How to (Not) Fix Online Dating

An Empirical Assessment Using Computational and Experimental Methods

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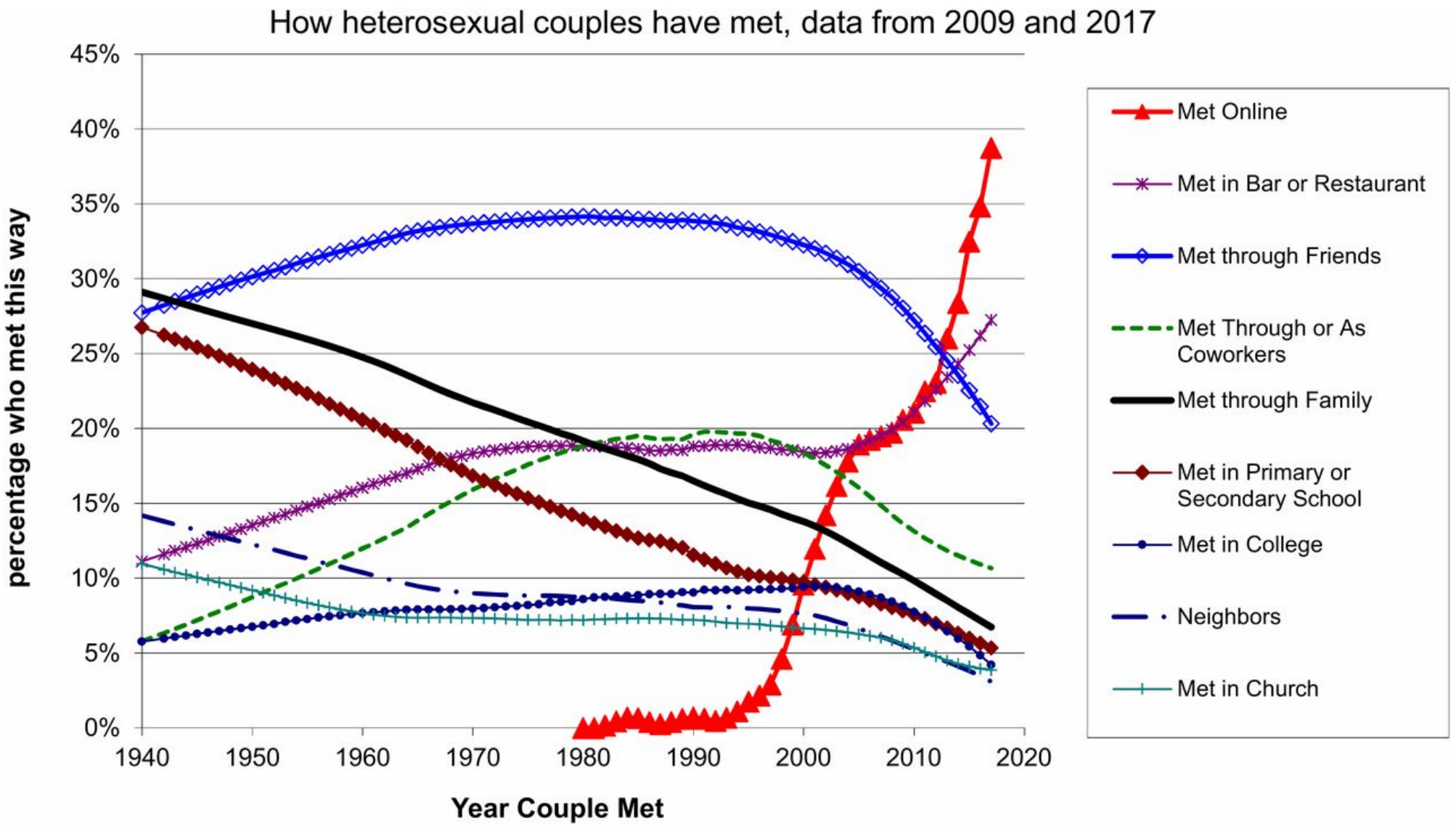
Online dating prevalence



Source: Rosenfeld, Thomas, and Hausen (2019)

