

Replication Instruction

1. Archive Structure

(1) Data Build

- 0-Build-Nielsen-Data: Scripts and data for RMS and Homescan data build. Check:
 - 0-Build-Nielsen-Data/Build-Nielsen-Data.pdf
 - 0-Build-Nielsen-Data/RMS/UPC-Version-Correction/Documentation.pdf
 - 0-Build-Nielsen-Data/RMS/Base-Price-Imputation/Documentation.pdffor details.
- 1-Build-Ad-Intel: Scripts for Ad-Intel data build. Check:
 - README.pdffor details.
- 2-String-Matching, 3-Brand-Aggregation, 4-Store-Panelist-Selection: Scripts and data for building intermediate datasets for main analyses. Check:
 - README.pdffor details.
- 5-Basic-Descriptions: Scripts for i) screening RMS brands, ii) computing shares of advertising by media type, and iii) R^2 of advertising against various fixed effects. Check:
 - README.pdffor details.

(2) Main Analyses

- 6-Basic-Estimations: Scripts for conducting all the basic regression estimations. Check README.pdf for details.
- 7-Semi-parametric: Scripts for conducting semi-parametric regression estimation and the output data. Check README.pdf for details.
- 8-ROI-Analyses: Scripts for conducting ROI analyses and the output data. Check:
 - README.pdffor details.

(3) Result Presentation

- `Result-Presentation`: Contains:
 - `Result-Presentation/Data/`: Datasets for figures and tables
 - `Result-Presentation/Draftcode/`: Scripts for figures and tables
 - `Result-Presentation/Figures/`: Output figures
 - `Result-Presentation/Tables/`: Output tables

2. Technical Details

(1) System Requirements

All data build and analyses codes were run on the Mercury high performance computing cluster at The University of Chicago Booth School of Business. And codes for result presentation were run on Mac OS X machines.

Additionally, note that following R versions were used for the corresponding analyses:

- `R.3.4.3`: Folder number 0 to 6
- `R.3.6.2`: Folder number 7 and 8
- `R.4.0.2`: `Result-Presentation/`

(2) Additional Notes

Not all the contents in folders with folder name `-Data` or `-Files` will be publicly available. Only researchers with approval can access to the Nielsen data via the Kilts Center for Marketing Data Center at The University of Chicago Booth School of Business and build intermediate datasets in each replication step.

References

Choi, Jang Won, and Joe Kook. 2021. "Nielsen Data Build."

Hitsch, Günter J., Ali Hortaçsu, and Xiliang Lin. 2019. "Prices and Promotions in U.S. Retail Markets: Evidence from Big Data." *Manuscript*.

Hitsch, Günter J., and Jihong Song. 2017. "Price Algorithm: Documentation."

Shapiro, Bradley T., Günter J. Hitsch, and Anna E. Tuchman. 2021. "TV Advertising Effectiveness and Profitability: Generalizable Results from 288 Brands." *Manuscript*.

Song, Jihong, and Joe Kook. 2021. "Fixing Incorrect UPC Version Changes."

Xu, Ningyin, and Joe Kook. 2021. "README."