Artificial Intelligence – Gender-Specific Differences in Perception, Understanding, and Training Interest

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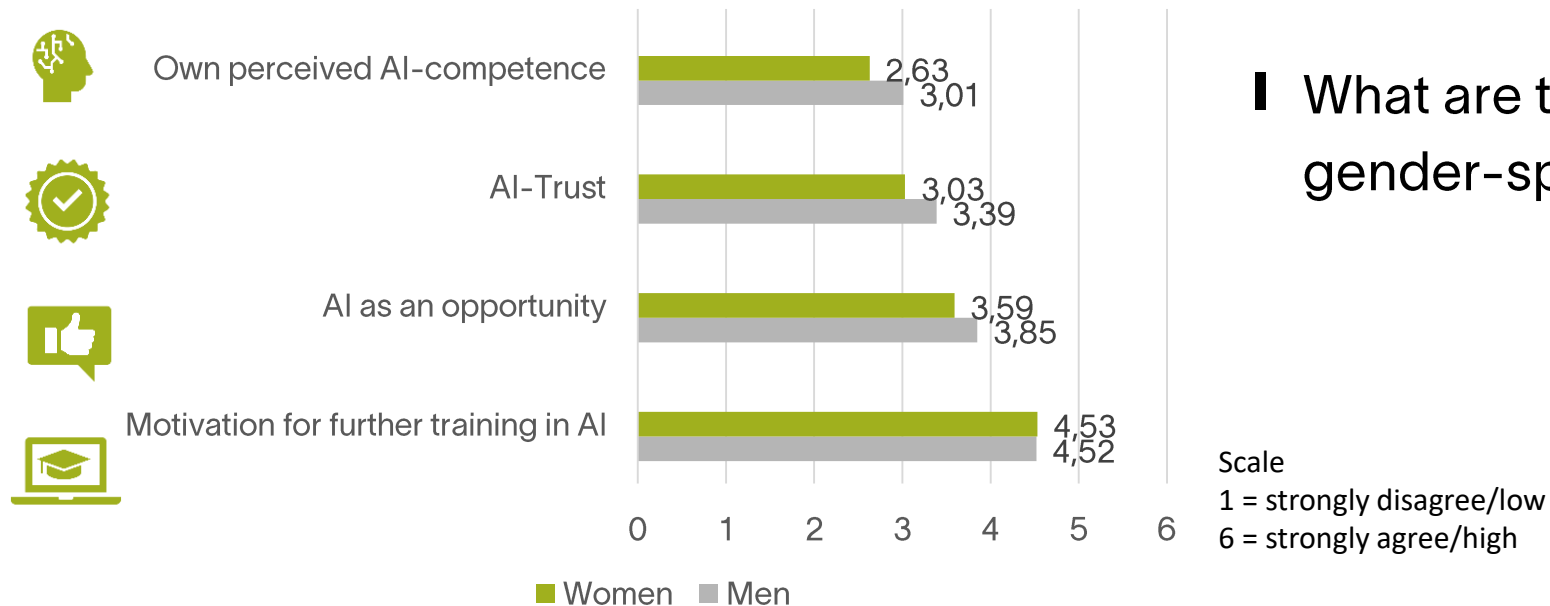
STRUCTURE

THEORETICAL BACKGROUND

❚ Although Artificial intelligence (AI) has become a key topic in business and society and increasingly impacts our everyday lives and economy, women make up only about 25% of researchers in AI overall (World Economic Forum, 2020).

Own perceived AI-competence — Women 2,63 / Men 3,01

AI-Trust — Women 3,03 / Men 3,39

AI as an opportunity — Women 3,59 / Men 3,85

Motivation for further training in AI — Women 4,53 / Men 4,52

(x-axis: 0 1 2 3 4 5 6)

■ Women ■ Men

❚ What are the causes of these gender-specific perspectives?

Scale
1 = strongly disagree/low
6 = strongly agree/high

RESEARCH QUESTION

- The objective of the study is to analyse the attitudes and perceptions of women towards AI and to identify possible factors for a more critical and cautious attitude.

