Supplementary material 1. Manuscript appendices.

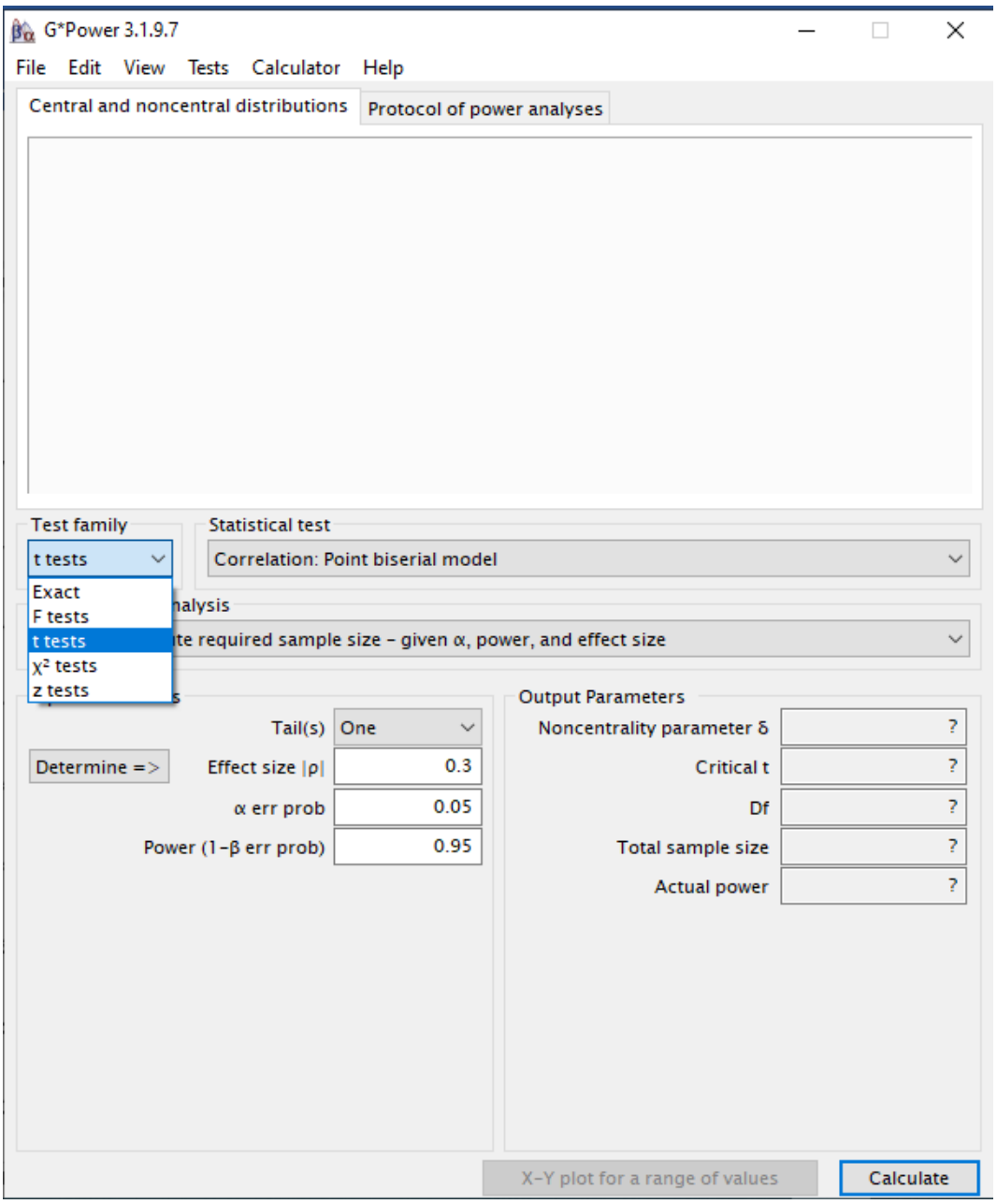
Appendix 1

Example of sample size estimation with G*Power

We need to identify the sample size for a study that aims to find out if there are gender differences in levels of depression.

