README

Regression Discontinuity Design:
A Test for Manipulation of the Running Variable

Research Module in Econometrics and Statistics
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1 Overview

In this README file we briefly state which files are handed-in and how the R scripts relate to each other. For a richer documentation see the functions' docstrings within each module where we describe arguments and objects returned, and comment the code to provide guidance at each step of implementation. Also, for intuition and description, the term paper serves as a reference, too. Please note, that we cannot provide the dataset due to file size constraints but it is readily available at https://doi.org/10.3886/E114759V1.

In case of questions and comments please contact us. This project will shortly be publicly available on GitHub, accessible at https://github.com/maxschae/research_module.

1.1 Overview of files handed-in

1. Term paper (.pdf)
2. README (.pdf)
3. R scripts
   (a) *consistency_distr_plot.R*
   (b) *density_estimate_plot.R*
   (c) *manipulation_test.R*
   (d) *power_function.R*
   (e) *QQplots_sample_sizes.R*
   (f) *QQplots_undersmoothing.R*
   (g) *simulate_test_size.R*
   (h) *simulation_functions.R*
   (i) *poverty_index_score_distribution.R*
   (j) *poverty_index_score_gap_estimate.R*

1.2 Script dependencies

Note that for error-free execution of code the underlying project structure needs to be followed. That is, the respective folder structure needs to be mirrored on the local machine (this is taken care of already in case you receive the project by e-mail from us). The dataset needs to be placed in the folder ./data/ on the same directory level as the ./code/ folder.

1. *consistency_distr_plot.R* depends on *simulation_functions.R* and *manipulation_test.R* and returns Figure D.5.
2. *density_estimate_plot.R* depends on *simulation_functions.R* and *manipulation_test.R* and returns Figure D.1.

3. *manipulation_test.R* implements McCrary's manipulation test for continuous and discrete running variables.

4. *power_function.R* depends on *simulation_functions.R* and returns Figures 4.1 and D.2.

5. *QQplots_sample_sizes.R* depends on *simulation_functions.R* and *manipulation_test.R* and returns Figures 4.2 and D.3.

6. *QQplots_sample_undersmoothing.R* depends on *simulation_functions.R* and *manipulation_test.R* and returns Figures D.4.

7. *simulate_test_size.R* depends on *simulation_functions.R* and *manipulation_test.R* and returns size data for Table D.1.

8. *simulation_functions.R* forms the basis for our simulation study. In particular, the data generating process is implemented.

9. *poverty_index_score_distribution.R* depends on sisben_aejep.dta and returns histograms of poverty index score for years 1994-2003 shown in Figures 5.1 and E.1.

10. *poverty_index_score_gap_estimate.R* depends on sisben_aejep.dta and returns data depicted in Table 5.1.

References

Camacho, Adriana, and Conover, Emily. Replication data for: Manipulation of Social Program Eligibility. Nashville, TN: American Economic Association [publisher], 2011. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2019-10-13. https://doi.org/10.3886/E114759V1.