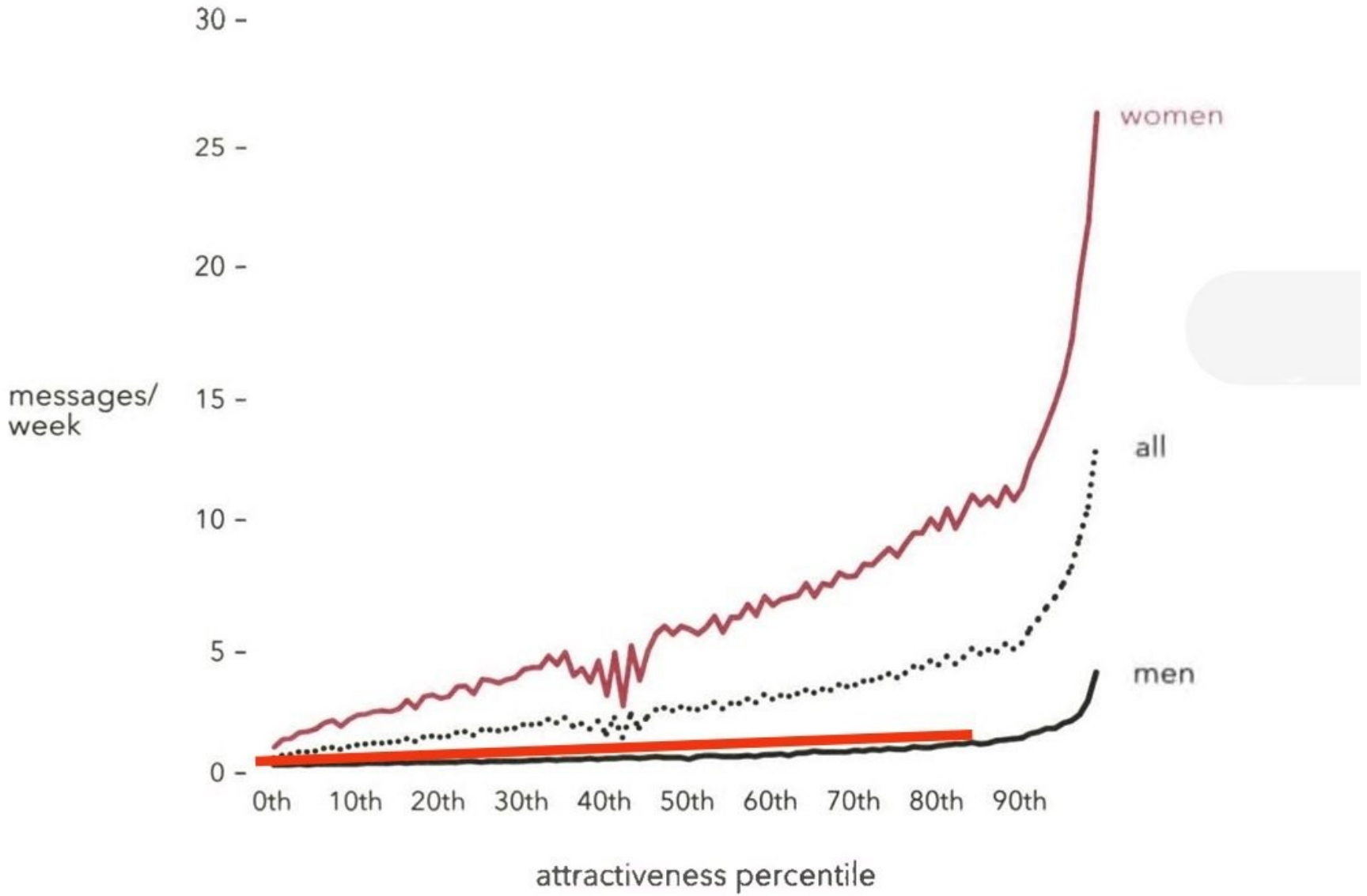
Previous research

Online dating data

- More men than women (2/3 vs 1/3)
- Men send majority of messages but receive very little (Rudder 2014; Su and Hu 2019; Skopek, Schulz, and Blossfeld 2011; Šetinová and Topinková 2021)
- Overall, women more picky compared to men

Surveys

- men report feeling insecure about number of messages (McClain and Gelles-Watnick 2023)
- women report feeling overwhelmed by the number of messages (McClain and Gelles-Watnick 2023)
  - & often report harassment (Vogels 2021)



Source: Rudder (2014)

Market congestion

> Congestion is a common issue in digital platform markets, wherein users tend to focus their attention on a subset of popular peers. (Huang et al. 2022)

- capacity constraints - the most popular users become “too busy” or overwhelmed by responses -› a lɑt of the effort spent pursuing them is wasted (Huang et al. 2022)
- dissatisfaction due to rejection
  - link between romantic rejection and male hostility (Andrighetto, Riva, and Gabbiadini 2019)
- harassment, churn
- in the case of online dating, those users are often attractive, young women (Šetinová and Topinková 2021)

Previous research on market congestion

Karmegam, Ramaprasad, and Gopal (2022)

- quasi-experimental, partnership with Indian online dating site
- focused on women's experience
- restricting users' visibility for men
  - claim to improved women's experience and matching for both

Huang et al. (2022) - field experiment, partnership with Chinese online dating site

- disclosing individual's popularity and demand (high: "Received x requests in the past, this lady (or gentleman) is very popular"; low: "Received x requests in the past, this lady (or gentleman) is not picked by many others")
  - decline in targetting highly popular users, efforts more spread -› lower congestion
  - stronger effect for individuals who are not themselves popular

Pilot questions

Broad RQ: How does altering the (structural) components of online dating environments influence the mating choices of individuals?

How to test it?

--› By building an app that would allow to test different market affordances, while having complete control over them.

RQ1: Can the disclosure of profiles' popularity lower the market congestion?

i.e., replication of Huang et al. (2022)

RQ2: How far can we get without having a real market?

(e.g. Salganik, Dodds, and Watts (2006))

Interactive web application

- photo
  - Chicago Face Database (Ma, Correll, and Wittenbrink 2015), subset of happy photos, ages 18-40, Black and White models, attractiveness rated by independent judges
  - encodes gender, ethnicity, age, attractiveness
- age (based on rating of photo)
- education (lower than high school, high school, university)
  - generated randomly

