Chapter 7
AI Chatbots and Market Dynamics:
Analyzing the Impact of AI on the Indian Stock Market

Swagatam Saha
https://orcid.org/0009-0000-1825-2693
Christ University, Bangalore, India

Babita Chaudhary
https://orcid.org/0009-0000-9765-5705
Christ University, Bangalore, India

ABSTRACT

This study examines the potential of ChatGPT v4.0 for stock market analysis, particularly within the Indian stock market. The research uses prompt engineering to assess ChatGPT's ability to recommend stocks, construct portfolios, provide fundamental analysis, and understand price movements. The study combines sentiment analysis of news data with historical price data to forecast future price movements. Results demonstrate ChatGPT's effectiveness in identifying investment opportunities and providing insights for decision-making. The study also evaluates the accuracy of ChatGPT's predictions, finding an 88.89% accuracy rate based on news sentiment analysis and a 94% accuracy rate when integrating sentiment analysis with historical price data. Despite limitations, including constraints in handling large datasets, ChatGPT exhibits promise for supporting investors in the Indian stock market. Future research should focus on refining models and addressing ethical considerations to ensure responsible AI integration in finance.

1. INTRODUCTION

The rapid evolution of financial markets has been closely connected with technological advancements, and one of the most transformative technologies in recent years has been Artificial Intelligence (AI). The emergence of AI chatbots, particularly those driven by Large Language Models (LLMs) such as ChatGPT, is one of its most disruptive uses, redefining the way investors engage with markets and make

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choices. Thanks to these conversational AI solutions, financial information is now accessible to everyone and is no longer limited to experts or institutional investors. AI chatbots have the potential to usher in a new age in the Indian stock market, where retail involvement is increasing and financial knowledge is becoming increasingly important. These bots are more than simply tools; they are catalysts that help democratize access to financial data, improve market efficiency, and help investors navigate the intricate and stormy waters of the stock market.

AI's introduction into the financial industry has established conventions and brought about relevant changes to trading tactics, portfolio management, and investment decision-making. At the forefront of this change are conversational models like ChatGPT, Gemini, and Co-Pilot, which have drawn notice for their ability to enhance financial decision-making procedures. These AI-driven assistants are crucial in India, a nation where stock market involvement is increasing. An AI interested in financial markets specifically academicians and beginners who are new to the market would be highly beneficial by optimizing both the traditional ways and modern technologies for a better understanding of the market. AI Chatbots have the ability not only to improve investment results but also to greatly increase financial literacy for all types of investors (Das *et al*., 2024).

1.1 The Role of AI Chatbots in Financial Decision-Making

AI chatbots are more than simply a cutting-edge development in the financial industry; it is radically changing the way that financial decisions are made. Chatbots like ChatGPT can process enormous volumes of data in real-time and provide investors insights that would normally need years of training and in-depth knowledge by utilizing the enormous processing capacity of LLMs. Because these chatbots simplify down sophisticated stock evaluations and market movements into simple English, consumers no longer need to be financial experts to understand them. For instance, an investor may ask for a complete study of a company, and the chatbot would provide it without the need for technical language by pulling information from news, historical data, and current market patterns (Khan & Umer, 2024).

1.2 Enhancing Financial Literacy and Democratizing Access to Financial Markets

Artificial Intelligence has already had a significant impact on the banking industry with its use in fraud detection and algorithmic trading. However, the focus of this research is specifically on the role of the conversational AI in the Indian stock market. India still has a poor level of financial literacy, especially amongst the retail investors. This includes understanding personal money, budgeting, and investing. AI chatbots can be introduced as a tool which possess the exceptional capability of converting intricate financial ideas into comprehensible English. For many, this is the first step towards making well-informed choices and avoiding typical pitfalls like mindlessly adhering to market rumours or giving in to peer pressure.

AI chatbots also provide a fair playing field, which has typically been controlled by financial specialists or institutional investors. Personalized insights that were previously exclusive to the limited ones are now available to retail investors according to their preferences, financial goals, and risk tolerance. The widespread accessibility of excellent financial knowledge marks a revolutionary change in a market like India, where only selected & few well-informed individuals have traditionally held control. Investors are already finding it easier to negotiate the complexities of market volatility and risk due to the integration