

The impact of current temperature and survey method on heat risk perception and climate change belief

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BACKGROUND

Global temperature is rising and heat is becoming an ever-increasing problem. Besides actions to limit the rise in temperature, precautionary and adaptive measures have to be taken. Risk perception is an important prerequisite for the willingness to change behaviour. Different approaches have been used to study people's risk perception regarding heat and climate change, but little is known about the extent to which the use of different methods or other environmental variables influence the results. To shed some light on this question is the aim of this contribution.

METHOD

We examined differences between surveys on heat risk perception and climate change risk perception in three medium-sized German cities (Fig. 1), compared survey methods (Fig. 2) and investigated the influence of the temperature on the day of the survey (Fig. 3).

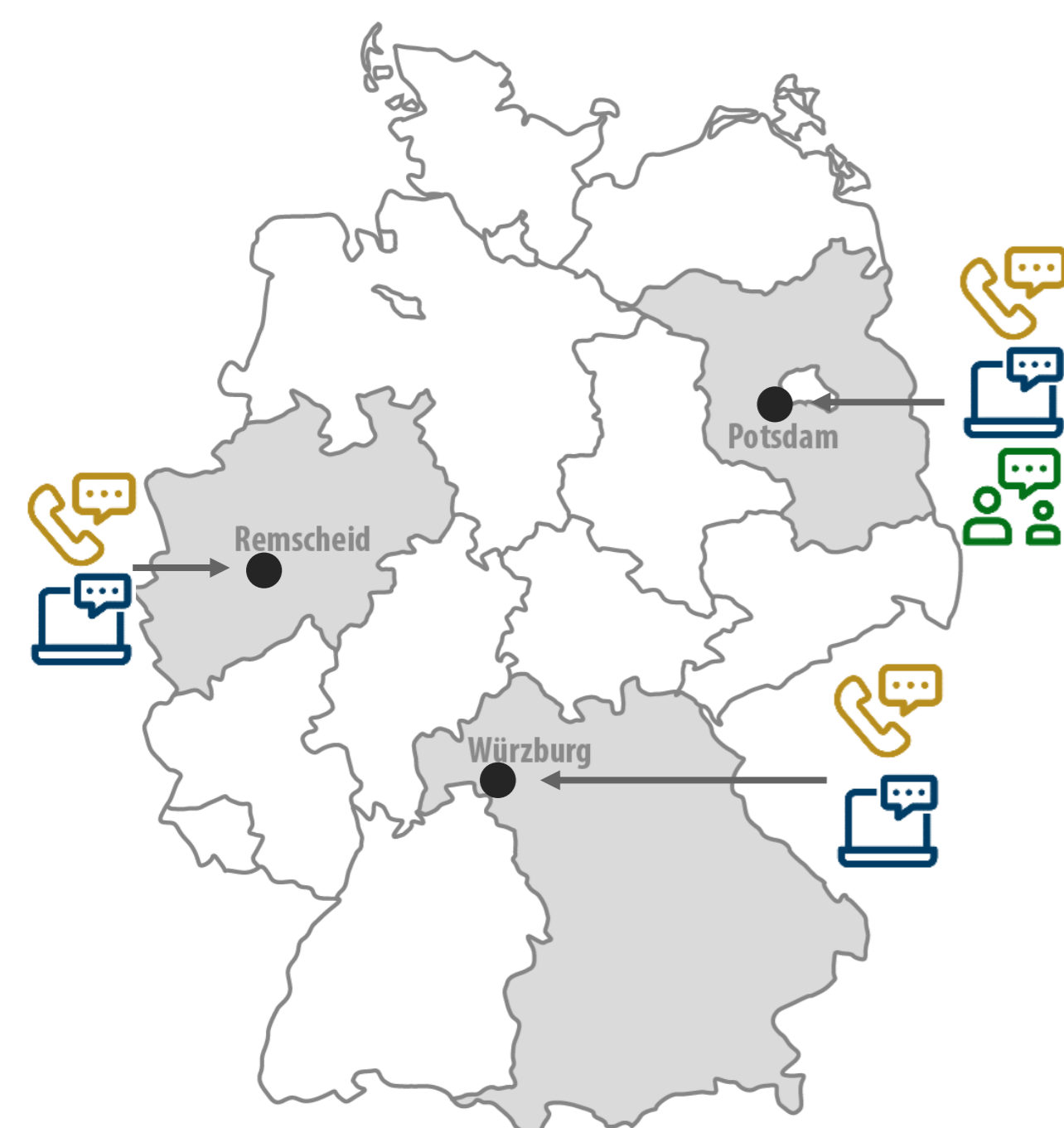


Figure 1. Map of Germany which shows the three case study cities (Potsdam, Remscheid, Würzburg) and the survey methods that have been carried out in each of the cities (Computer Assisted Telephone Interviewing [CATI], Computer Assisted Web Interviewing [CAWI] and face-to-face interviewing in parks [F2F]).

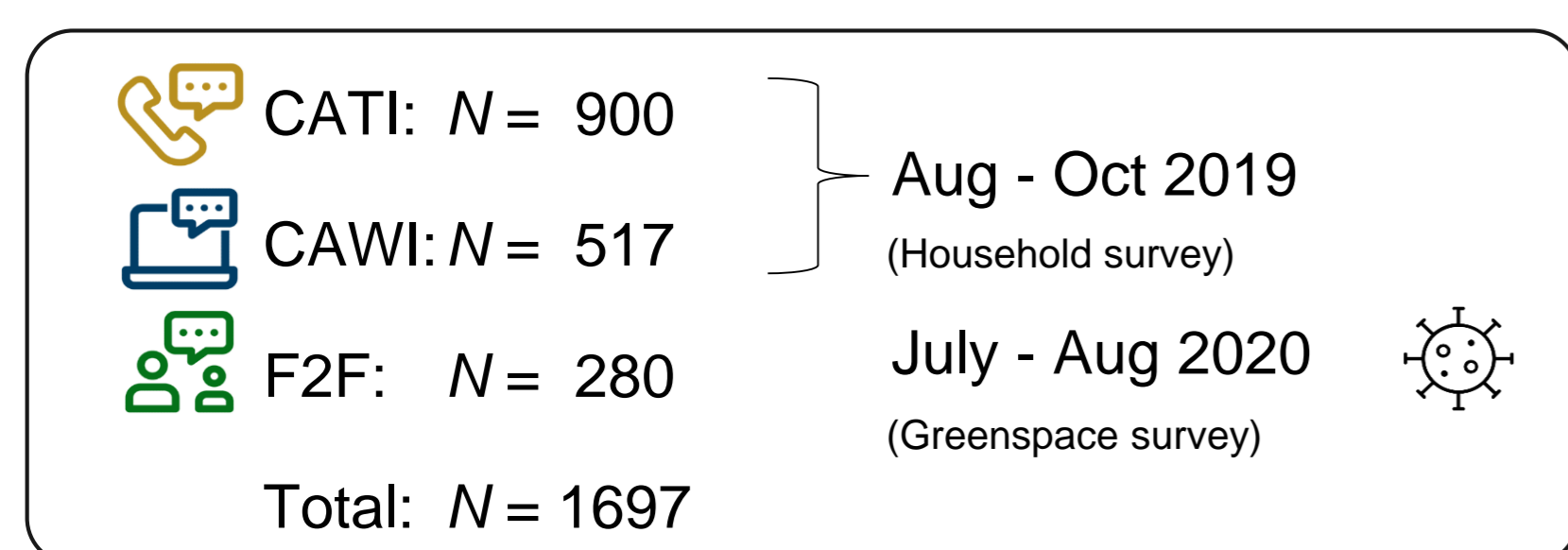


Figure 2. Overview of the number of participants and survey periods.