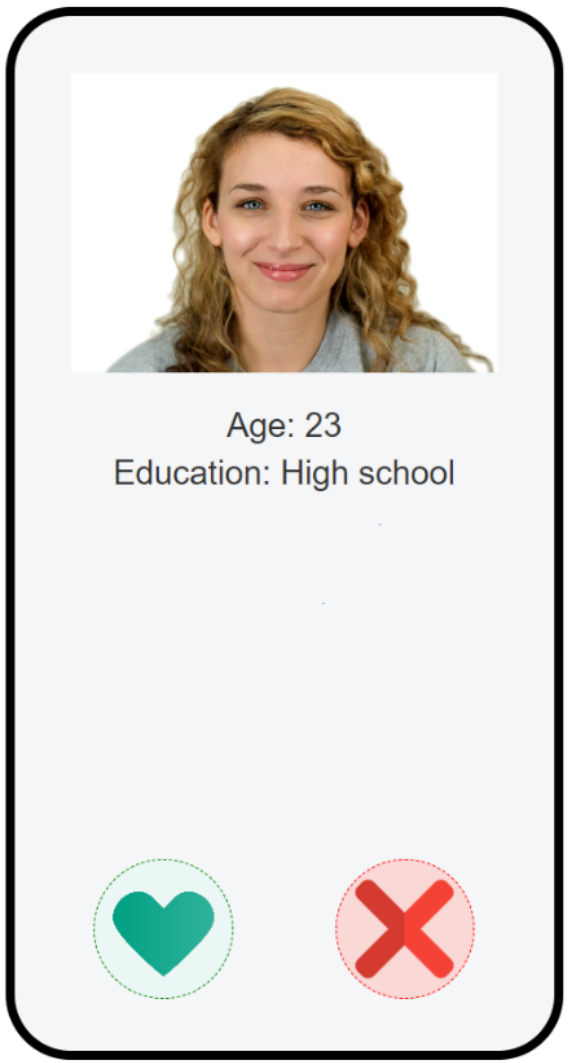
Experimental condition

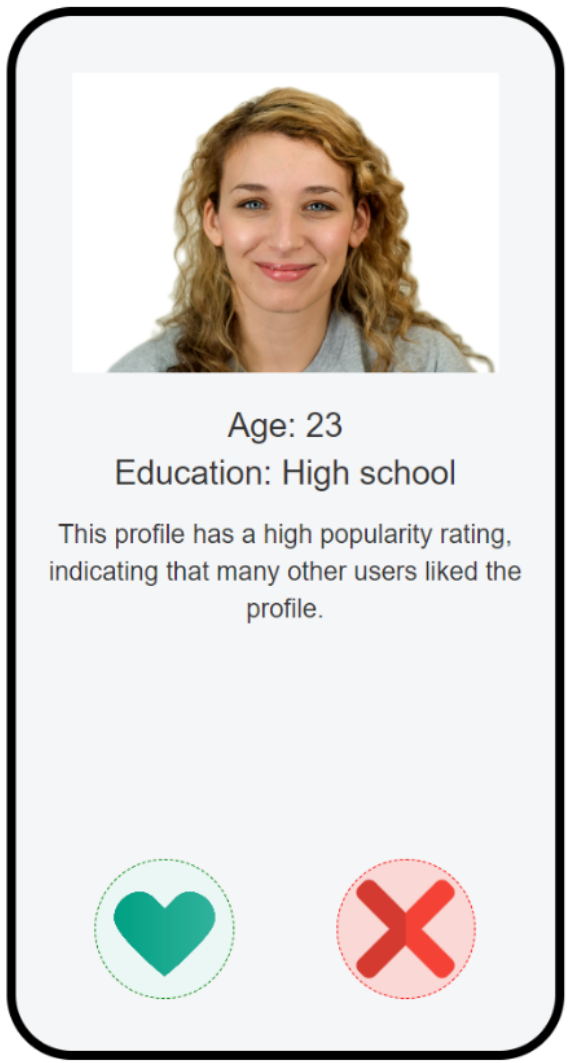
Treatment: Disclosure of individual popularity of profiles (based on attractiveness)

> This profile has a **low/medium/high** popularity rating, indicating that **not many/some/many other** users liked the profile.

