

Author: Ashesh Rambachan <asheshr@g.harvard.edu>

Description: This readme file provides a summary of the codes and scripts to replicate the analyses in "Panel Experiments and Dynamic Causal Effects: A Finite Population Perspective."

Note: This replication file is structured to make use of the R package ``here.'' Please associate an R project with the directory to use properly. Further details on the R package ``here'' can be found [here](#).

Overview:

AndreoniSamuelson-ReplicationData: This directory contains the replication data for Andreoni & Samuelson (2006).

Code: This directory contains the R scripts that provide the key functions that implement the methods in Bojinov et al. and the R scripts to replicate the empirical section. This directory contains the following files:

- andreoni-samuleson_clean-data_cooperation.R: This script cleans and prepares the replication data for Andreoni & Samuelson (2006) if the outcome of interest is cooperation. This is used in the main text of the paper.
- andreoni-samuleson_clean-data_total-payoffs.R: This script cleans and prepares the replication data for Andreoni & Samuelson (2006) if the outcome of interest is total payoffs. This is used in the supplementary results of the paper.
- andreoni-samuleson_analysis_cooperation.R: This script conducts the analysis of the cooperation outcome, reproducing the figures in the main text.
- andreoni-samuleson_analysis_total-payoffs.R: This script conducts the analysis of the total payoffs outcome, reproducing the figures in the supplementary results.
- panel_analysis_functions.R: This script contains the key functions implementing the methods developed in Bojinov et al.
- panel_simulation_functions.R: This script contains helper functions that are used in the simulation study.

Figures: This directory is used to store the Figures associated with the empirical section.

Temp: This directory is used to store temporary files.

Sim_Study_Analysis: This directory contains the files needed to replicate the simulation study.

- The simulation study file is structured so that all simulations can be conducted on a high performance computing cluster, with the directory

Sim_Study_Analysis as the root. The commands to run the files are given for a cluster configured with an LSF based scheduler.

- Example: To reproduce the large T, size control simulations:
 1. Enter the subfile src/param_expand_largeT.R. Select the desired parameter configuration by uncommenting code.
 2. Enter the subfile src/combine_largeT.R. Name the final results file.
 3. Return to Sim_Study_Analysis. Run the lsf, sim_run_largeT.sh. This script will run the simulations, outputting the simulation results to subfile results/[USER CHOSEN NAME].rds.
 4. To analyze the results, enter the subfile src/analyze_largeT_histograms.R. Modify the name to reference your chosen results file and hit run. The figures will be returned to the directory Sim_Figures and the tables (if any) will be returned to the directory Sim_Tables.
- To reproduce the other simulations (e.g., large N, size control or large NT, power), follow those steps but navigate to the appropriate subfiles in src/.