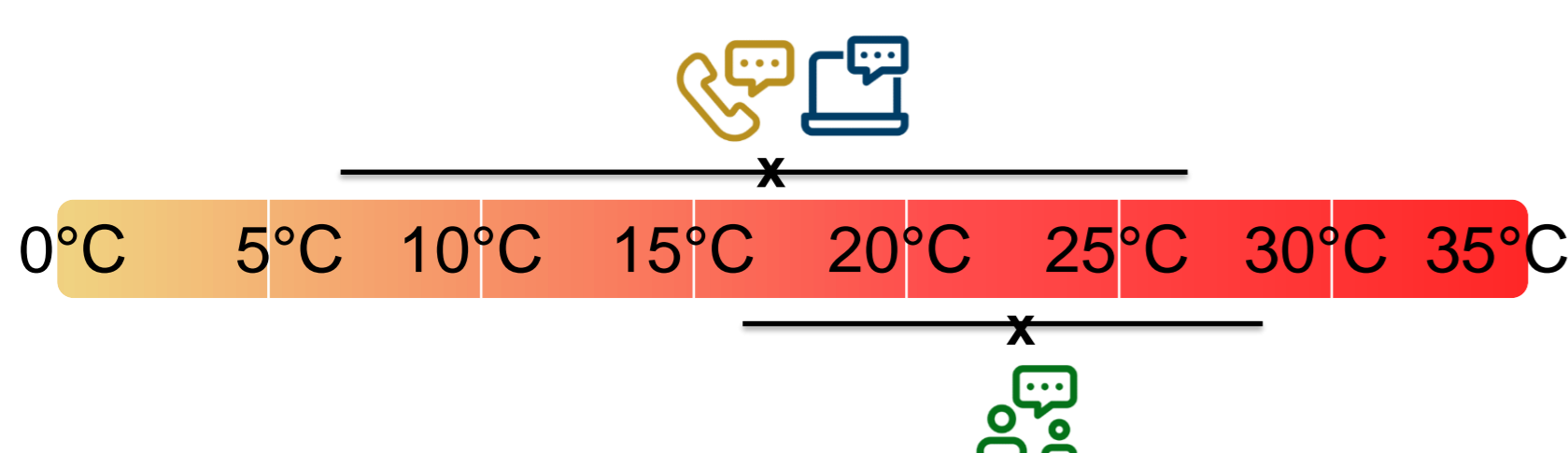


Figure 3. Overview of the temperature range and average temperature (data from German National Meteorological Service DWD) over the course of the household survey (top) and the green space survey (bottom).

RESULTS

All participants showed a medium heat risk perception (Fig. 4) and a high climate change risk perception (Fig. 5). Out of the factors of interest, the strongest differences were seen between different survey methods.

Effect of the place of residence (CATI sample only, N = 900)

- Heat risk perception is higher in Würzburg than in Remscheid.
- Climate change risk perception reveals no significant differences.

Influence of the survey method (Potsdam sample only, N = 744)

- Heat risk perception is higher in CAWI sample than in CATI and F2F samples.
- Climate change risk perception is higher in CAWI and F2F samples than in CATI sample.

