

**CONFIDENTIAL - FOR PEER-REVIEW ONLY**  
**COCOMI-main (#109068)**

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

It's complicated. We have already collected some data but explain in Question 8 why readers may consider this a valid pre-registration nevertheless.

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

Main question:

Does the effectiveness of debunks or prebunks (henceforth: interventions) depend on their source (no source vs. European Commission)? Does the effect of the source depend on the trust of recipients in the European Union?

Interaction hypothesis:

There is an interaction of the debunking- and prebunking-source (no source vs. European Commission source – henceforth EC source) and reported trust of respondents in the European Union.

Simple main effects hypotheses:

- Among respondents low in EU trust, EC source interventions are less effective than no-source interventions.
- Among respondents high in EU trust, EC source interventions are more effective than no-source interventions.

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

1. Belief: Agreement with the main claim of each of the misinformation pieces, measured on a 5-point Likert scale (strongly disagree – strongly agree).
2. Intentions to circulate the article: "To what extent do you want to..."
  - a. ...share the article online with people who are close to you" (5-point Likert, not at all - very much)
  - b. ...share the article online publicly" (5-point Likert, not at all - very much)
  - c. ...talk face-to-face about the article with people who are close to you" (5-point Likert, not at all - very much)
  - d. ...talk face-to-face about the article publicly" (5-point Likert, not at all - very much)
3. Reason for circulating the article (only elicited from participants who select something else than "not at all" at least once in response to the four sub-questions 2a-2d). "What is the reason for you to share and/or talk about the article?" (5-point Likert scale from "To express that I totally disagree with it" to "To express that I totally agree with it")
4. Content credibility: "Indicate how the article appears to you"
  - a. Inaccurate - Accurate (5-point semantic differential)
  - b. Unbelievable - Believable (5-point semantic differential)
  - c. Opinionated - Factual (5-point semantic differential)
  - d. Untrustworthy - Trustworthy (5-point semantic differential)
5. EU trust (key independent variable): "How much trust do you have in the European Union?" (1 - I do not trust it at all - 10 - I trust it completely)

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

Each participant will see either (between-subject) no intervention (control: "nobunk"), a debunk, or a prebunk. The source of the intervention will be either absent (no source) – or the EC (EC source). Each participant will see one misinformation article. The misinformation article will be randomly drawn from a set of three climate change and three Covid-19 articles.

Factorial between-subjects design:

- 2 (Intervention: debunk vs. prebunk)
- x 2 (Intervention source: no source vs. EC source)
- x 2 (Topic: climate change vs. covid-19)
- x 3 (Misinformation article: 1 vs. 2 vs. 3)
- + 1 condition without any intervention (nobunk)

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

For all three models described below, the independent variables are the (1) treatment factor variable, (2) metric EU trust variable, and (3) interaction between treatment and EU trust. The analyses will be aggregated over topics and misinformation articles.

- For dependent variable 1 (Belief):

oType: Ordered logit model with heteroskedasticity robust standard errors.

oDependent variable: raw, ordinal response variable.

oIndependent variables: intervention factor variable , metric EU trust variable , interaction between treatment and EU trust

•For dependent variables 2a and 2b (circulation intentions):

oType: Binary logit model with heteroskedasticity robust standard errors.

oDependent variables

-2a: dichotomized variable that is 1 if respondent expressed at least once that they wanted to circulate the article AND indicated to do so to express agreement or total agreement, 0 otherwise.

-2b: dichotomized variable that is 1 if respondent expressed at least once that they wanted to circulate the article AND indicated to do so to express disagreement or total disagreement, 0 otherwise.

•For dependent variable 3 (content credibility):

oType: Ordinary least squares model with heteroskedasticity robust standard errors.

oDependent variable: response variable consisting in sum of the four credibility responses.

Robustness checks :

•Analyses controlling for subject characteristics, i.e., socio-demographic, social, political, and cognitive covariates (i.e., age, gender, education, country, political ideology, trust in national government, general trust, EU attitudes, need for cognition, frequency of social media use, perceived frequency of misinformation encounter, importance of sharing true information, confidence to identify misinformation).

•Analyses controlling for response to comprehension check questions

•Analyses controlling for correct identification of intervention-source

•Analyses controlling for misinformation topic and misinformation article.

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

Observations from participants that did not finish the full survey will be removed from the dataset.

#### 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.

We aim for an overall sample size of 5,200 participants from four countries (i.e. Germany, Greece, Ireland, and Poland), 1,300 each coming from each of them. We conducted a power analysis in Stata based on effects observed in a pilot experiment with 875 observations (see more under point 8)). The analysis revealed that 1,300 is approximately the number of observations giving a chance of roughly 80% to spot the differences in the DVs observed in the pilot between 1) no debunk control and 2) some debunk (pooled), assuming a 5% threshold and a two-tailed z-test from a logistic regression. We assign participants randomly to each treatment group.

The expected number of observations in each of the 5 experimental groups (excluding the topic and misinformation article factor, over which analyses will be aggregated) is 1,040 participants (260 from each country).

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

We already gathered 875 observations from Germany, Greece, and Poland for a pilot experiment (only for COVID-19 misinformation, only debunking treatments, different sequencing and control group). We used the findings to improve the experiment and to conduct a power analysis for the main experiment.