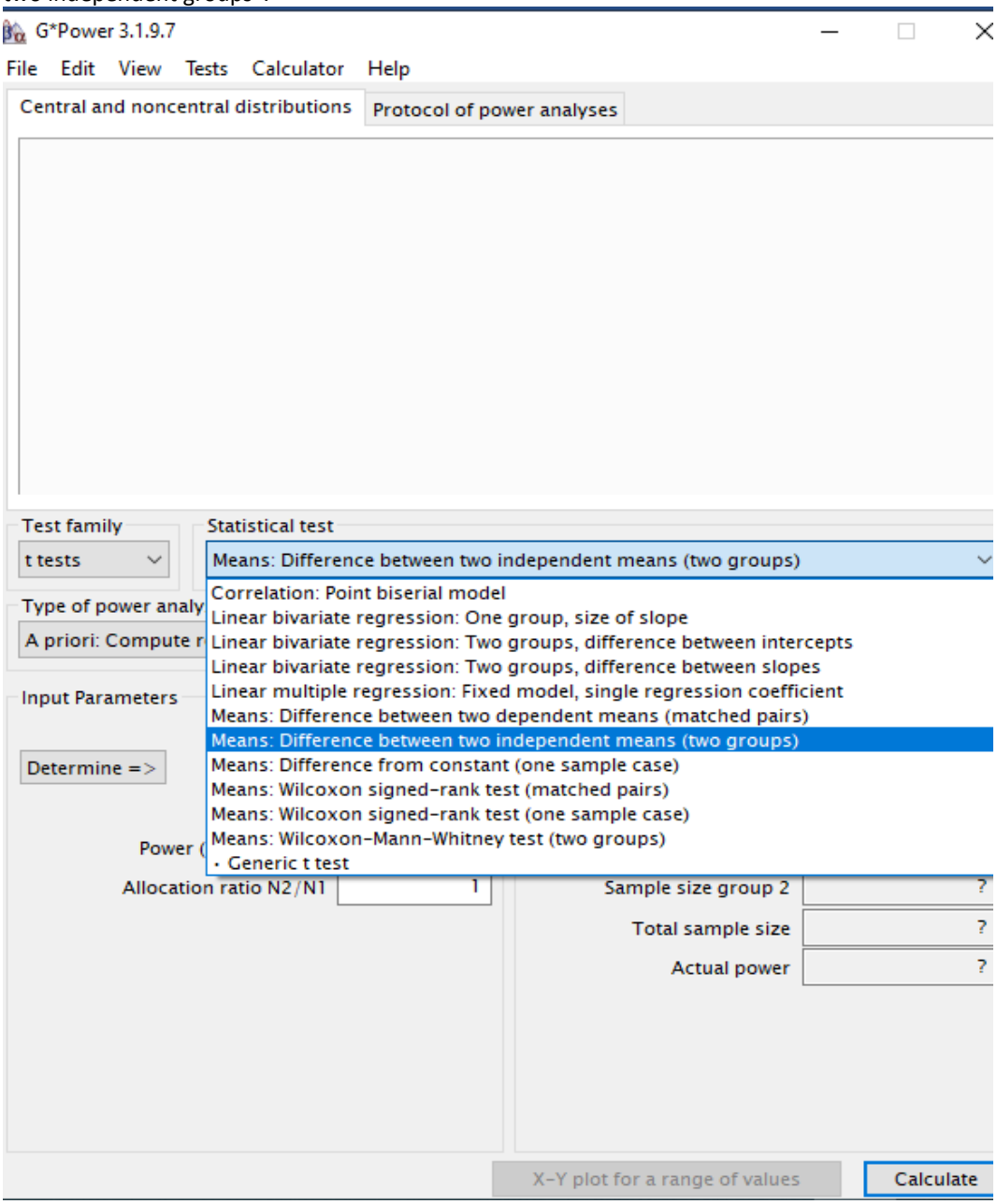
Step 1

Select the test family: In this option we select the family of the statistical test to be used, in this example, since this is a study that seeks to identify sex differences, we choose “T test”.



