

CAN CHATGPT BE A GOOD FINANCIAL ADVISOR?

STATEMENT OF RESEARCH PROJECT

This project aims to explore a novel aspect of behavioral finance: whether investors can distinguish between investment comments from two sources: artificial intelligence (AI), represented by ChatGPT, and professional human investment advisors. It also examines whether the financial recommendations generated by ChatGPT influence people's investment decisions.

The project is structured around key themes. The first theme explores whether investors can differentiate between stock evaluations generated by ChatGPT and those by human investment advisors. Large language models (LLMs), like ChatGPT, have excelled in various natural language processing tasks, including assisting in paper writing, data analysis (Korinek, 2023), automatic code generation (Dale, 2021), and hate speech detection (Chiu et al., 2021). In the finance field, LLM technology may efficiently provide investment information, especially to individuals with financial constraints or lacking expertise, thereby addressing the issue of financial information asymmetry (Yue et al., 2023). A recent survey by The Motley Fool, a financial advisory firm, among over 2,000 Americans, found that around 50% of Generation Z and slightly over half of Millennials seek investment advice through ChatGPT. Additionally, JPMorgan is developing a ChatGPT-like service to provide financial advice, indicating the future use of AI models for stock selection. However, Spitale et al. (2023) argue that ChatGPT is a double-edged sword, capable of producing easily understandable and accurate information, but also convincing false information. In this context, ChatGPT could become a new source of misinformation, potentially misleading investors (Goldstein et al., 2023; Kreps et al., 2022; Spitale et al., 2023). Given the potential risks of misuse of ChatGPT and its impacts on investment, evaluating people's understanding of its text is crucial.

The second theme investigates the impact of ChatGPT's investment advice on individual investment decisions. While traditional text analysis and machine learning have aided financial decision-making by identifying sentiments within documents and recognizing market signals related to specific events (Kelly & Xiu, 2023), every decision carries inherent risks, especially in highly engaged fields like healthcare and finance. In such contexts, human advice is typically preferred over machine-generated recommendations (Longoni et al., 2019; Zhang et al., 2021). As a generative AI, ChatGPT relies on reasoning abilities to generate investment portfolio recommendations that traditional text analysis cannot produce (Lu et al., 2023). Furthermore, there has been significant progress in ChatGPT's quantitative reasoning capabilities, with its financial literacy score increasing from 65% in GPT3.5 to 99% in GPT-4 (Niszczoła & Abbas, 2023). The questions to be addressed are: 1) Will individuals trust the ChatGPT for financial investment advice? 2) Does ChatGPT's advice lead participants to favor lower-risk investments? 3) Does ChatGPT's advice lead participants to become overly confident by reducing their perception of cognitive uncertainty?

This research will employ experimental methods to investigate these critical questions. The project is innovative as it enhances our understanding of the role of artificial intelligence, exemplified by ChatGPT, in the field of investments. Furthermore, it aligns seamlessly with NTU2025 Strategic Plan, particularly within Research Theme 5, focusing on "Human Behavior and Technology." By examining the effects of generative artificial intelligence advancements on individuals, markets, and society, our project corresponds with the broader vision outlined in the NTU2025 Strategic Plan.

SCOPE OF WORK FOR SELECTED PHD STUDENT

The Ph.D. student will be actively involved in different stages of the project:

Background study and literature review

An in-depth background study and literature review is essential to the development of the hypotheses and interpretation of the results. This will be our primary focus for the first 5 months of the project.

Programming and Piloting Experiments

The student will learn Z-Tree and/or o-Tree, essential programming languages to run economic and behavioral experiments.

Laboratory Experiments, Data collection, and Data Processing

We will task ChatGPT with the role of an investment advisor, providing evaluations for selected stocks. Concurrently, experienced human investment advisors will evaluate the same stocks. Individuals with investment experience and needs will be invited to join online experiments. The experiment will require the use of programming languages like Z-Tree or o-Tree. Subsequently, we will collect, process, and analyze the experimental data using software like Stata or other statistical and econometrics tools.

Empirical analyses

Once data collection is completed, we will conduct empirical analyses.

Writing the paper

We intend to write 2-3 working papers after completing the experimental analyses.

Presentations at major universities and conferences

For the remaining time of the project, we will present the working paper at major universities and conferences to obtain valuable comments from fellow experts in the field. We will then amend our paper based on this feedback.