

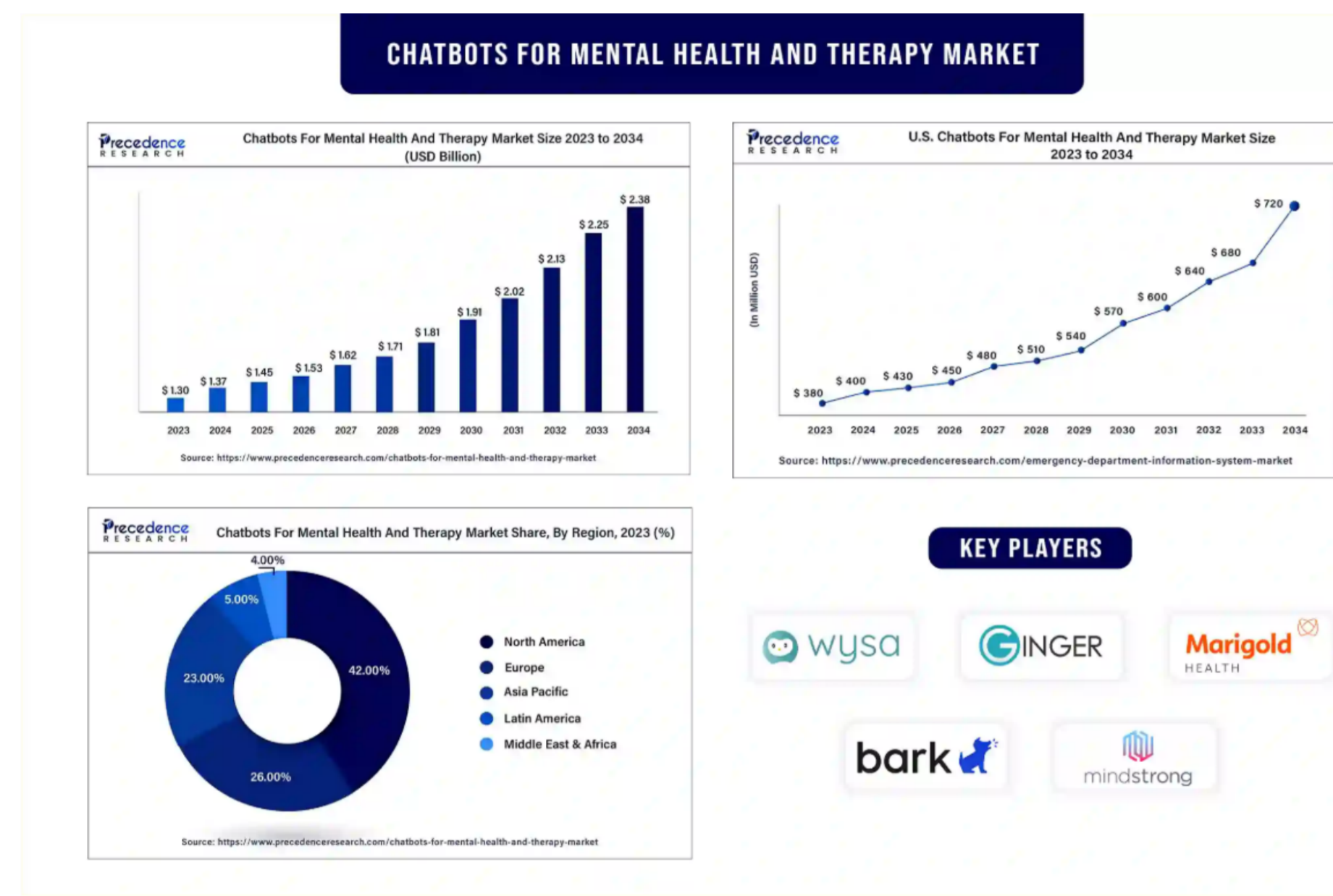
Do Privacy Policies Matter? Investigating Self-Disclosure in Mental Health Chatbots

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Introduction

- **Prevalence of Mental Health Issues:** Approximately **29.2%** of people experience mental health disorders over the span of their lives [11].
- **Shortage of Mental Health Professionals:** Up to **55%** of people in developed countries and **85%** in developing countries lack access to mental health services [2].
- **Solution: Mental Health Chatbots: Available 24/7, Convenient and Perceived as Non-Judgemental** [1]. Effectiveness depends on self-disclosure which allows chatbots to provide better and more therapeutic experiences.
- **Voice-or Text?** Voice based interactions proven to increase self-disclosure [14]. However, users express concern over data privacy and potential identification [6].
- **Privacy:** Privacy is sensitive given the risks of stigmatization and discrimination [8, 12] and concerns can lead to mistrust [13], less disclosure and act as a barrier in seeking help [7].
- **Sensitivity:** Given privacy concerns, information sensitivity is a key factor influencing user self-disclosure. sensitivity has shown to impact user willingness to engage with a topic [4] and be influenced by related privacy concerns [3].