What perceptions do women have of the role and significance of AI, and how can women's confidence and interest in the topic of AI be strengthened?
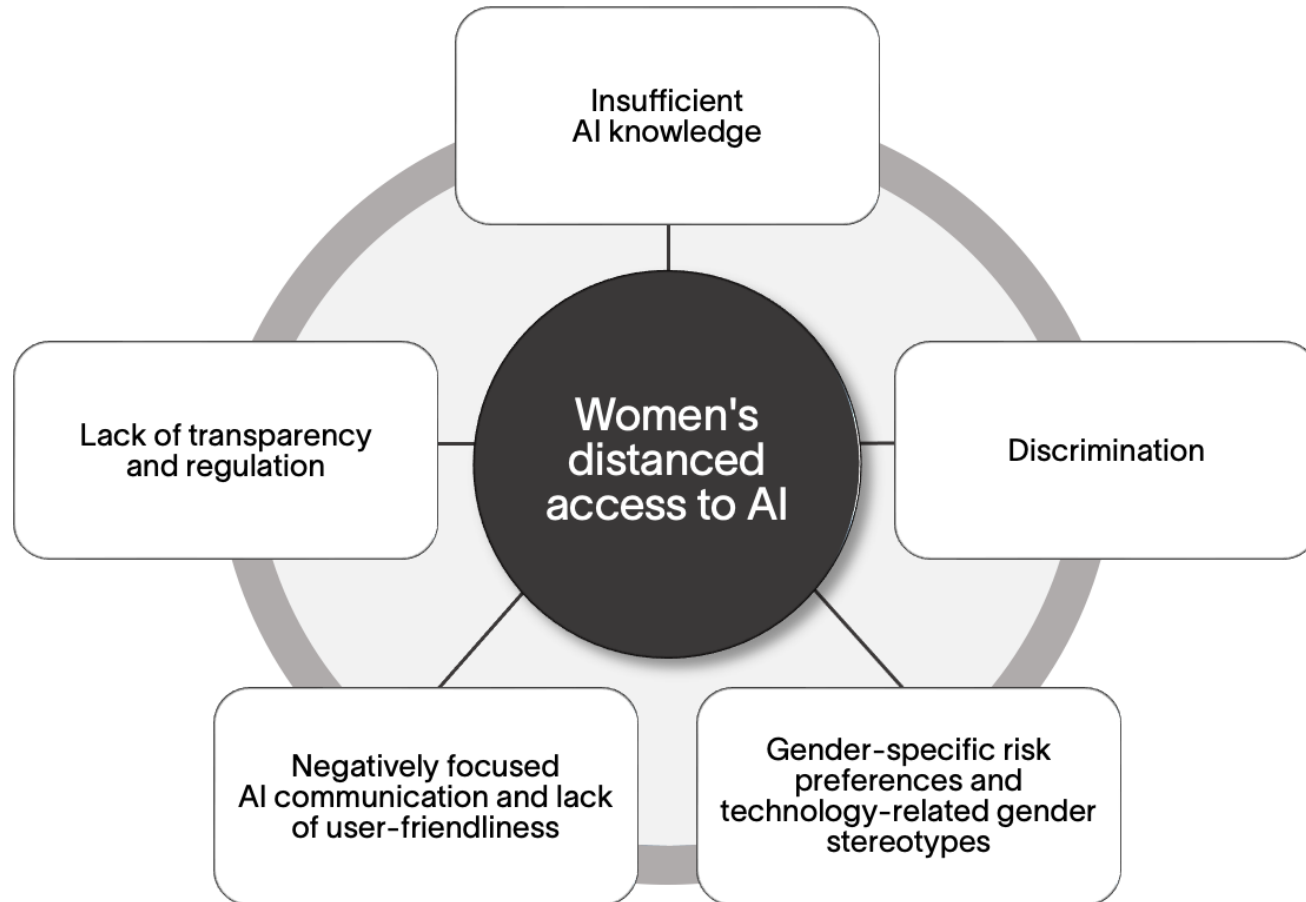
- The results of the study can be used to guide the design of training measures to strengthening equality regarding AI technologies.

