AI Advice-Taking in Financial Decision-Making: Examining the Role of Preference and Its Psychological Drivers

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Background

- Humans often exhibit poor financial judgments and decision-making[1], leading to negative personal and economic consequences.
- Artificial intelligence (AI) financial advice has shown comparable performance to human advisors[2]. This offers a cost-effective and highly scalable solution, especially for individuals without access to other high-quality financial advice sources.
- Despite these advantages, several obstacles to AI adoption exist, including a preference for human advisors and a reluctance to engage with AI, referred to as algorithm aversion[3].
- However, the extent to which these preferences influence the actual integration of advice from an AI advisor remains unclear.
- Furthermore, human-AI interaction is a complex phenomenon influenced by multiple factors[4], most of which have been studied in isolation. Hence, our second aim is to present a comprehensive framework that allows for a thorough exploration and understanding of multiple factors that impact AI advice integration.

Research Questions

Do people integrate AI advice as effectively as they integrate human advice when making (financial) decisions?

What is the role of preferences in learning from advice—Does algorithm aversion matter when it comes to integrating advice?

What are the psychological factors driving AI advice-integration?
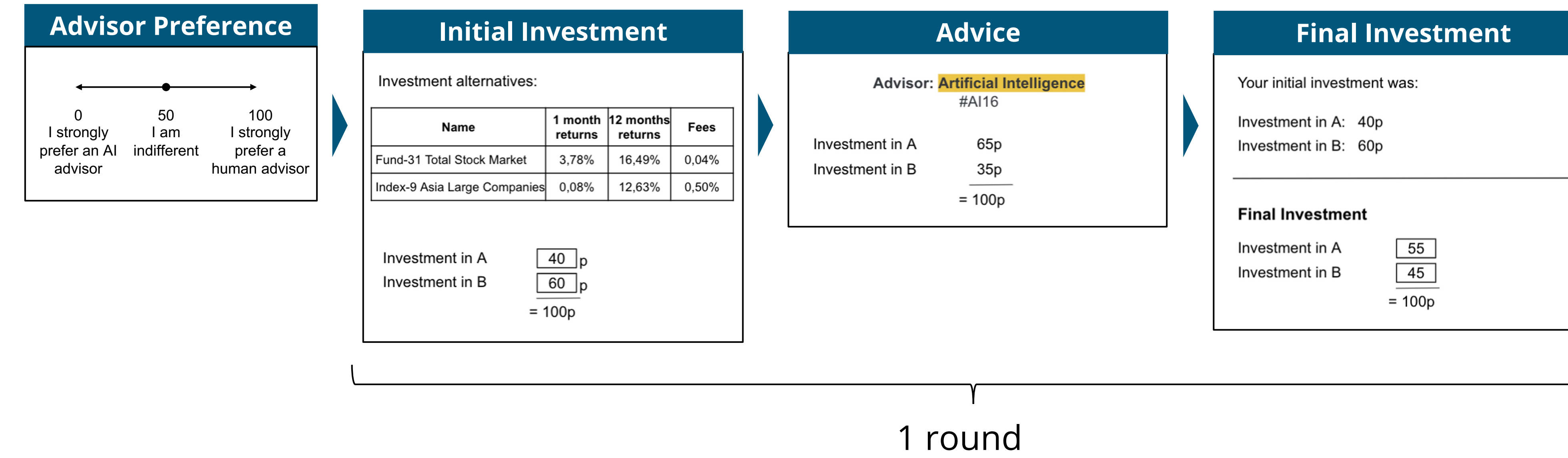
Methods