Control: No disclosure of individual popularity of profiles

Interactive web application

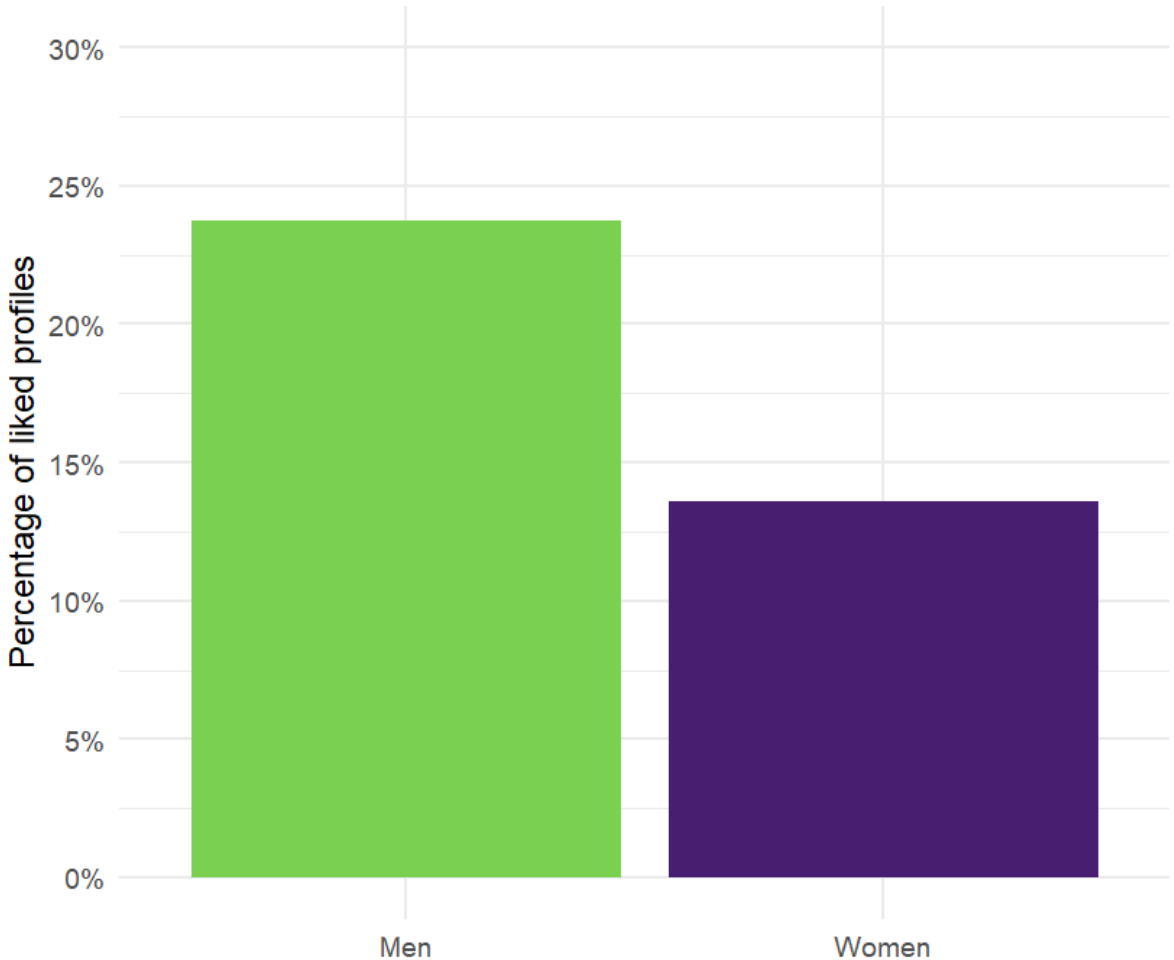




Pilot study

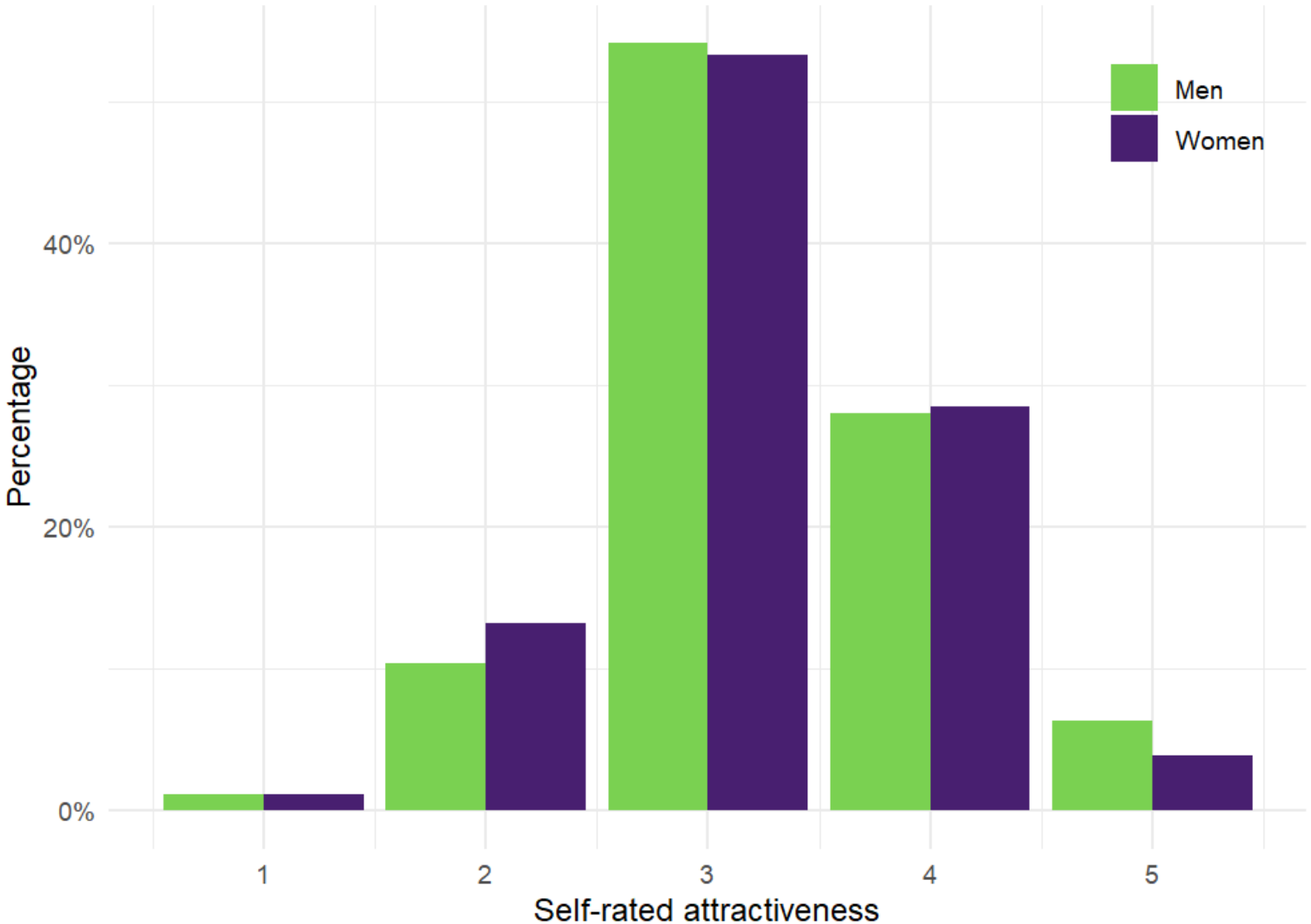
- no well-defined population for online daters
  - & differences between platforms
- Recruitment via Prolific
  - see Douglas, Ewell, and Brauer (2023) on data quality in online human subject research
- UK, US, Germany, France
  - English speakers aged 18-35, balanced gender sample
- 1100 participants recruited on 16. - 17.11.2023
  - removed users who were too fast, timed out etc.
  - compared demographics provided by Prolific to those we collected

