## **Preregistration**

When you preregister your research, you're simply specifying your research plan in advance of your study and submitting it to a registry.

Preregistration is one way how to enhance the transparency and credibility of the research process and mitigate certain cognitive biases (e.g., hindsight bias) or questionable research practices, especially so-called *p*-hacking or HARKing (Hypothesizing After Results are Known).

Researchers define the study's objective/hypothesis, study design, and planned analysis, before analyzing the data. Then they register this proposal through dedicated platforms such as OSF Preregistration, AsPredicted, or PreclinicalTrials.eu. This creates a permanent and fixed record of the planned study, which can be shared anonymously for example with reviewers. Preregistration makes it clear whether the research is aimed at generating a hypothesis (exploratory research) or testing a hypothesis (confirmatory research). It also distinguishes between analyses that were pre-planned and those that arose after a more detailed examination of the collected data.

The options for **making preregistrations openly available** vary depending on the platform chosen. For example, the <u>OSF.io registry</u> always publishes preregistrations, however, it allows for an embargo period of up to 4 years, during which the preregistration can be shared in an anonymized form (for instance with reviewers). On the other hand, <u>AsPredicted.org</u>, creates a preregistration by filling out a simple form that generates a .pdf file at the end, which can then be shared in an anonymized form or made public in a repository.

Preregistration may not be suitable for every type of research or field of study. It is particularly useful for quantitative research, where statistical analyses are performed. Its use has proven effective in fields such as psychology and preclinical studies. For more information on the practical use of preregistrations, you can refer to the article The Preregistration Revolution (Nosek et al. 2018: Section 4).

You can also combine preregistration with the publication of a registered report.

## What should I do if I need to make changes during the research process?

Deviations from the planned data collection or analysis are common, even in the best-planned research. Preregistering your study does not mean that you cannot make changes to your research, generate new hypotheses, or try different statistical methods. **The key is to be transparent** and indicate in your final research report which methods and hypotheses were pre-planned (e.g., by referencing the preregistration) and which resulted from post hoc analysis. Even if the analysis you originally proposed does not yield the desired results, you should still report it in the final paper.