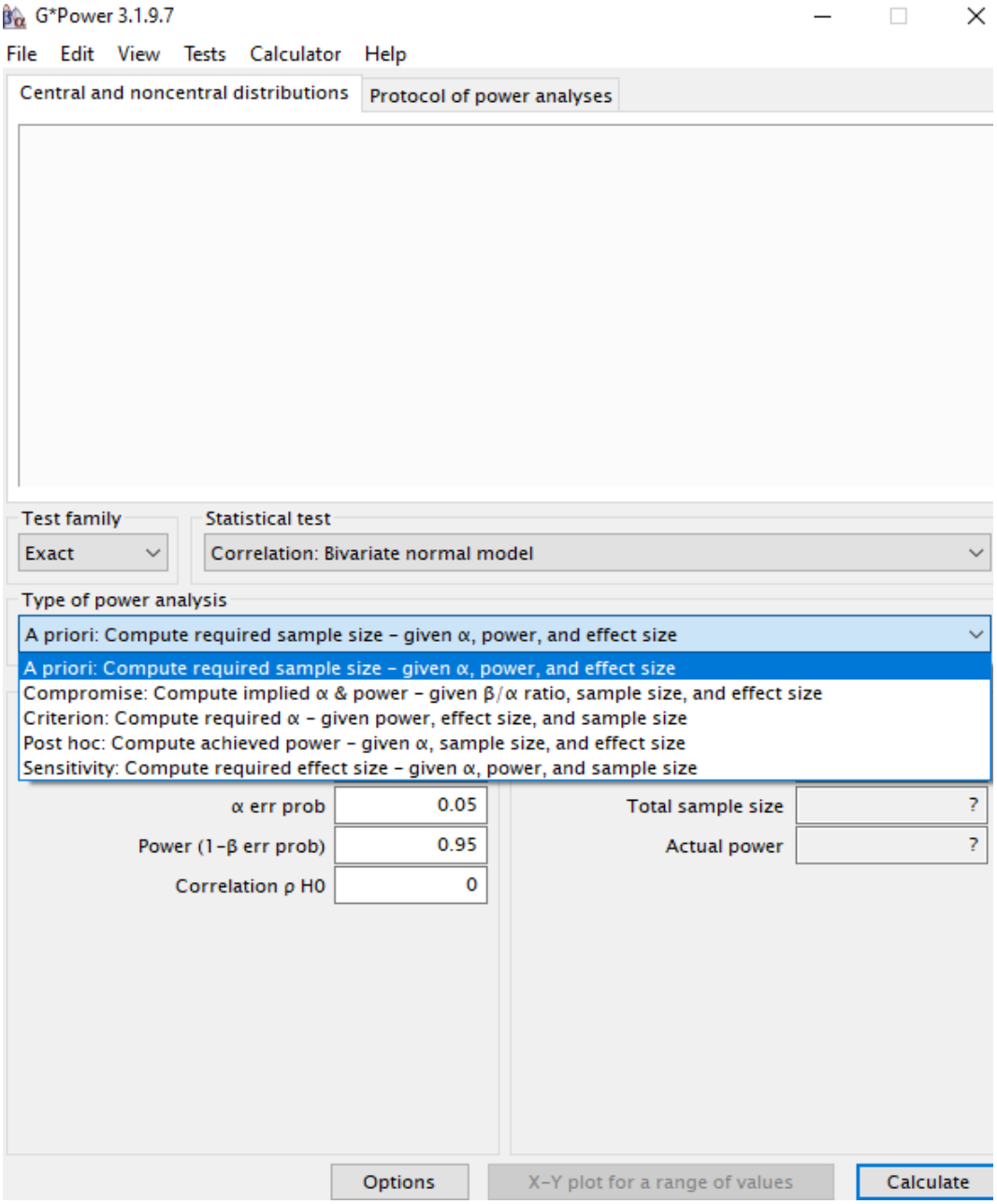
Step 2

Select the statistical test: Now we choose the statistical test, in this case it corresponds to "mean differences between two independent groups".



