Decoding Gender Disparities in AI: An Experimental Exploration Within the Realm of AI and Trust Building

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Abstract : The widespread use of artificial intelligence in everyday life has triggered a fervent discussion covering a wide range of areas. However, to date, research on the influence of gender in various segments and factors from a social science perspective is still limited. This study aims to explore whether there are gender differences in human trust in AI for its application in basic everyday life and correlates with human perceived similarity, perceived emotions (including competence and warmth), and attractiveness. We conducted a study involving 321 participants using a two-subject experimental design with a two-factor (masculinized vs. feminized voice of the AI) multiplied by a two-factor (pitch level of the AI's voice) between-subject experimental design. Four contexts were created for the study and randomly assigned. The results of the study showed significant gender differences in perceived similarity, trust, and perceived emotion of the AIs, with females rating them significantly higher than males. Trust was higher in relation to AIs presenting the same gender (e.g., human female to female AI, human male to male AI). Mediation modeling tests indicated that emotion perception and similarity played a sufficiently mediating role in trust. Notably, although trust in AIs was strongly correlated with human gender, there was no significant effect on the gender of the AI. In addition, the study discusses the effects of subjects' age, job search experience, and job type on the findings.

Keywords : artificial intelligence, gender differences, human-robot trust, mediation modeling
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