Research Goal:

- Investigate if privacy policies can help improve self-disclosure, whether questions sensitivity affects disclosure and whether there is any interaction effect between the two factors.
- Contribute to building more transparent, trustworthy, and effective mental health chatbots.

Research Question

Main Research Question

How do privacy policies and the sensitivity of questions impact self-disclosure in a voice-based chatbot?

Research Sub-questions

- RQ1** Are users likely to disclose more personal information if they have a better understanding of privacy policy?
- RQ2** Does question sensitivity impact the willingness to self-disclose?
- RQ3** Is there an interaction effect between user privacy understanding and question sensitivity?

Methodology

Experimental Setup

- A mixed design study comparing two chatbots, one with a privacy policy and one without.
- In both chatbots, users were asked questions across three sensitivities: Low, Medium and High. Users reported self-disclosure willingness for all questions.
- Questions were selected from the SelfDisclosureItems dataset [9]
- Pre and post-tasks on Qualtrics were used to measure confounds and operationalization.

Variables

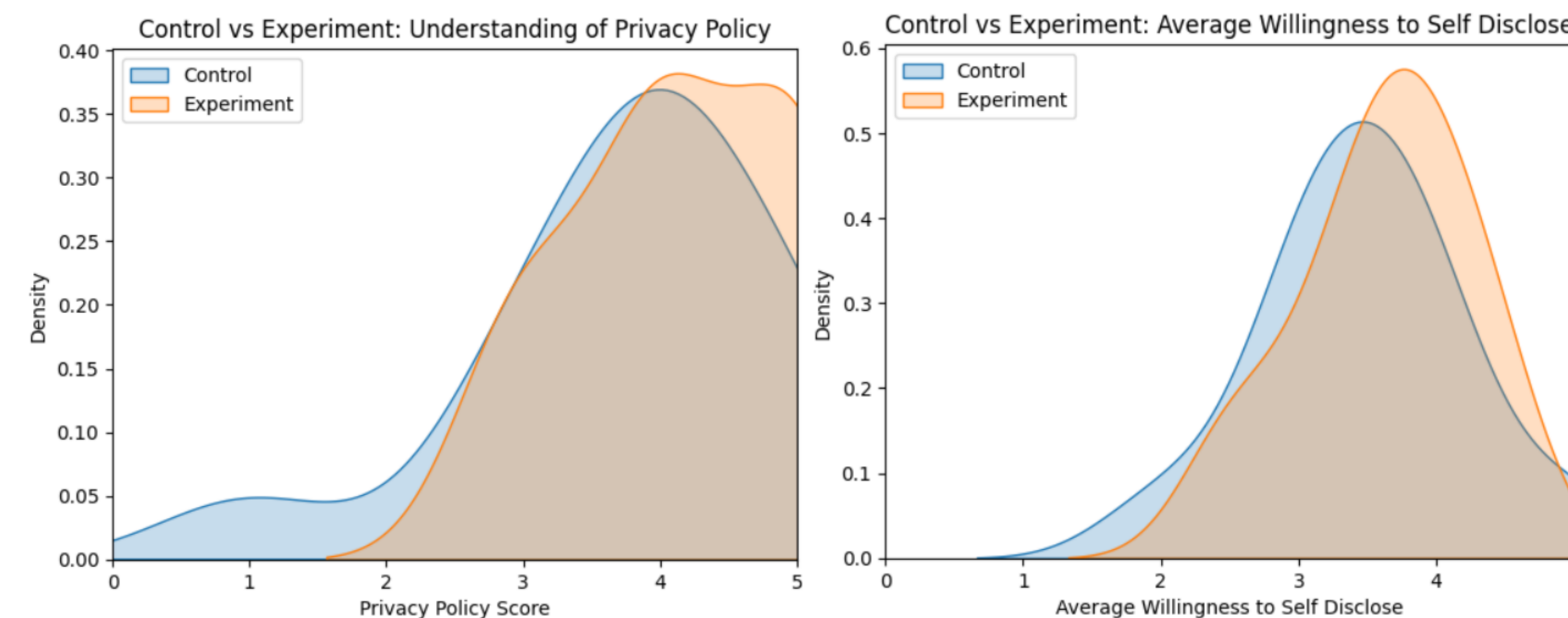
- Independent Variables: Privacy Policy, Question Sensitivity
- Dependent Variable: Self-disclosure willingness
- Confounding Variables: Age, Gender, Trust in AI and Privacy Attitude