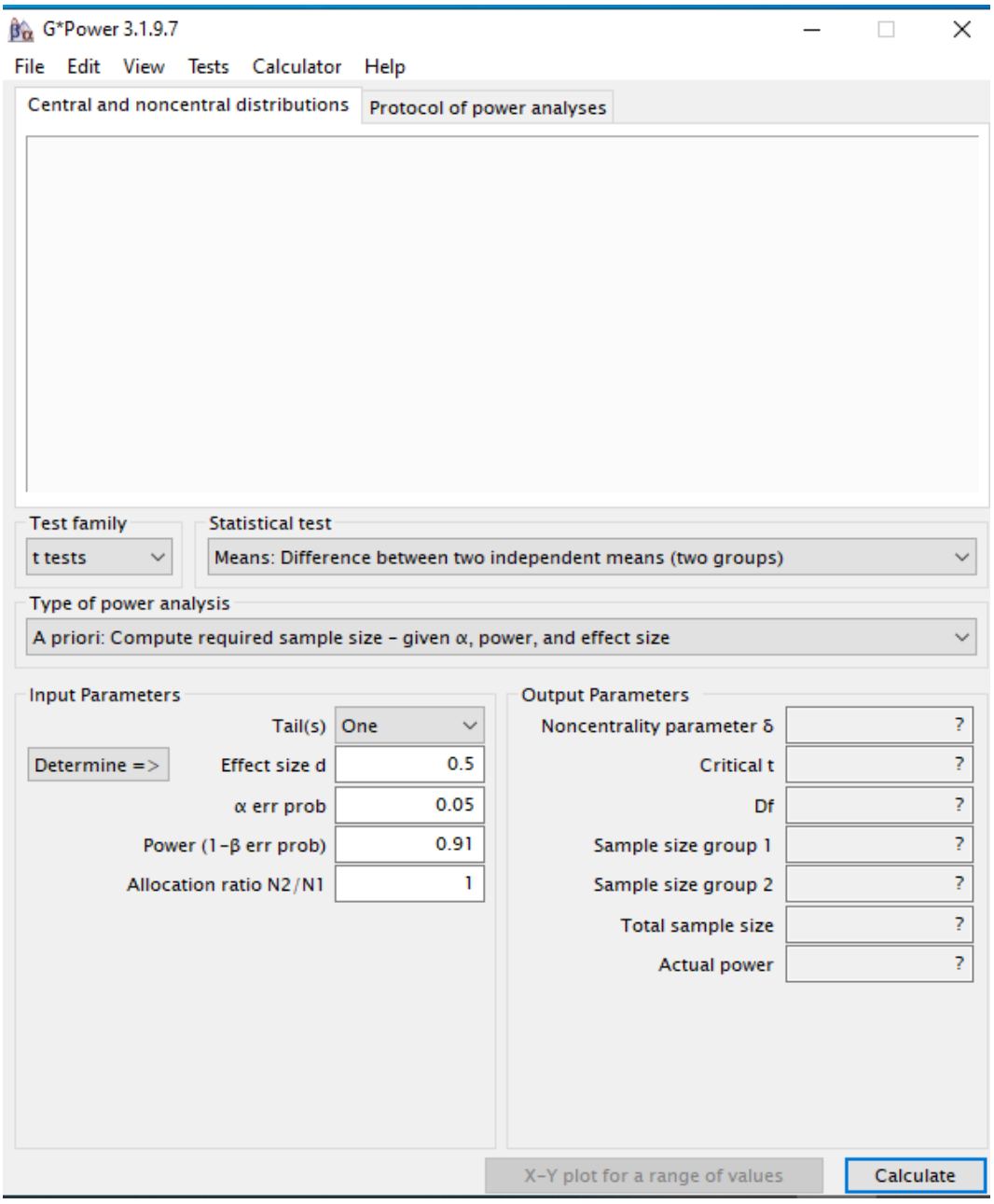
Step 3

Select the type of power analysis: Select the type of power analysis: In this case we want to determine the sample size as part of the planning of an investigation, therefore, we select “A priori”.