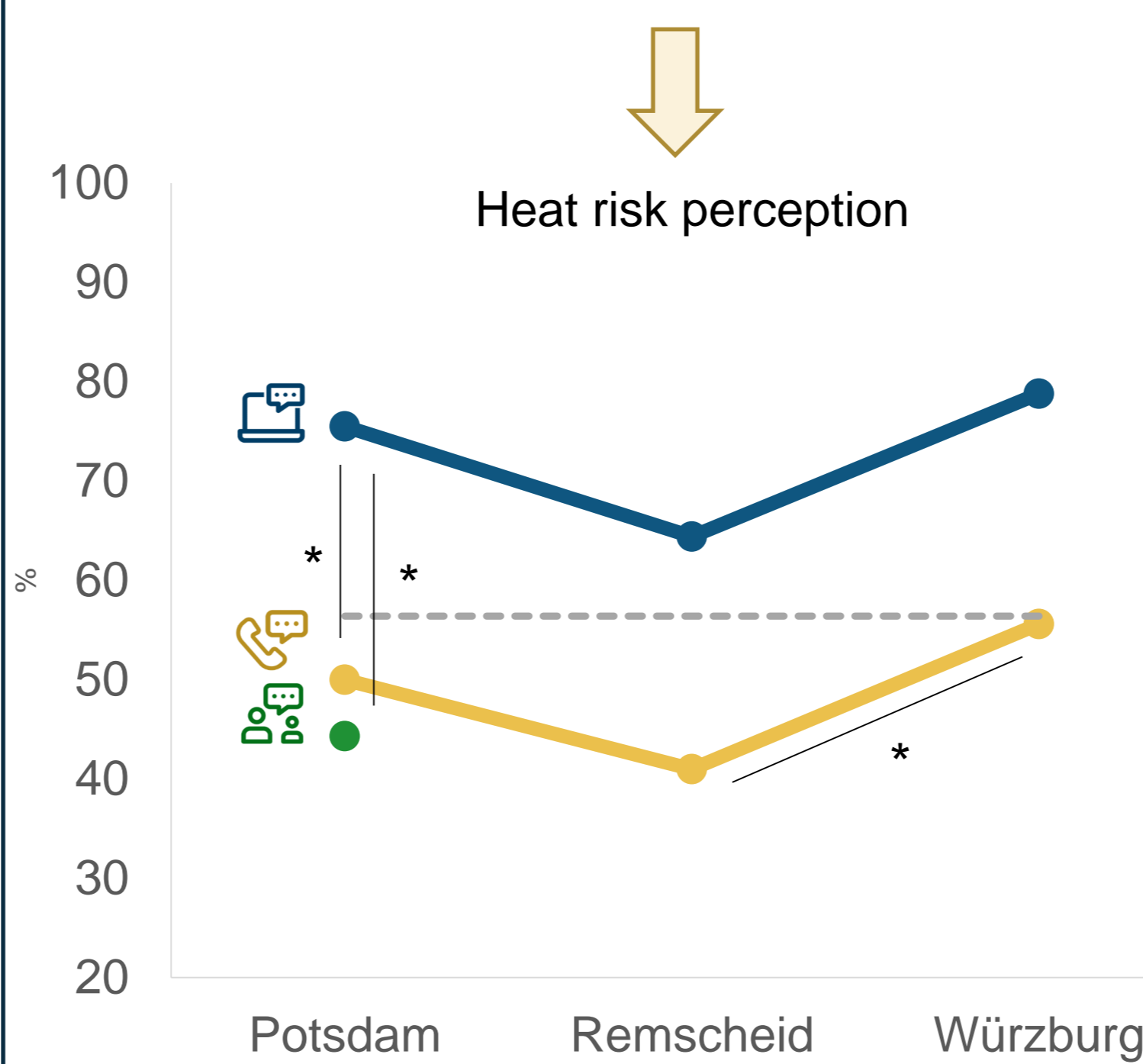


Figure 4. Heat risk perception, measured by asking participants to choose three events out of a list of hazards that they think pose the greatest health threat to the population in their hometown. The percentage of people who selected heat waves is shown. * mark significant results of binominal logistic regressions.