Analysis of Results

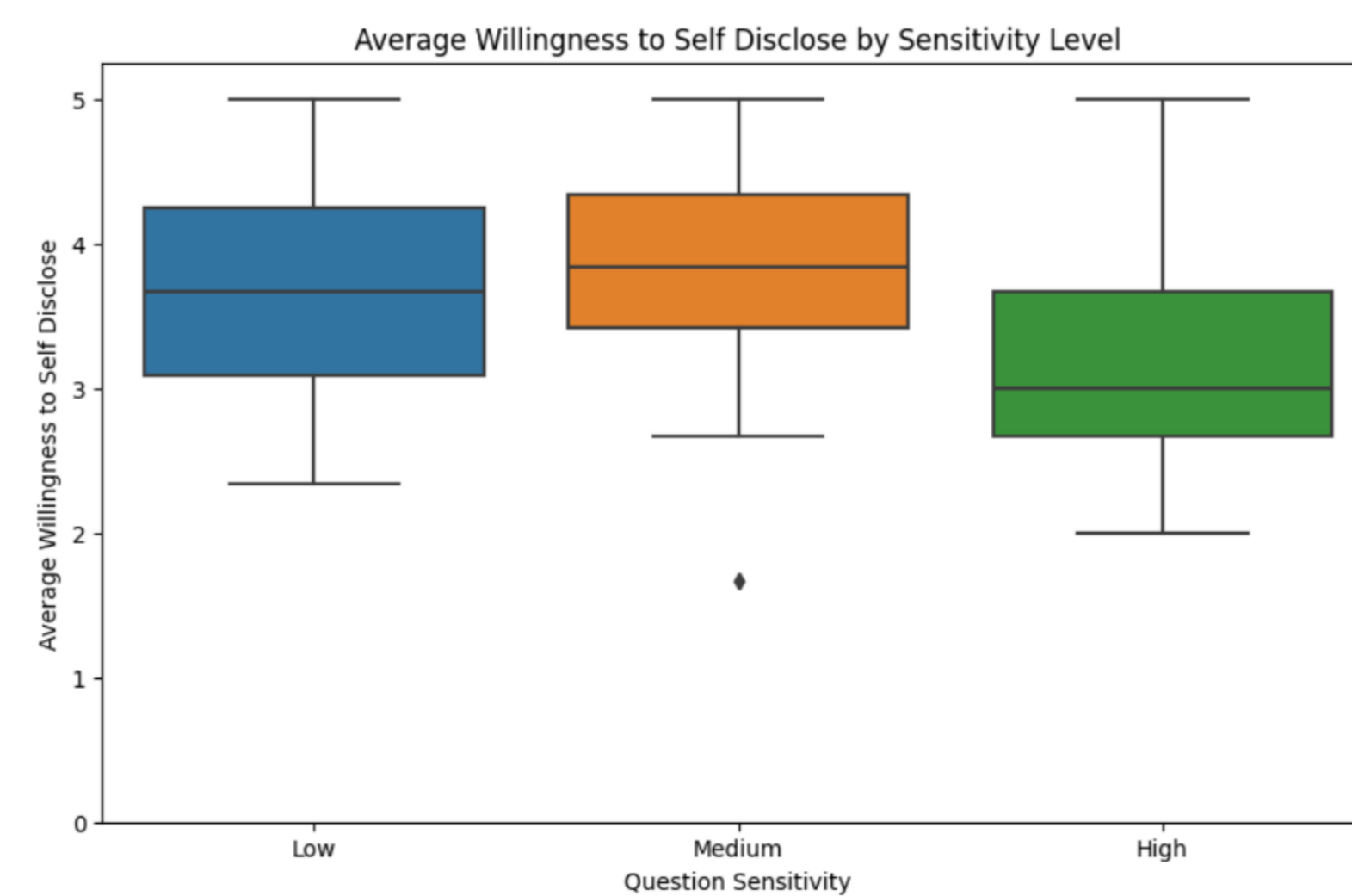
mixed ANOVA conducted to compare self-disclosure across privacy explanation conditions, disclosure across sensitivities, and interaction effect. **Assumptions validated** to ensure **normality, homogeneity of variance** and **sphericity**. Results reported from data of **26 participants**.