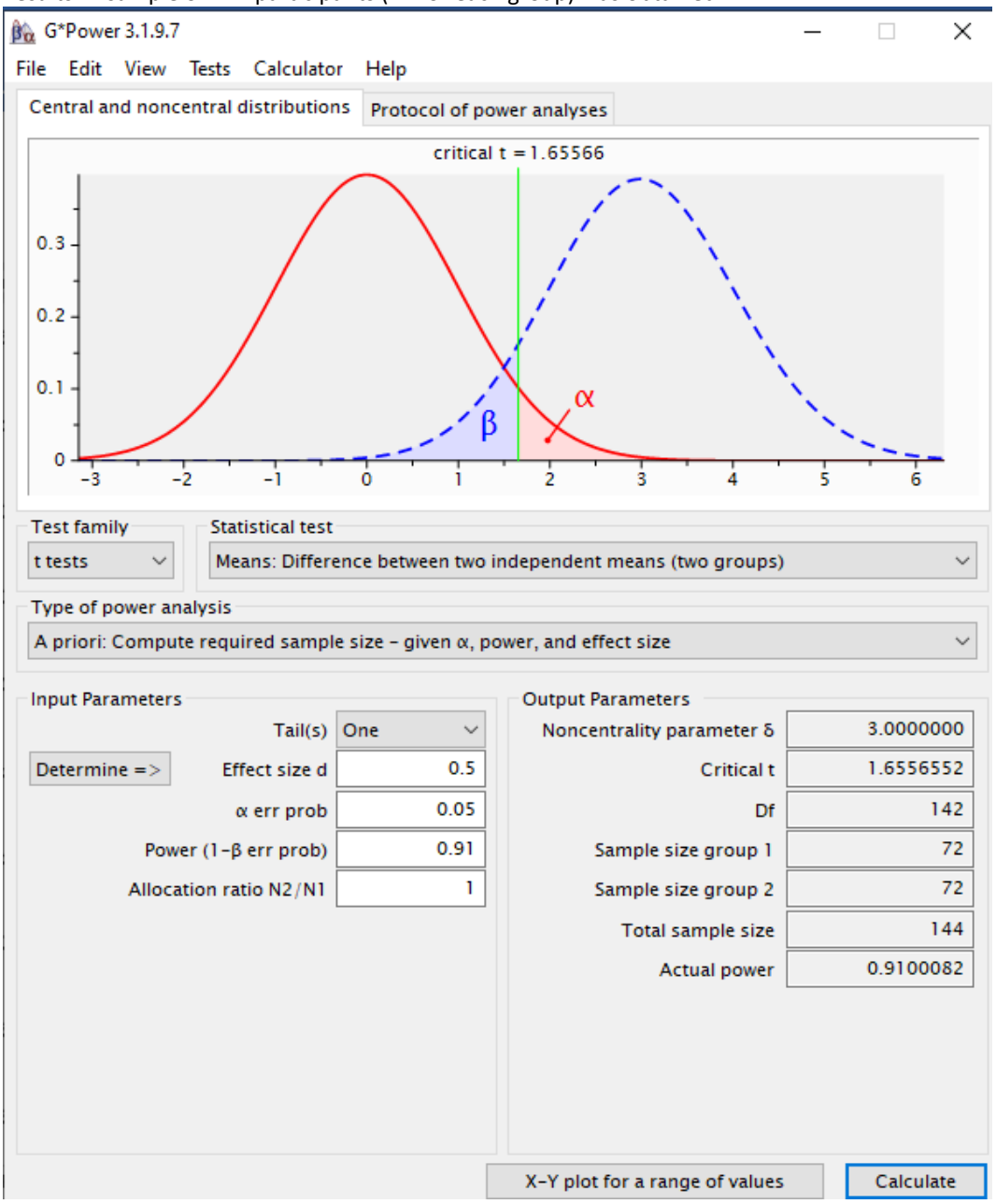
Step 4

We select the parameters: We enter the effect size identified in previous research, in this example, a mean effect size was found (Cohen's d = 0.50). Alpha corresponds to 0.05, and the power can be considered between 0.80 