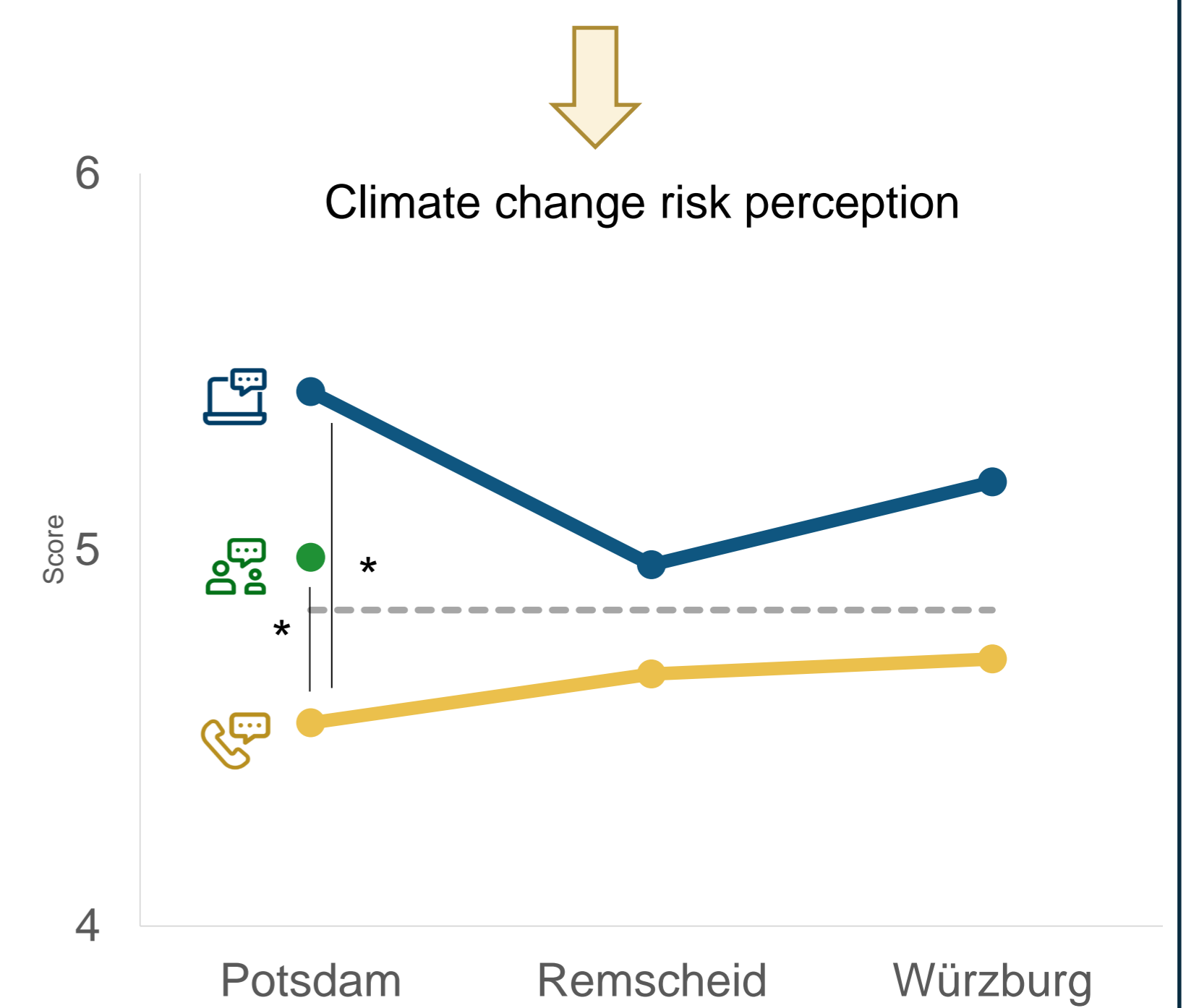


Figure 5. Climate change risk perception, measured with four items on a 6-point scale (1 do not agree at all – 6 fully agree). * mark significant results of ANCOVAs.

Influence of the temperature (Potsdam sample only, N = 744)

- Heat risk perception reveals no significant differences.
- Climate change risk perception increases with increasing temperature (only for F2F; Fig. 6).