Results

Privacy and Self-Disclosure



Sensitivity and Self-Disclosure



Interaction Effect

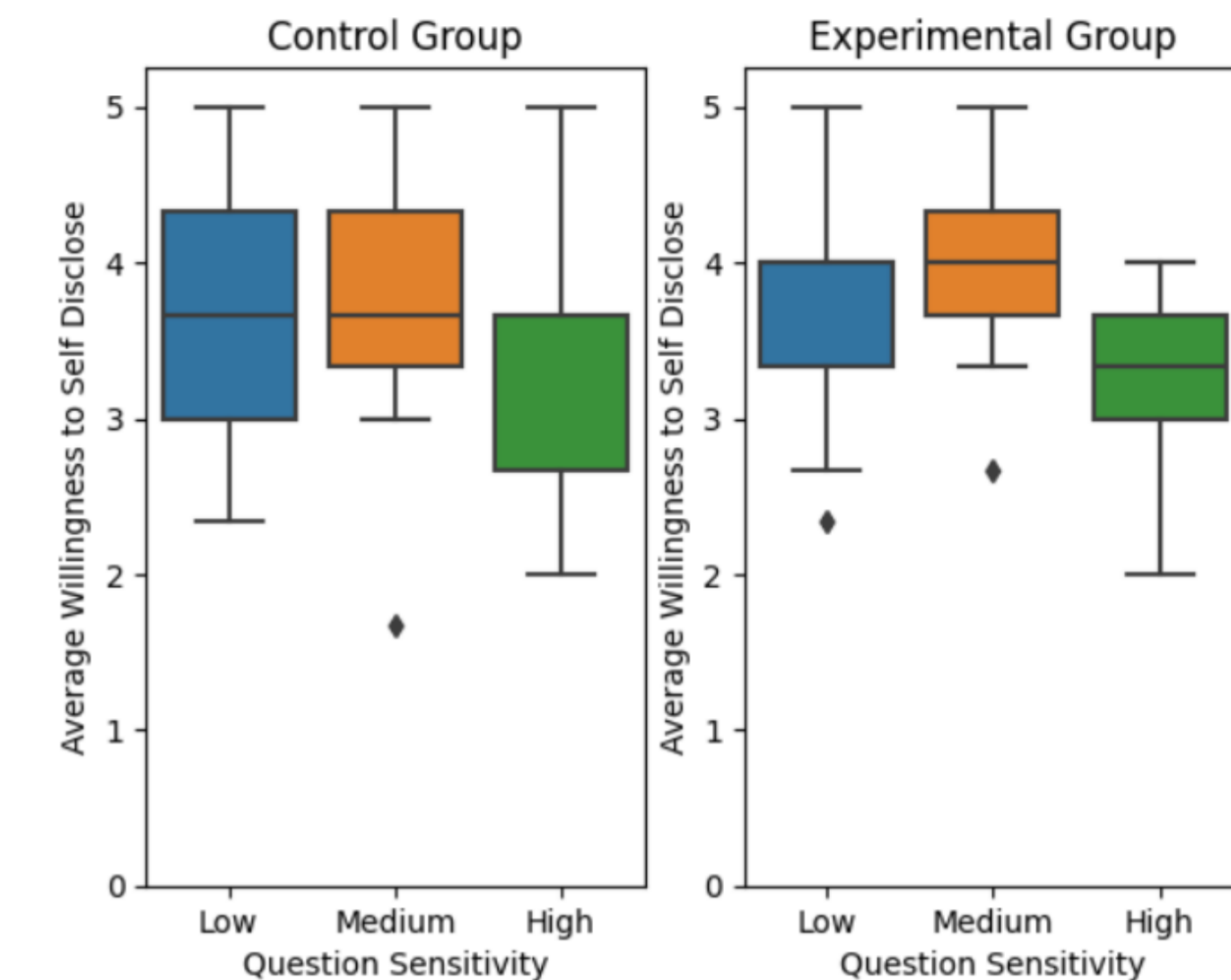


Figure 1. Self-disclosure across condition and sensitivity

Discussion and Limitations

RQ1: Results show slightly higher privacy understanding and self-disclosure willingness in experimental condition despite no statistical significance shown.

RQ2: Results and statistical tests show higher self-disclosure willingness for low, medium question sensitivity compared to high question sensitivity.

RQ3: No interaction effect observed between privacy policy and sensitivity. This is however expected as privacy understanding is similar in both conditions.

Limitations

- Limited representative participant pool for study given short project duration.
- Lack of free form interaction and assessment during study.

Conclusion and Future Work

- Our study suggests that providing a privacy alone does not significantly increase self-disclosure willingness.
- Self-Disclosure willingness does decrease as sensitivity increases especially in the case of high sensitivity questions.
- Future work should investigate larger, representative participant pools and investigate underlying perceptions of sensitivity and privacy.

References

The following references have been truncated to fit in the poster. A complete list is available upon request.

- [1] Alaa A. Abd-alrazaq, Mohannad Alajlani, Ali Abdallah Alalwan, Bridgette M. Bewick, Peter Gardner, and Mowafa Househ. An overview of the features of chatbots in mental health: A scoping review. International Journal of Medical Informatics, 132:103978, December 2019.
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- [4] Mick P Couper, Eleanor Singer, Frederick G Conrad, and Robert M Groves. Risk of disclosure, perceptions of risk, and concerns about privacy and confidentiality as factors in survey participation. J. Off. Stat., 24(2):255–275, 2008.