and 0.95. As this is comparative research, both groups are expected to have the same number of participants, therefore, the allocation ratio is 1.



Step 5

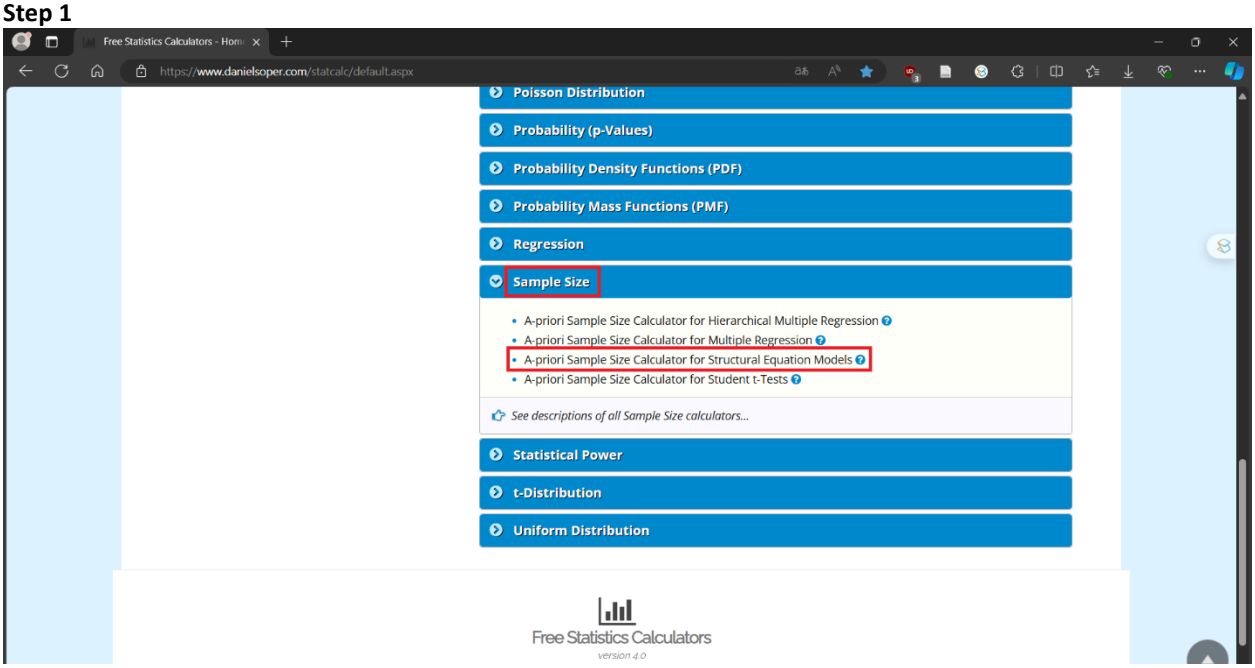
Results: A sample of 144 participants (72 for each group) was obtained.



