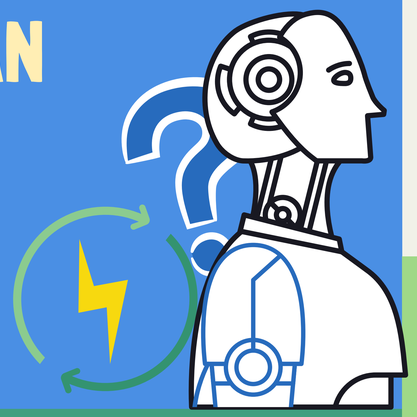
TRUST IN AI VERSUS HUMAN DECISION-MAKING FOR ENERGY ALLOCATION PROBLEMS



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RELATED LITERATURE

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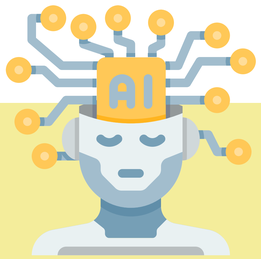
INTRODUCTION

The study investigates factors influencing trust in AI decision-making for energy allocation problems, compared to human decision-making. As AI becomes more prevalent in decision-making, understanding trust is crucial for ethical and effective use.



METHODOLOGY

SURVEY

Aim:

- What factors influence individuals' perception of trust in AI decision-making related to energy allocation problems?
- How do these compare to trust in human decision-making?

Method:

- Cross-sectional survey
- Fictional Vignette with three treatment conditions
  - EU publicly developed AI
  - American privately developed AI
  - A panel of Human Experts
- Outcome variable: Comfort level with decision-maker

169 respondents.

PROBLEM

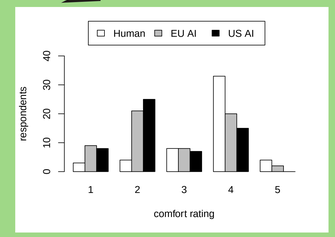
More research is needed about the perceptions **of the decision-makers**, rather than about their performance. Attention should be placed on ensuring individuals' confidence in the decision-maker, especially in safety-critical public service applications.

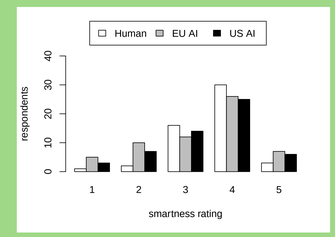
OBJECTIVE

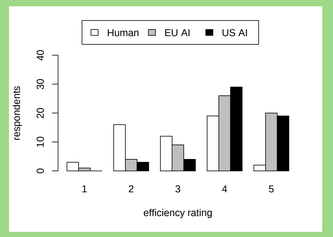
Examining individuals' perception of trust in AI-decision making, compared to human decision-making.

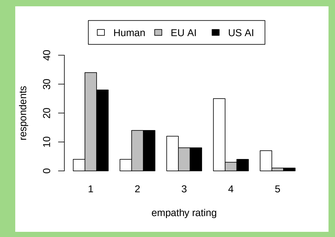
ANALYSIS

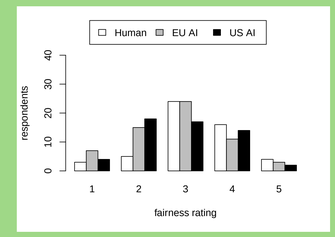
We conduct t-tests ($\alpha = 5\%$) and regressions to conclude whether or not people perceive AI decision-making differently than human decision-making.











RESULTS/FINDINGS

- **Human decision-makers** are trusted the most, **the private AI** is trusted the least.
- Human decision-makers are perceived as the **smartest and most empathetic** decision-makers.
- Both AI decision-makers are deemed **equally efficient; more efficient than human decision-makers.**
- **Fairness** is perceived as highest among the human decision-makers.
- **Perceived smartness** does not depend on the decision-maker.

- **Perceived smartness** and **fairness** are the most **important attributes** for a human decision-maker to increase the associated comfort level.
- **Perceived smartness** is an important attribute for increasing the comfort level associated with the AI decision-maker regulated by the EU.
- **Fairness** is an important attribute for increasing the comfort level associated with the AI decision-maker made by firms in Silicon Valley.
- **Perceived efficiency** and **empathy** are not considered important attributes for any of the decision-makers.

CONCLUSION

Optimism in AI did not increase trust in AI, and that people preferred human decisions over AI ones.

Smartness and fairness are key attributes for both types of decision-makers, but also different attributes are important for different decision-makers.

RECOMMENDATIONS

1. Businesses and public authorities should consider the smartness and fairness of AI systems when using them for energy allocation problems, as these factors influence the comfort of people with AI decisions.
2. They should also improve the perceived fairness of AI systems, which is lower than that of human decision-makers.
3. Optimism in AI alone may not increase trust in AI systems.