The Power of Tests for Detecting p-Hacking

Replication package

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This replication package contains the code for replicating all the results in the paper.

Software

- R version 4.2.2
- Matlab R2022b

Platform

The codes were tested on x86_64-apple-darwin17.0 (64-bit)

Content

- The file 'BWfigures.m' generates figures for analytical examples (Figures 1-11) and saves them in the 'BW' folder.
- The file 'DataGeneration.m' generates initial Monte Carlo draws (it uses pveck2.m, pveckIV.m, BIC.m and NeweyWest.m functions; the descriptions of these functions are available in the corresponding m-files). The results are saved in the 'DGPs' folder.
- The file 'dgp.m' generates the non-p-hacked and p-hacked distributions for various distributions of true effects (it uses NullAndAlt.m and NullAndAlt_var_bic.m functions; the description of these functions is available in the corresponding m-files). The results are saved in the 'DGPs' folder.
- The file 'PowerFigures.m' generates the power curves reported in the paper. The results are saved in the 'PowerCurves' folder.
- The file 'ScatterPlots.m' generates Bias-Power scatters reported in the paper. The results are saved in the 'Scatters' folder.
- The file 'MC_Tests.R' contains tests for p-hacking.
- The file 'MC_power.R' contains the function that calculates MC rejection rates for a given DGP.
- The file 'MC_power_main.R' replicates all Monte Carlo power curves reported in the paper.

To replicate all Monte Carlo results execute the files in the following order: 'DataGeneration.m' − >'dgp.m'− >'MC_power_main.R'− >'PowerFigures.m'− >'ScatterPlots.m'.

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