METHODS

2x

90 minutes

May 2023
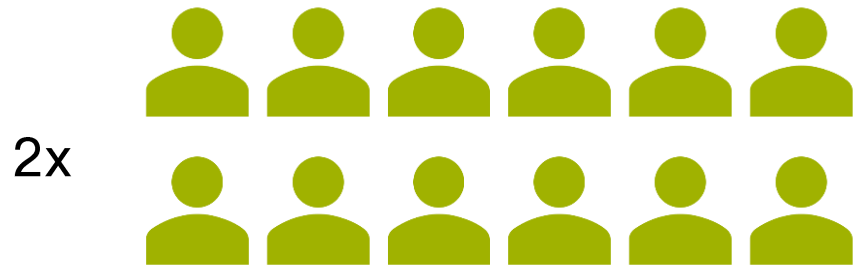
RESULTS

Factors influencing women's attitudes and perceptions of artificial intelligence

Women's distanced access to AI

- Insufficient AI knowledge
- Discrimination
- Gender-specific risk preferences and technology-related gender stereotypes
- Negatively focused AI communication and lack of user-friendliness
- Lack of transparency and regulation

INSUFFICIENT AI KNOWLEDGE

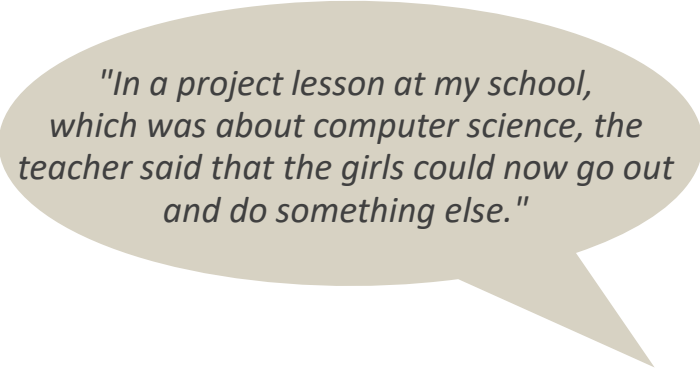**I** The participants report little knowledge on the subject of AI

"It's a cycle. There is not enough interest because there is not enough knowledge."

• People tend to be interested in topics about which they already have a certain level of knowledge (Renninger and Hidi, 2019).

Knowledge is an essential prerequisite for trust in and a positive perception of AI.

DISCRIMINATION

"In a project lesson at my school, which was about computer science, the teacher said that the girls could now go out and do something else."

▌ Stereotypes and biases about gender roles in STEM subjects exist and are often implicitly reinforced by teachers and educational institutions (Hill et al., 2010).

▌ Such preconceptions can affect women's self-perception of their abilities and affiliation in technological and scientific disciplines (Stout et al., 2011).

Discrimination in educational institution prevent access.

RISK PREFERENCES AND GENDER STEREOTYPES

"...men tend to be more willing to take risks, while women are more cautious."

"There is a certain image of women with norms of how they should be and what they are interested in that influences what they are interested in."

▌ According to Ball et al. (2010), women generally show greater risk aversion in their decisions. In addition, women tend to have a stronger social focus and higher empathy scores (Archer, 2019).

▌ Gender stereotypes not only influence how we perceive others and what opportunities we give them but also shape our self-image and behaviour (Ellemers, 2018).

Gender specific risk preferences and technology related gender stereotyps influence interest.

COMMUNICATION AND USER-FRIENDLINESS

▌ The negative image of AI (e.g. doomsday technology) could be due to misguided communication and a lack of user-friendliness.

"I have had many discussions with female friends, but they tend to be negative and more about the consequences than the function of AI."

" It doesn't feel like a human, so I don't want to interact with it any longer."

▌ The lack of perceived humanity in AI applications can lead to mistrust and discomfort (Karahasanović et al. 2021) and disappointing experiences with AI technologies can significantly reduce user acceptance (Luger and Sellen 2016).

Negatively focused AI communication and lack of user-friedliness disappoint.

LACK OF TRANSPARENCY AND REGULATION

- Two areas are important: first, the regulation of what AI is allowed to do and who decides on it, and second the transparency of AI systems.

- The protection of data and the improvement of data protection.

"You should consider whether there should be an authority that clarifies whether developments should be carried out in this way and what AI is allowed to do?"

"I would like to see mandatory labelling so that I know when I am interacting with AI."

Lack of transparency and regulation lead to skepticism.

PRACTICAL IMPLICATIONS

- **Early and ongoing education and training on AI**, especially about its potential impacts and applications (practical examples in your own field!).

- The education system should be one of the places to promote interest and enable a **fair transfer of skills independent of personal characteristics** such as gender.

- **More (visibility of) female role models,** because they have an amplfied impact on girls and women, particularly in fields long dominated by men.

- **More transparency regarding interaction with AI** and clear ethical guidelines.

- There is a need to **increase the proportion of women in AI research and development**, not least to actively address gender bias in AI systems.

THANK YOU FOR YOUR ATTENTION.

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