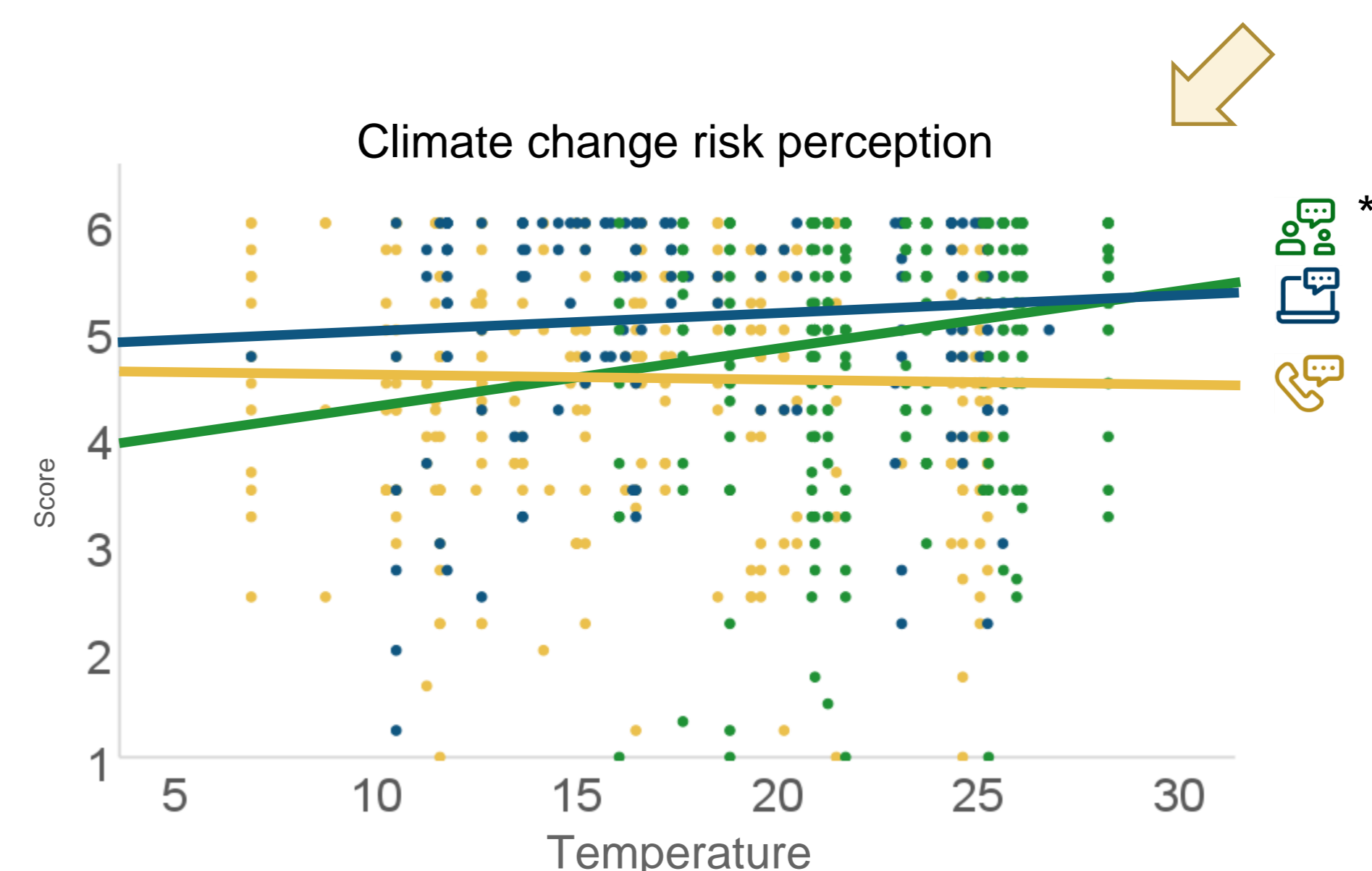


Figure 6. Scatter plot for climate change risk perception and temperature. * marks significant results of multiple regressions.

CONCLUSION

Survey method is an important factor when measuring risk perception. Recruitment of participants influences the sample and therefore the results. This should be heeded when planning or interpreting studies.

Method matters!

„Participants of online surveys show higher heat risk perception and climate change risk perception than participants of telephone and face-to-face surveys“