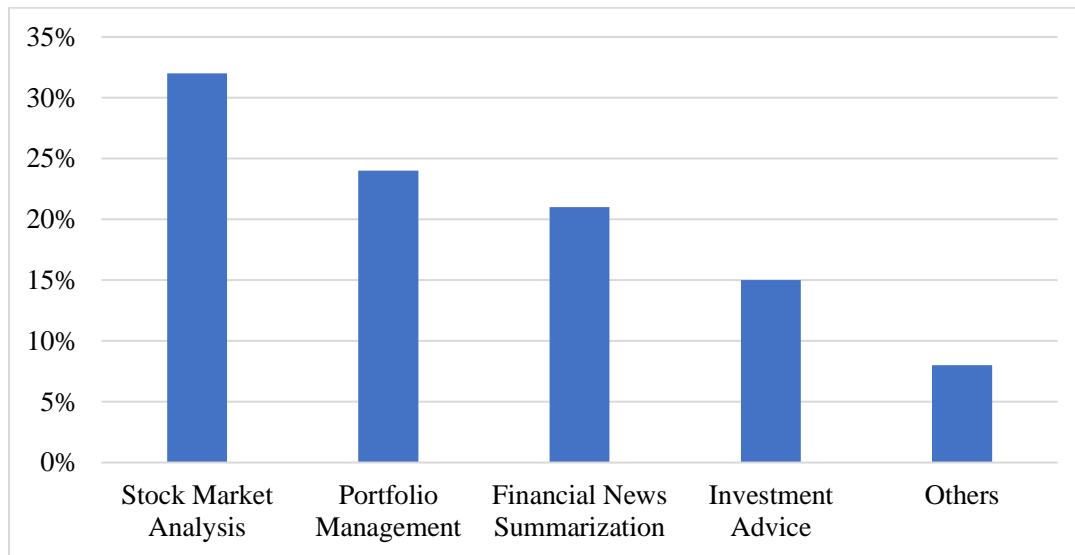


Figure 3: Graphical Representation of Purpose of GenAI Usage

The graphical illustration points out that GenAI is consumed in the form of analytic and data applications. This means that retail investors rely mostly on AI tools when it comes to developing their perception of market trends and making optimal investment decisions. The slightly less percentage on investment advice implies that although AI is trusted in the analysis, investors can still make final judgments based on the personal or traditional sources.

4.4 Perceived Impact of GenAI on Investment Performance

The table indicates how the respondents perceived the effects that Generative Artificial Intelligence (GenAI) will have on their performance in investments. Most of the respondents have recorded positive results, and 41% people have reported that their performance has improved moderately and 27% have stated that it has improved highly. In the meantime, 19 % of the respondents did not report any significant change, and 13 % of the respondents reported a drop in performance.

Table 4: Perceived Impact on Investment Performance

Impact Level	Frequency	Percentage (%)
Highly Improved	54	27%
Moderately Improved	82	41%
No Significant Change	38	19%
Declined	26	13%
Total	200	100%

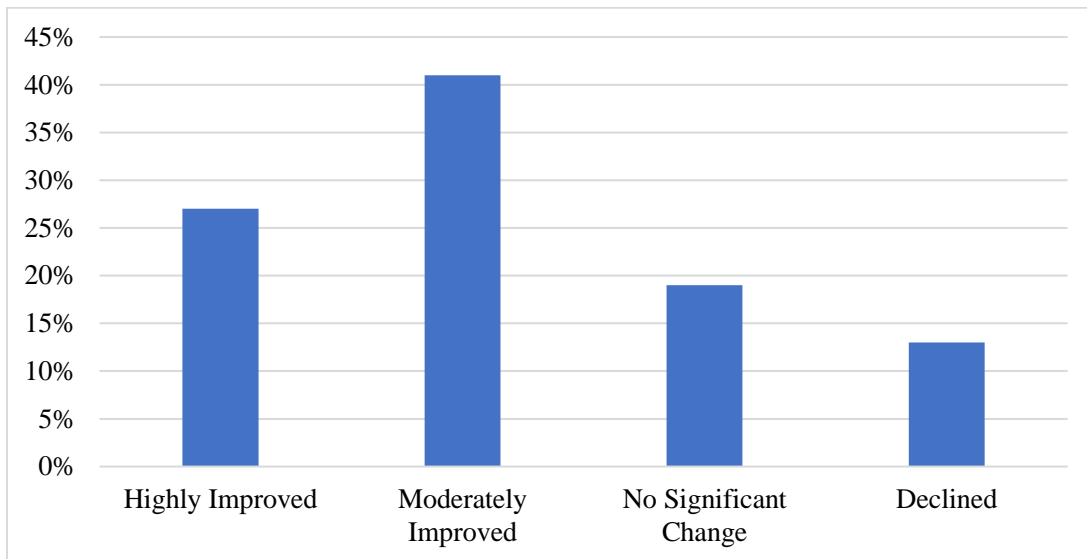


Figure 4: Graphical Representation of Perceived Impact on Investment Performance

The graphical illustration shows that the majority of investors view GenAI as useful in enhancing the efficiency of investment. This implies that AI tools complement decision making and the accuracy of analytical processes. Nevertheless, the fact that there were some respondents who did not report an improvement or deterioration suggests that GenAI does not promise to enhance the returns of all users and can be subject to other factors like the knowledge of the user, the state of the market, and the use of AI tools.

4.5 Discussion

The research shows that Generative AI is popular among retail investors, particularly younger cohorts, and often serves to make investment-related decisions. It is primarily utilized to analyze, like stock analysis and portfolio management, and increase the efficiency of decision-making. Most investors report moderate to significant increase in performance, but not all of them show the increase, unlike those who claim to have no increase or that it went down, implying that GenAI is not a sure way of increasing returns. In general, its efficiency is based on how the user knows it, how to use, and the market environment.

5. CONCLUSION

The paper concludes that Generative Artificial Intelligence (GenAI) has become an important technology among retail investors in Coimbatore District, especially younger and technologically proficient. The results suggest that GenAI is extensively utilized in such areas of analyzing stock market data, managing investments, and making a decision leading to the enhanced efficiency and availability of financial data. Although most investors see a moderate to a high improvement in their investment performance, the findings also indicate that GenAI does not always assure an increase in returns since some users are not getting any returns, or some are getting a decline. Herein lies the fact that the success of the GenAI greatly relies on the factors like the knowledge



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of the user, the degree of reliance, and the market conditions. Thus, it can be summarized that despite GenAI being a decent decision-support tool, it should be used in the best way possible, which can only be achieved by balancing the use of traditional investment knowledge and sound financial judgment.

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