In two experiments (N1 = 138; N2 = 578), participants were asked about their advisor preference and engaged in an incentivized financial investment game, receiving either AI or human advice over 32 (Study 1) and 26 (Study 2) rounds.
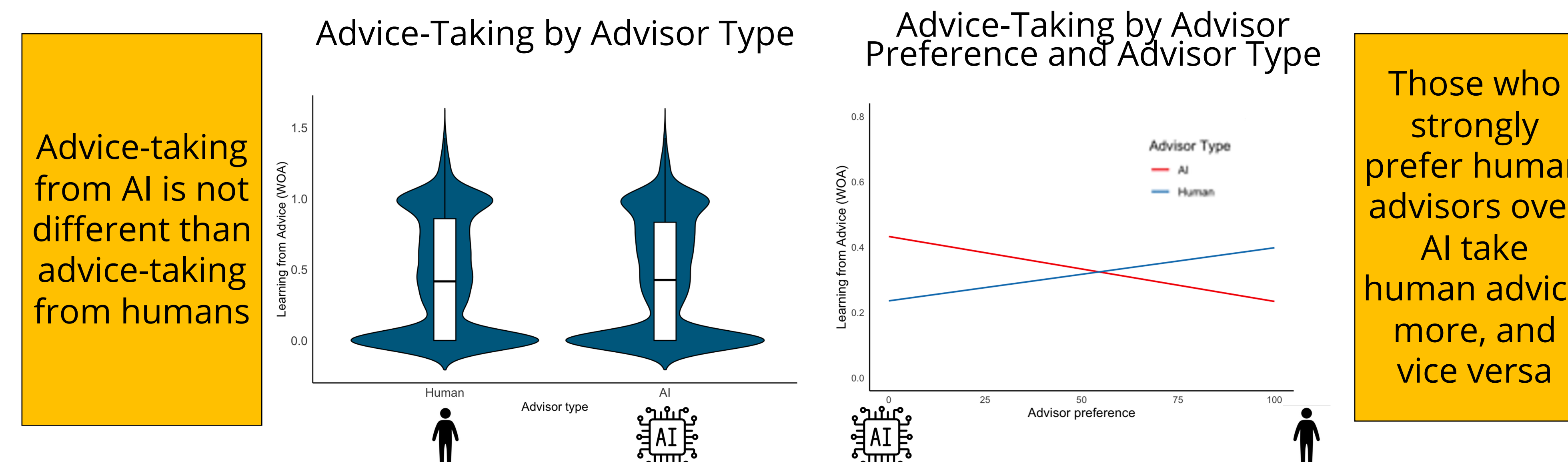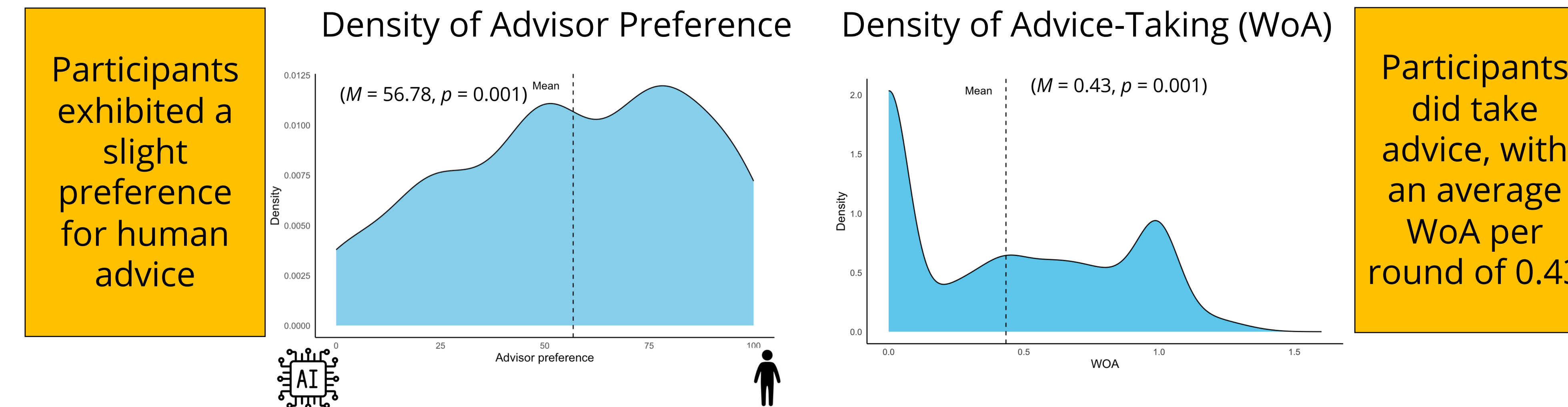We analysed the degree to which participants integrated advice by calculating the Weight of Advice (WoA)[5]. A multilevel regression was conducted controlling for financial literacy, AI technology acceptance, social conformity, and demographics.