Appendix 2

Example of sample size estimation to validate an instrument that measures "anxiety"

Step 1



Go to https://www.danielsoper.com/statcalc/default.aspx and locate the *Sample Size* option, click and go to *A priori Sample Size Calculator for Structural Equation Models.*

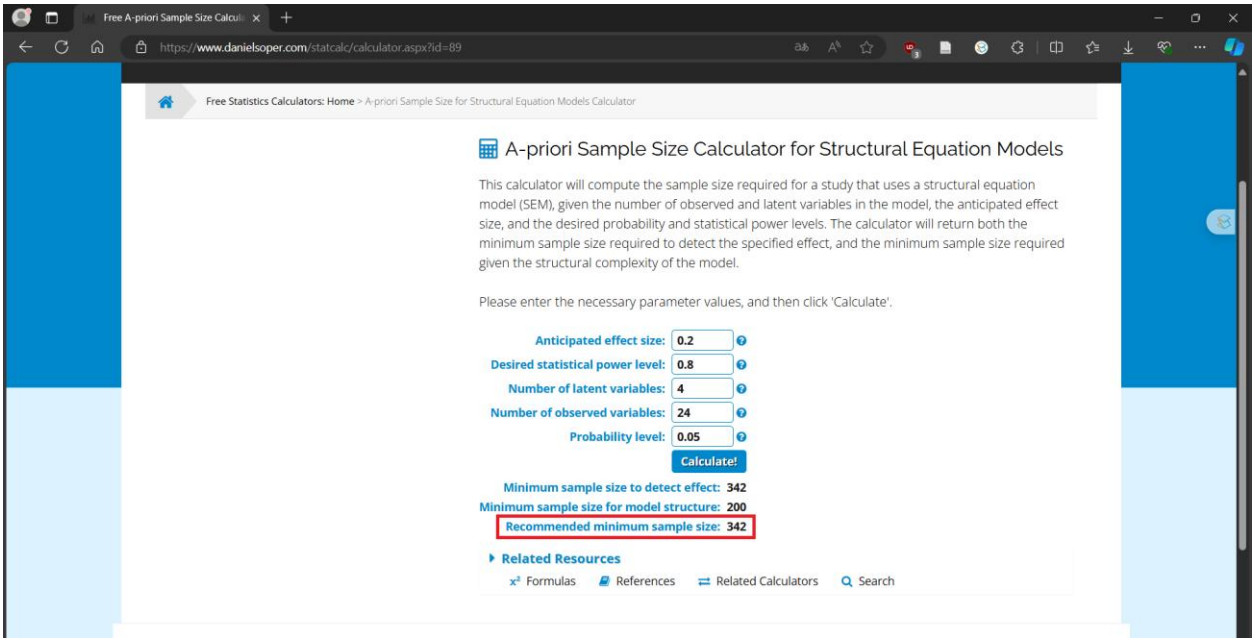
Step 2

When the selected interface opens, we will be asked for the following values: *Anticipated effect size,* which is the effect size expected to be obtained with the study; in this case, we will enter 0.2.

For *Desired statistical power level,* we will enter the statistical power that we would like to find, which should be between 0.8 and 0.95; in this case, we will enter 0.8.

As for *Number of latent variables* and *Number of observed variables,* they refer to the number of dimensions and items, respectively, of the structure of the instrument. For example, we have placed 4 latent variables (dimensions) and 24 observed variables (items).

