

Analytical thinking and political orientation in the Corona crisis (#41663)

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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?

- (1) Does the relationship between political orientation and COVID-19 attitudes and behaviours vary across countries?
- (2) Does proneness to analytical thinking predict COVID-19 attitudes and behaviours? Does this relationship vary across political contexts?
- (3) Is the hypothesised effect of analytical thinking on COVID-19 attitudes and behaviours mediated by conspiracy beliefs? Does this relationship vary across political contexts?
- (4) Does the political orientation modify the relationship between proneness to analytical thinking and COVID-19 attitudes and behaviours? Does this relationship vary across political contexts?

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

Social distancing - self-reported measure on the following five items (responses on the scale from 0 - strongly disagree to 10 – strongly agree):

- Staying at home as much as practically possible
- Visiting friends, family, or colleagues outside my home
- Keeping the number of grocery store visits at an absolute minimum
- Keeping physical distance from all other people outside my home
- Avoiding handshaking with people outside my home

Physical hygiene - self-reported measure on the following five items (responses on the scale from 0 - strongly disagree to 10 – strongly agree):

- Washing my hands longer than usual
- Washing my hands (with soap) more thoroughly than usual
- Washing my hands immediately after returning home
- Disinfecting frequently used objects, such as mobile phones and keys
- Sneezing and coughing into my upper sleeve

COVID policy support - self-reported measure on the following five items (responses on the scale from 0 - strongly disagree to 10 – strongly agree):

- In favour of closing all schools and universities
- In favour of closing all bars and restaurants
- In favour of closing all parks
- In favour of forbidding all public gatherings where many people are gathered at one place (sports and culture)
- In favour of forbidding all non-necessary travel

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

All in the same condition: this is a correlational study – all the participants would be exposed to the same materials in the same way.

Our IVs are:

- Propensity towards analytical thinking (CRT & Open-mindedness):

o Cognitive Reflection Test performance (three items based on the original Cognitive Reflection Test by Frederick, 2005):

- A postcard and a pen cost 150 cents in total. The postcard costs 100 cents more than the pen. How many cents does the pen cost?
- If it takes 3 nurses 3 minutes to measure the blood pressure of 3 patients, how long would it take 300 nurses to measure the blood pressure of 300 patients?
- Sally is making some tea. Every hour, the concentration of the tea doubles. If it takes 8 hours for the tea to be ready, how many hours would it take for the tea to reach half of the final concentration?

o Open-minded cognitive style - self-reported measure (responses on the scale from 0 - strongly disagree to 10 – strongly agree), items from Alfano et al. (2017)

- I think that paying attention to people who disagree with me is a waste of time. (–)
- I feel no shame learning from someone who knows more than me.
- If I do not know much about some topic, I don't mind being taught about it, even if I know about other topics.
- Even when I have high status, I don't mind learning from others who have lower status.
- Only wimps admit that they've made mistakes. (–)
- I don't take people seriously if they're very different from me. (–)

- Political ideology (left-right political orientation on the scale 0-10)
- Conspiracy beliefs concerning COVID-19 as an mediator - self-reported measure on the following four items (responses on the scale from 0 - strongly disagree to 10 – strongly agree):

- The coronavirus (COVID-19) is a bioweapon engineered by scientists.
- The coronavirus (COVID-19) is a conspiracy to take away citizen's rights for good and establish an authoritarian government.
- The coronavirus (COVID-19) is a hoax invented by interest groups for financial gains.
- The coronavirus (COVID-19) was created as a cover up for the impending global economic crash.

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

The described analyses will be conducted only on complete data. After confirming at least partial strong invariance with respect to Rutkowski and Svetina's (2014) criteria using CFA with robust maximum likelihood estimator (Brosseau-Liard and Savalei, 2014), correlation matrices would be calculated to answer the first research question. Based on the correlation size, countries, where political orientation would be correlated with COVID-19 policy support significantly above .10, would be treated as the first group, those with no correlation would be treated as the second group and those with correlation significantly below -.10 as the third group. Countries with less than 200 participants after data cleaning would be excluded from the analyses. Due to the large sample size, the chi-squared statistic would not be used to determine model fit, while the significance threshold would be moved to $p = .001$ for the general analysis and $p = .01$ for regression slopes calculated within each group.

These groups would serve as a grouping factor (political context) in MGSEM that would be applied to provide answers to the remaining research questions. Invariance of regression slopes would be tested after achieving at least partial strong invariance.

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

Two questions included in the study as attention checks will be used to identify and exclude participants who did not put sufficient effort into responding. Additionally, the participants who finished the complete questionnaire very fast (under 9 minutes, or read more than 4.5 words per second) will be excluded from the analyses if these data will be available.

Also, multivariate outliers will be identified by a robust variant of Mahalanobis distance (Leys, Klein, Dominicy, & Ley, 2018).

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 will use existing cross-cultural data set from "COVID 19 social psychology and moral psychology study". Within the scope of the project, the plan was to collect online adults samples with a minimum of 500 participants per country (aiming for representativeness regarding age and gender) encompassing around 60 countries, with some collecting even more than the planned number of participants.

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

If the MGSEM would highlight the variation of slopes, additional tests will be conducted to determine which of the slopes varies across political contexts. The slope calculated on the overall sample would serve as the restricting value. Thus, removing restriction would imply a deviation from the overall estimate.

Data collection:

Data have been collected (big international cross-cultural data set "COVID 19 social psychology and moral psychology study") for this study already, but the data analysts have not seen the complete data or run the analyses.