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Aperitif: Bridging the Gap between Preregistration and Research Artifacts (#72587)

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1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

Does Aperitif significantly reduce time and efforts for preregistration, data analysis, and drafting a method section?

3) Describe the key dependent variable(s) specifying how they will be measured.

There will be 2 key dependent variables: 1) Time, 2) subjective_rating_of_efforts.

- 1. Time.
- 2. Subjective_rating_of_efforts. Subjective_rating_of_efforts is used to measure efforts.

4) How many and which conditions will participants be assigned to?

This experiment will be a within-subjects design. It comprises the following factors and levels:

1. Preregistration_interface (Aperitif, Original). Each participant will be assigned two artificial studies of similar difficulties. In the Aperitif interface, they will preregister the study, generate analysis code, and method section. In the original interface, participants will preregister the study, generate analysis code, and method section using AsPredicted and code editor of their choice.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

H0: The median value of Time in the Original group will be less than that in Aperitif. We will analyze this hypothesis with Wilcoxon signed-rank test. See the reproducible statistical code for analysis.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

We will exclude participants who spent less than five minutes in our experiment. We will include responses including participants who drop out because of the intensity of the work.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

A prospective power analysis was performed for sample size determination based on Cohen's conventional effect size d = 0.8. We achieved a statistical power of at least 0.8 under $\alpha = 0.05$ within 14 participants.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

We did a pilot study of 3 participants. We found that all participants spent a significant amount of time drafting a method section. They expressed a lot of mental hurdles to report a study that's not theirs. We thought of having them use Aperitif on their current project but it is hard to find participants that are working on an experimental study. Therefore, in the final study, we have users only preregister a study and code up analysis.