Sanity checks



Even in “no stakes” scenatio, women are more picky than men

Sanity checks



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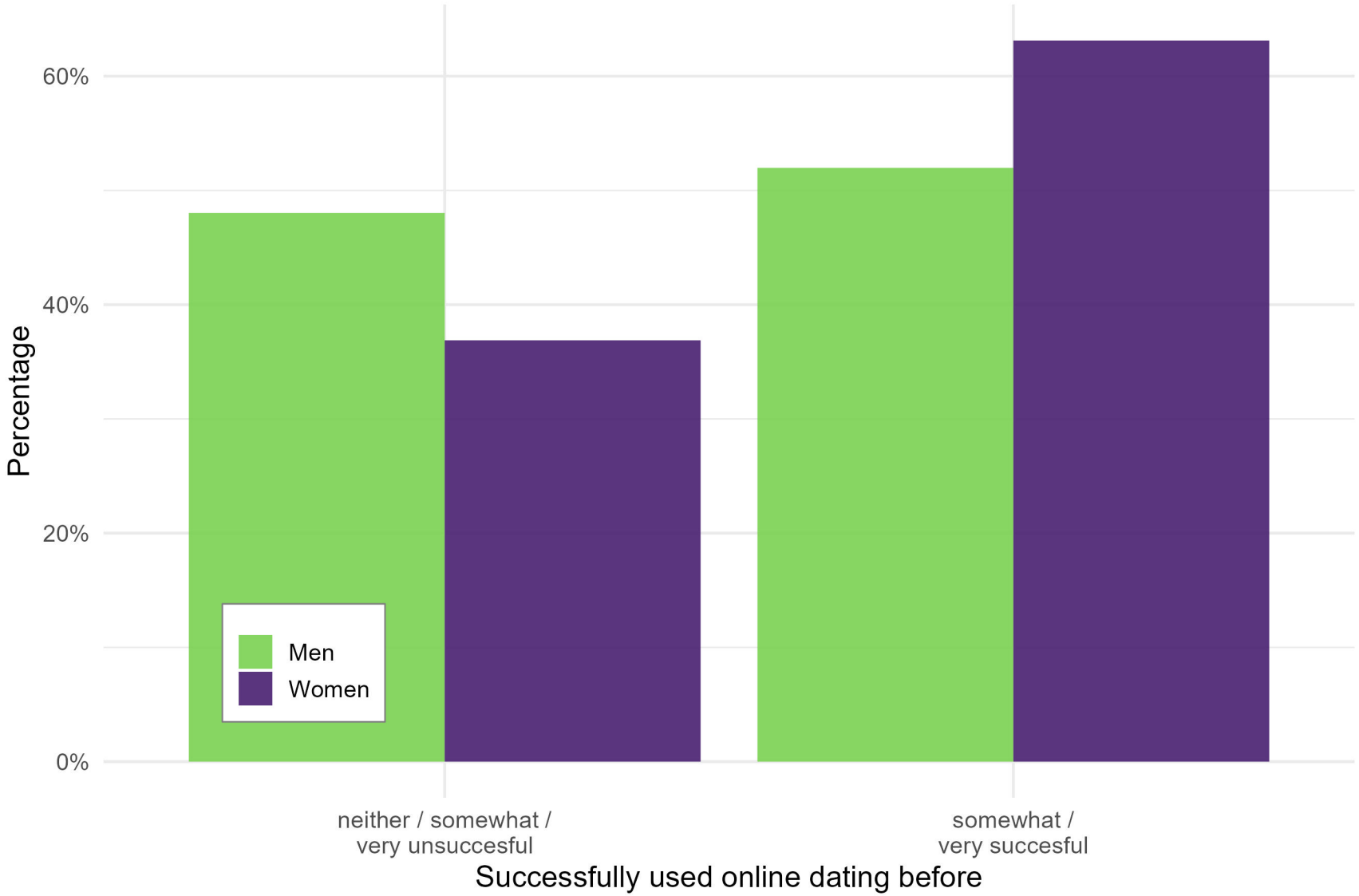