$$\text{Weight of Advice (0.6)} = \frac{|\text{ final investment (55) - initial investment (40) }|}{|\text{ recommended investment (65) - initial investment (40) }|}$$

The Task

1 round

Results Study 1

Participants exhibited a slight preference for human advice

Density of Advisor Preference
(M = 56.78, p = 0.001)

Density of Advice-Taking (WoA)
(M = 0.43, p = 0.001)

Participants did take advice, with an average WoA per round of 0.43

Advice-taking from AI is not different than advice-taking from humans

Advice-Taking by Advisor Type

Advice-Taking by Advisor Preference and Advisor Type

Those who strongly prefer human advisors over AI take human advice more, and vice versa

All results were replicated in Study 2
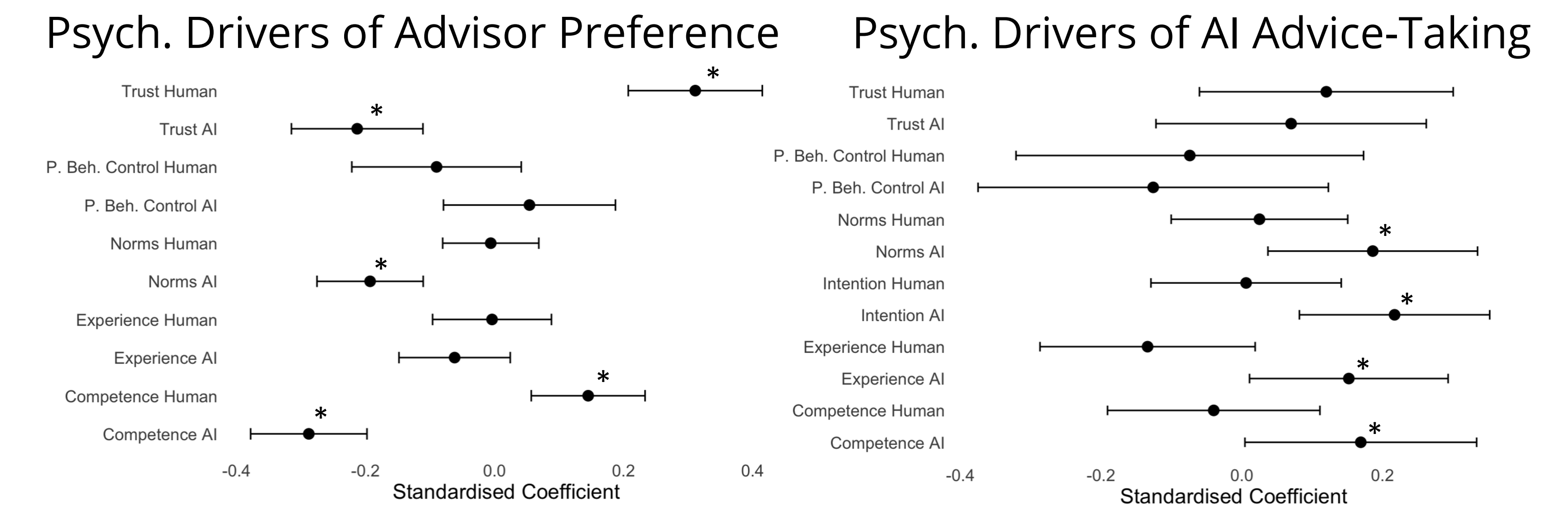
Results Study 2

In Study 2, we developed a framework and measured the **potential drivers** of AI advice-taking, drawing from models of behavioural change, social perception, and AI-human interaction.

Psych. Drivers of Advisor Preference

Psych. Drivers of AI Advice-Taking

The factors driving preferences and AI advice-taking are different. Unlike preferences, advice-taking does not reflect relative judgements

The intentions to take the advice from either source emerged as a better predictor of advice-taking than measured preferences

Conclusions

- Despite results showing an overall small preference for human advisors (algorithm aversion), there was no difference in the integration of either human or AI advice.
- Preferences barely matter—those with strong preferences integrate the advice from their preferred advisor to a higher degree.
- Intentions to take advice proved to be a superior measure than advisor preference.
- Preferences and advice-taking are driven by different factors.
- Human-AI interaction is complex and asymmetrical to human-human interaction.

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