**Title**

**Description**

**Hypotheses**

List specific, concise, and testable hypotheses. Please state if the hypotheses are directional or non-directional. If directional, state the direction. A predicted effect is also appropriate here. If a specific interaction or moderation is important to your research, you can list that as a separate hypothesis.

**Study design\***

Describe your study design. The key is to be as detailed as is necessary given the specific parameters of the design. There may be some overlap between this question and the following questions. That is OK, as long as sufficient detail is given in one of the areas to provide all of the requested information. Examples include two-group, factorial, randomized block, and repeated measures. Is it a between (unpaired), within-subject (paired), or mixed design? Describe any counterbalancing required.

**Randomization**

If you are doing a randomized study, state how you will randomize, and at what level. Typical randomization techniques include: simple, block, stratified, and adaptive covariate randomization. If randomization is required for the study, the method should be specified here, not simply the source of random numbers.

**Explanation of existing data**

If you indicate that you will be using some data that already exist in this study, please describe the steps you have taken to assure that you are unaware of any patterns or summary statistics in the data. This may include an explanation of how access to the data has been limited, who has observed the data, or how you have avoided observing any analysis of the specific data you will use in your study.

**Data collection procedures\***

Please describe the process by which you will collect your data and your inclusion and exclusion criteria. If you are using human subjects, this should include the population from which you obtain subjects, recruitment efforts, payment for participation, how subjects will be selected for eligibility from the initial pool, and your study timeline. For studies that don't include human subjects, include information about how you will collect samples, duration of data gathering efforts, source or location of samples, or batch numbers you will use.

**Sample size\***

Describe the sample size of your study. How many units will be analyzed in the study? This could be the number of people, birds, classrooms, plots, or countries included. If the units are not individuals, then describe the size requirements for each unit. If you are using a clustered or multilevel design, describe how many units are you collecting at each level of the analysis. This might be the number of samples or a range, minimum, or maximum.

**Sample size rationale**

This could include a power analysis or an arbitrary constraint such as time, money, or personnel.

**Manipulated variables**

Precisely define all variables you plan to manipulate and the levels or treatment arms of each variable. This is not applicable to any observational study.

**Measured variables\***

Precisely define each variable that you will measure. This will include outcome measures, as well as any measured predictors or covariates.

**Indices**

If applicable, please define how measures will be combined into an index (or even a mean) and what measures will be used. Include either a formula or a precise description of the method. If you are using a more complicated statistical method to combine measures (e.g. a factor analysis), please note that here but describe the exact method in the analysis plan section.

**Statistical models\***

What statistical model will you use to test each hypothesis? Please include the type of model (e.g. ANOVA, RMANOVA, MANOVA, multiple regression, SEM, etc) and the specification of the model. This includes each variable that will be included, all interactions, subgroup analyses, pairwise or complex contrasts, and any follow-up tests from omnibus tests. If you plan on using any positive controls, negative controls, or manipulation checks you may mention that here. Provide enough detail so that another person could run the same analysis with the information provided. Remember that in your final article any test not included here must be noted as exploratory and that you must report the results of all tests.

**Transformations**

If you plan on transforming, centering, recoding the data, or requiring a coding scheme for categorical variables, please describe that process.

**Inference criteria**

What criteria will you use to make inferences? Please describe the information you’ll use (e.g. specify the p-values, Bayes factors, specific model fit indices), as well as cut-off criterion, where appropriate. Will you be using one or two tailed tests for each of your analyses? If you are comparing multiple conditions or testing multiple hypotheses, will you account for this?

**Data exclusion**

How will you determine which data points or samples if any to exclude from your analyses? How will outliers be handled? Will you use any awareness check?

**Missing data**

How will you deal with incomplete or missing data?

**Exploratory analysis**

If you plan to explore your data to look for unspecified differences or relationships, you may include those plans here. If you list an exploratory test here, you are not obligated to report its results. But if you do report it you are obligated to describe it as an exploratory result.

**Other**

If there is any additional information that you feel needs to be included in your preregistration, please enter it here. Literature cited, disclosures of any related work such as replications or work that uses the same data, or other helpful context would be appropriate here.