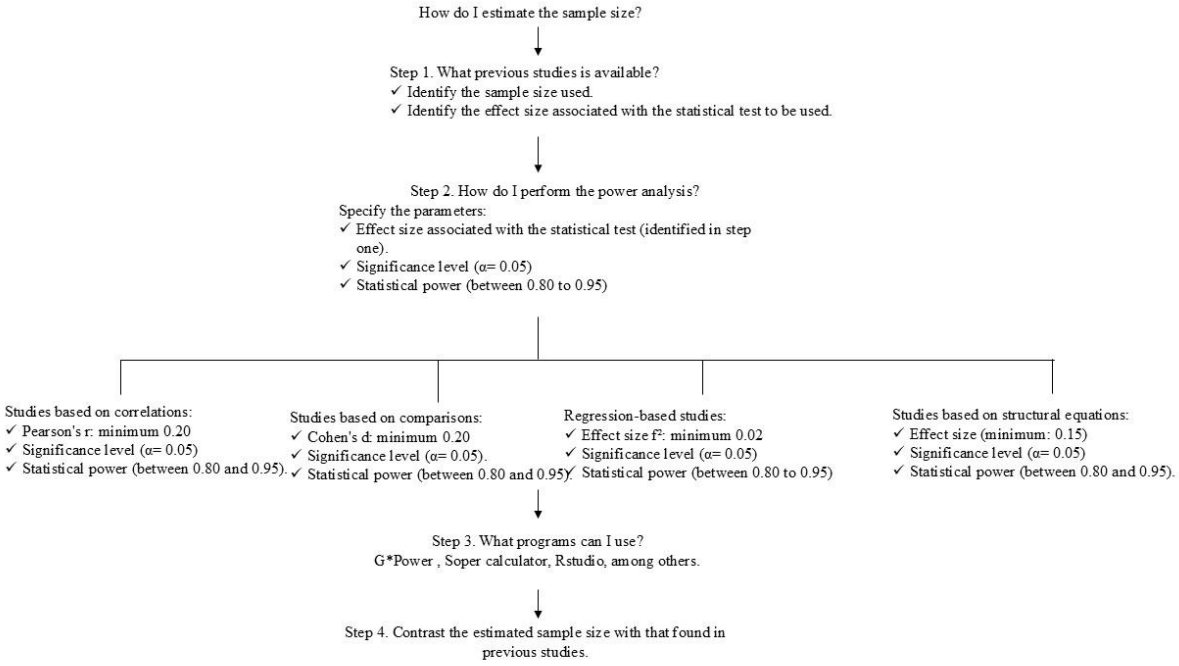
Finally, in *Probability level,* we left it at 0.05.



Clicking on *Calculate!* will give us three results, of which it is recommended to visualize the one located in *Recommended minimum sample size;* in this case, we obtained that the minimum sample size for the structure of the proposed instrument is 342 participants.

Appendix 3

Flowchart to decide sample size estimates



Appendix 4

Sample size recommendations according to type of study

Study type	Recommended sample size (indicative)	Key considerations for estimation
Descriptive studies (proportions or means)	100–400 participants (minimum 30 per subgroup)	- Confidence level (typically 95%)- Acceptable margin of error (5%, 3%) - Expected variability (p = 0.5 is conservative) - Population size (if finite)
Comparative studies (2 groups)	64–128 participants (32–64 per group)	- Expected group difference (effect size) - Significance level (α = 0.05) - Statistical power (≥ 0.80) - Type of test (t-test, Mann–Whitney U, etc.)
Correlational studies	≥85 participants (to detect r = 0.3)	- Expected correlation magnitude - Significance level (α) - Desired power (1 - β)
Regression studies (linear or logistic)	10–15 participants per predictor	- Number of independent variables - Expected effect size (R^2) - Potential multicollinearity - Significance level and power
Experimental studies / clinical trials	≥30–50 per group (ideally >100 per arm)	- Expected effect size - Significance level and power - Anticipated participant los - Design type (parallel, crossover, factorial, etc.)
Instrument development / validation studies	5–10 participants per item (minimum 100–200)	- Number of items- Type of analysis (EFA, CFA)- Estimation method (ML, WLSMV, etc.) - Model complexity (in CFA)
Repeated measures / longitudinal studies	≥30–50 per group with 3+ measurements	- Number of measurements- Within-subject correlation - Expected interaction effect size- Attrition rate
Modeling studies (SEM, multilevel models)	≥200 (absolute minimum), ideally >300	- Model complexity - Number of estimated parameters - Data type (continuous, ordinal) - Distribution and normality assumptions

Note. Own elaboration