Replicating a Experimental Study (THE I)

Research Design and Methods in Quantitative Research - Fall 2024

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Instructions

Please read and follow the guidelines below carefully. Then, complete the exercises and report the results in a Quarto document. Compile the Quarto document in PDF and submit both the compiled PDF and `.qmd` files within the deadline.

Further instructions about the submission are below.

Preparation step 1: Install R and RStudio

To complete this exercise, you will need **R** and **RStudio**. Download and install them from:

- R
- RStudio

A tutorial on how to start using R and R Studio is here. Please contact the tutor and collaborate with your classmates in case of doubts or if you need any help.

Preparation step 2: Prepare a Quarto Document

Open RStudio, create a new Quarto document (`.qmd`), and set the output format to PDF. Make sure your Quarto installation is up-to-date:

```
# Install Quarto if needed
## Run this line in a separate script or the Quarto document will not compile
# install.packages("quarto")
```

You can find help on how to set up a Quarto document here.

Preparation step 3: Read the Assigned Paper and Download the Replication Files

You will need to download and read the paper *Instrumentally Inclusive: The Political Psychology of Homonationalism*.

When you have read the paper, look in their replication files for the necessary files to replicate study 1. In particular, locate and download:

- Data file: `study1_data.csv`
- R Script: `study1.R`

The replication files provide no codebook for the data, so you will need to use the R script to navigate it and locate the relevant variables.

Exercises

Exercise 1: Summary of the Paper and Main Findings

Provide a brief summary of the paper you are replicating. Describe the main findings, especially those related to Study 1.

Exercise 2: Data Preparation and Exploration

Use the data file `study1_data.csv` to begin the replication process. Identify and describe the experimental variables (i.e., treatment and immigration attitudes) and provide visualizations of their distribution.

Then, select up to four covariates (e.g., gender, age, etc.) and plot their distribution too.

If necessary, clean or transform variables. Document any changes.

Exercise 3: Covariate Balance

Check for balance across covariates and report the results in a table and a plot.

Explain your findings. Why would you expect randomization to lead to balance across covariates?

Exercise 4 (additional): Estimate Treatment Effect

This exercise is not mandatory, but it serves only to opt for the maximum grade (6).

Estimate the average effect of the treatment on the outcome variable `support` conditional on the pre-treatment immigration attitudes `imm_1`. For this, use an interaction term in an OLS regression model. Compare your results to those in the original paper.

Then, repeat this analysis with three iteratively smaller random samples of the treatment (n = 200, n = 100, n = 10) and control groups (n = 200, n = 100, n = 10); total N = 400, 200, and 20, respectively. Explain your findings.

Finally, discuss how sample size impacts the results and what this implies about the role of randomization for selection bias.

Submission guidelines

Please submit both the PDF file and the `.qmd` file. Both files should report all the code used for analysis and annotations explaining each step.

The name of the files must follow the structure *take-home_exercise_i_YOURSURNAME(S).pdf* and *take-home_exercise_i_YOURSURNAME(S).qmd*, respectively. They should be upload to the folder *Students responses/Take-home exercises/Take-home exercise I* in OLAT.

Deadline: **14.11.24**

References

Turnbull-Dugarte, S. J., & Ortega, A. L. (2024). Instrumentally inclusive: the political psychology of homonationalism. *American Political Science Review, 118(3)*, 1360-1378.