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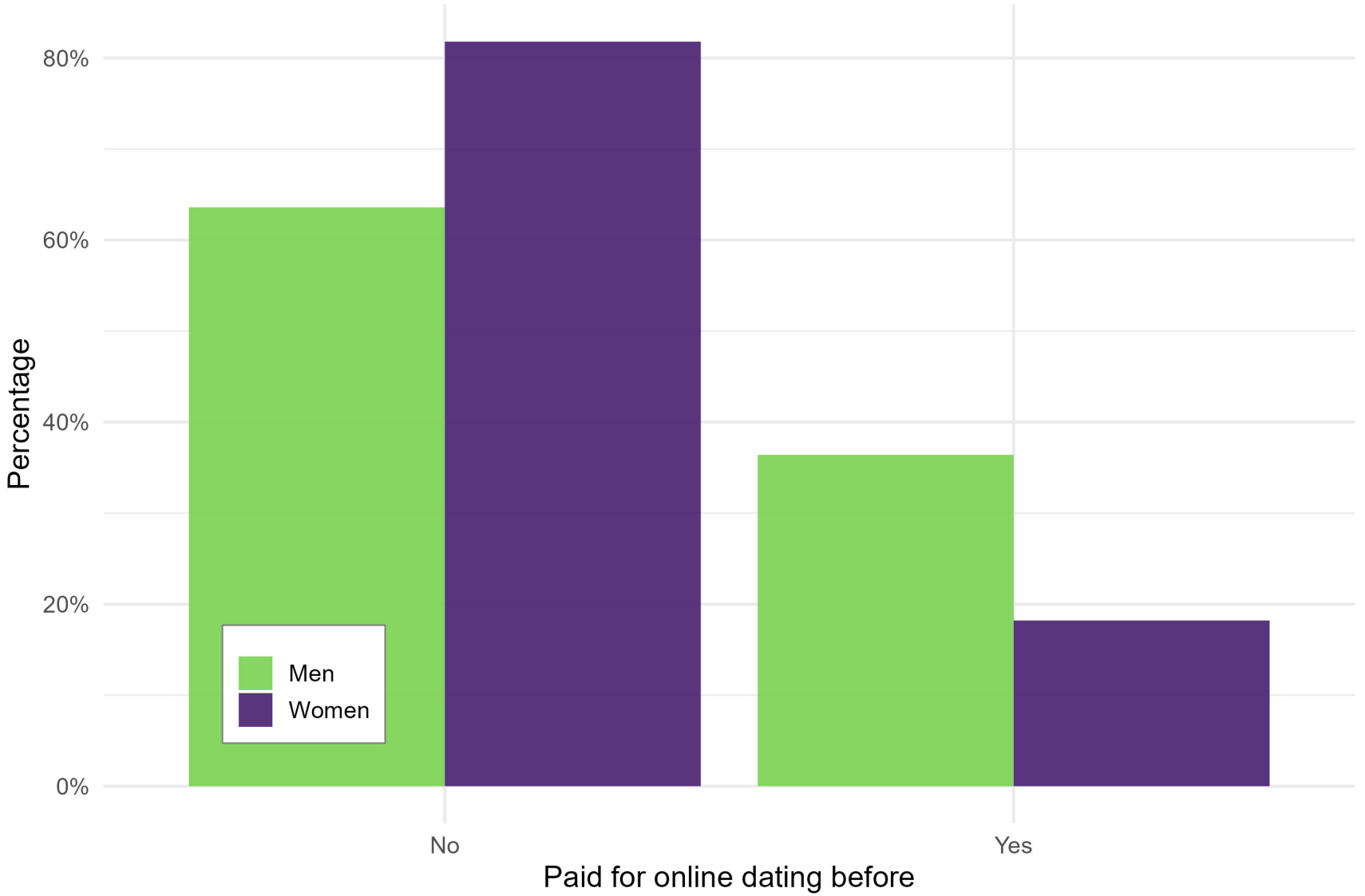
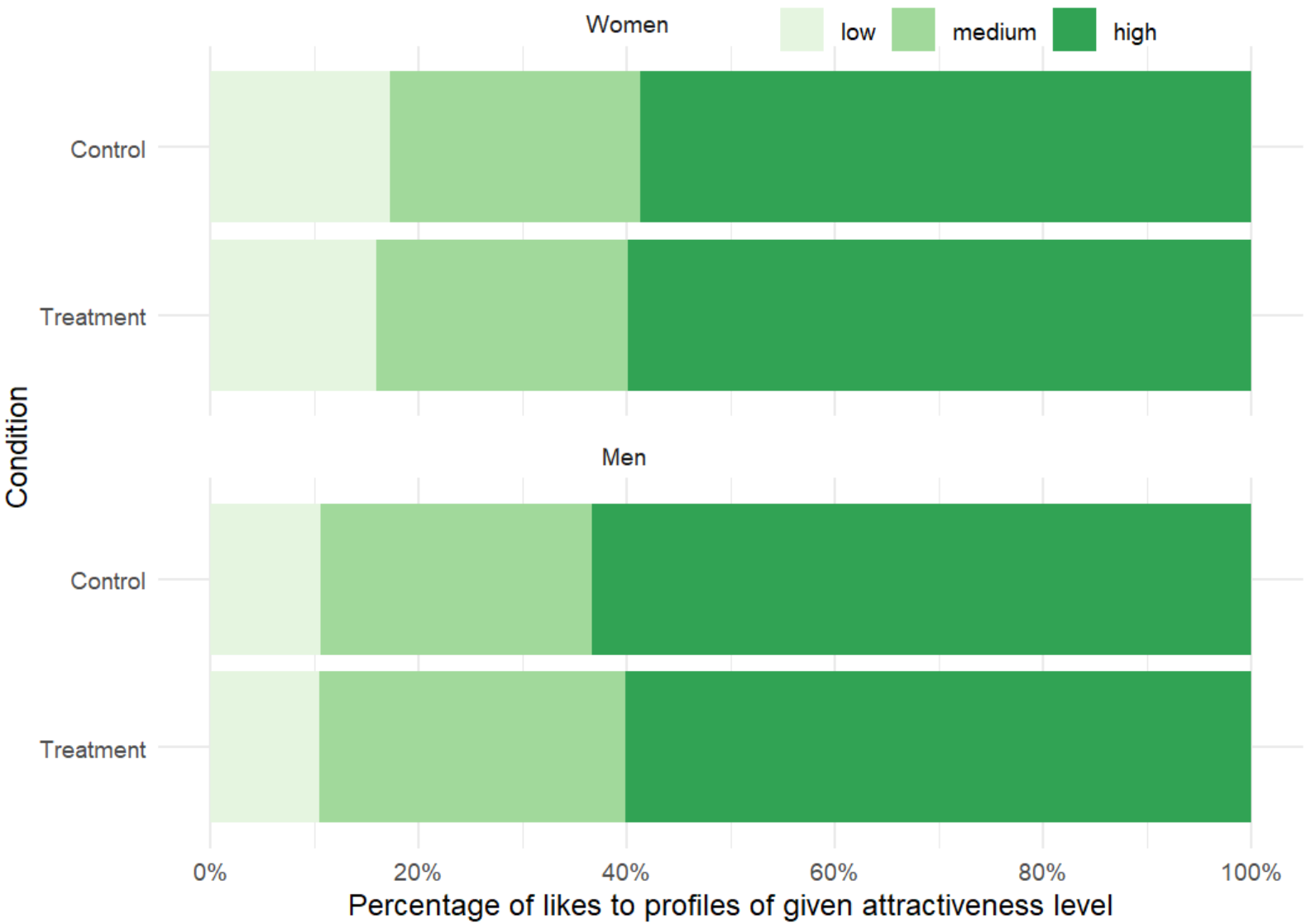
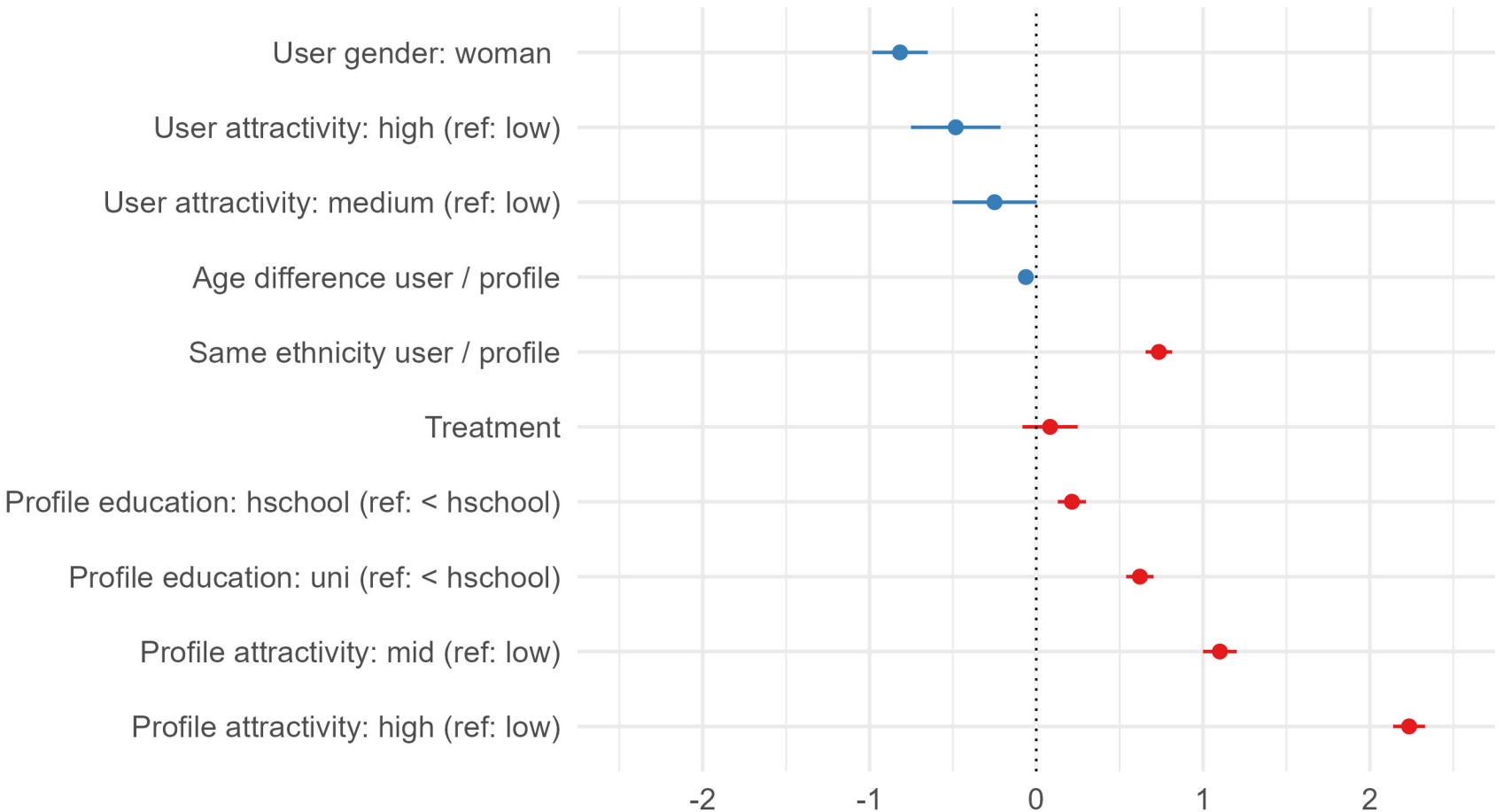


Experiment: Distribution of likes

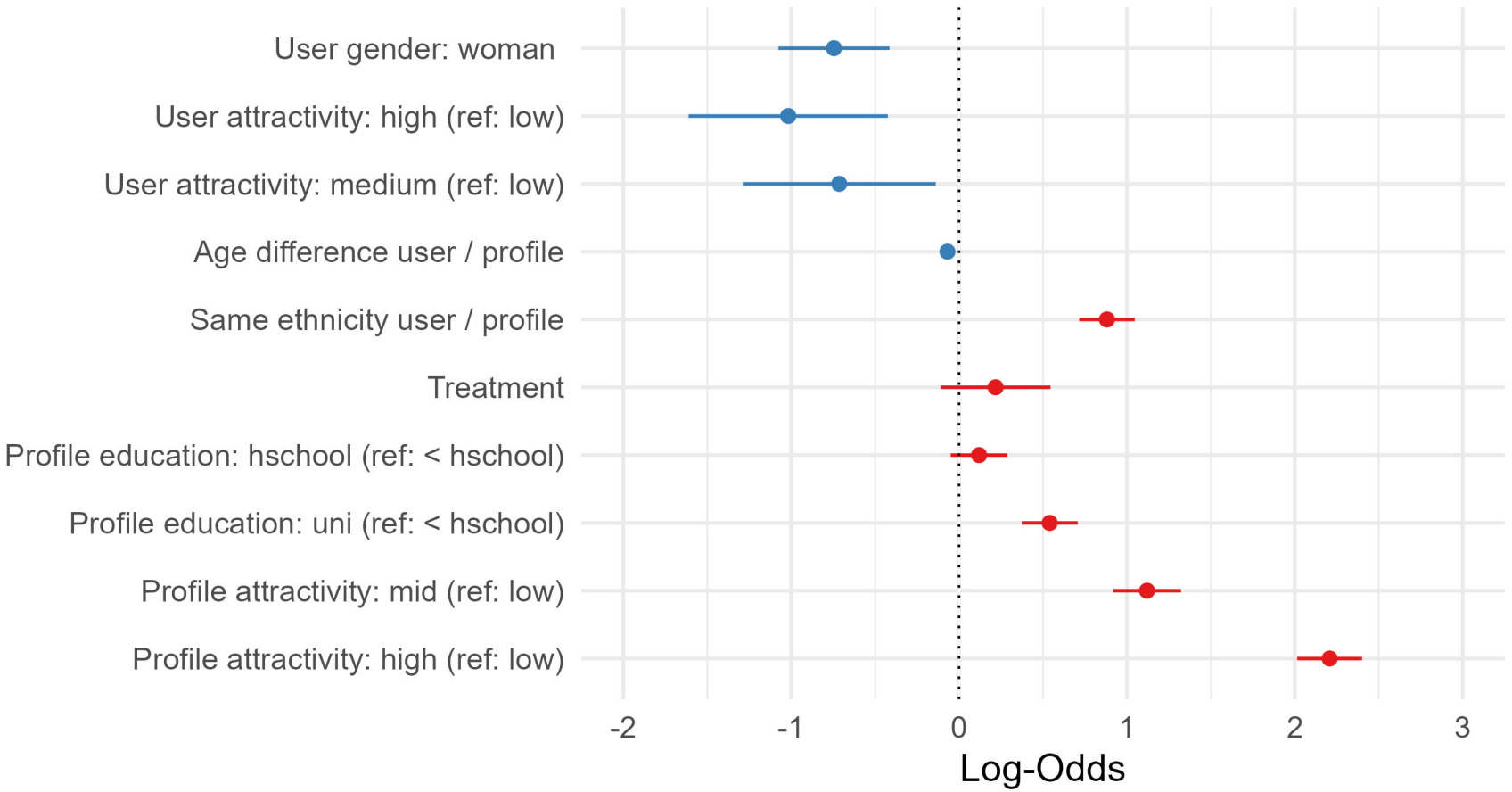


Modelling profile likes: Full sample



Random intercept logistic regression model. Dependent variable: like of shown dating profile.
Treatment: popularity indicator for shown profile. Observations: user decisions, nested in users.
Forest plot depicts logit coefficients and 95% confidence intervals.

Modelling profile likes: Online dating & looking



Random intercept logistic regression model. Dependent variable: like of shown dating profile.
Treatment: popularity indicator for shown profile. Observations: user decisions, nested in users.
Subsample: users with prior online dating exp. & currently looking for casual / serious relation.
Forest plot depicts logit coefficients and 95% confidence intervals.

Conclusion

Null effect for the treatment - Information disclosure does not seem to influence the results

- in contrast with Huang et al. (2022)

Why?

- artificial vs real market
  - but our other results seem to be consistent with expectations from real markets
- culture
  - previous research done on specific markets (China)
- Website vs app setting
  - initiating matches with additional partners less costly on apps
  - treatment may need other representation (e.g. visual)

TODOs

Other treatments

- try to replicate other treatments from Huang et al. (2022)
- try to replicate Karmegam, Ramaprasad, and Gopal (2022)

Approaching real market

- either partner with the powerful
- or, make an interactive experiment that allows for interaction between users

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