FONDAZIONE BRUNO KESSLER

IRVAPP
ISTITUTO PER LA RICERCA VALUTATIVA SULLE POLITICHE PUBBLICHE

Advanced methods for impact evaluation

Course programme

10-12 January 2018

Department of Sociology and Social Research, Via Verdi 26, Trento (Italy)

FBK-IRVAPP – Istituto per la ricerca valutativa sulle politiche pubbliche
Fondazione Bruno Kessler
Via S. Croce, 77 - 38122 Trento

Every day there will be four 90 minute lectures, 9:00-10:30, 11:00-12:30, 14:00-15:30, and 16:00-17:30.

WEDNESDAY 10 JANUARY – INSTRUCTOR: ENRICO RETTORE

Discontinuities

Away from the cut-off

- Joshua D. Angrist, and Miikka Rokkanen, 2015, "Wanna Get Away? Regression Discontinuity Estimation of Exam School Effects Away From the Cutoff", Journal of the American Statistical Association 110 (512): 1331-1344.
- Bertanha M., Imbens G., 2014, "External Validity in Fuzzy Regression Discontinuity Designs", (No. w20773). National Bureau of Economic Research.
- Dong, Yingying, and Arthur Lewbel, 2015, "Identifying the Effect of Changing the Policy Threshold in Regression Discontinuity Models." Review of Economics and Statistics 97 (5): 1081–92

Inference and selection of the smoothing parameter

- Calonico, Sebastian, Matias D. Cattaneo, and Rocio Titiunik, 2014, "Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs." Econometrica 82 (6): 2295–2326
- Calonico, Sebastian, Matias D. Cattaneo, and Rocio Titiunik, 2015, "Optimal Data-Driven Regression Discontinuity Plots." Journal of the American Statistical Association 110 (512): 1753–69
- Cattaneo, Matias D., Brigham Frandsen, and Rocío Titiunik, 2015, "Randomization Inference in the Regression Discontinuity Design: An Application to Party Advantages in the U.S. Senate." Journal of Causal Inference 3 (1): 1–24
- Imbens G. and K. Kalyanaraman, 2012, "Optimal Bandwidth Choice for the Regression Discontinuity Estimator." Review of Economic Studies 79(3):933-959

Multiple cutoffs, multiple running variables

- Cattaneo, Matias D., Luke Keele, Rocío Titiunik, Gonzalo Vazquez-Bare. 2016. "Interpreting Regression Discontinuity Designs with Multiple Cutoffs", The Journal of Politics, 78, 3
- Keele, Luke J., and Rocío Titiunik. 2015. "Geographic Boundaries as Regression Discontinuities." Political Analysis 23 (1):127–55
- Wong, Vivian C., Peter M. Steiner, and Thomas D. Cook. 2013. "Analyzing Regression-Discontinuity Designs with Multiple Assignment Variables: A Comparative Study of Four Estimation Methods." Journal of Educational and Behavioral Statistics 38 (2): 107–41

Kinks

- Card, David, David S. Lee, Zhuan Pei, and Andrea Weber. 2015. “Inference on Causal Effects in a Generalized Regression Kink Design.” Econometrica, 83 (6): 2453–83

THURSDAY, 11 JANUARY – INSTRUCTOR: GUIDO IMBENS

Causality and Machine Learning

Causality and Randomized Experiments

- Imbens, Guido, and Donald Rubin, 2015, “Causal Inference for Statistics, Social and Biomedical Sciences”, Cambridge University Press. Chapters 1, 5 and 6.
- Scott, Steven L. (2010) ”A modern Bayesian look at the multi-armed bandit.” Applied Stochastic Models in Business and Industry 26.6:639-658.

Estimation of Average Treatment Effects Under Unconfoundedness

- Abadie, Alberto, and Guido W. Imbens. ”Large sample properties of matching estimators for average treatment effects.” Econometrica 74.1 (2006): 235-267.
- Hirano, Keisuke, Guido W. Imbens, and Geert Ridder. ”Efficient estimation of average treatment effects using the estimated propensity score.” Econometrica 71.4 (2003): 1161-1189.
- Crump, R. K., Hotz, V. J., Imbens, G. W., & Mitnik, O. A. (2009). “Dealing with limited overlap in estimation of average treatment effects.” Biometrika, 96(1), 187-199.

Estimation of Average Treatment Effects Under Unconfoundedness with Many Covariates

- Chernozhukov, V., Chetverikov, D., Demirer, M., Duflo, E., Hansen, C., Newey, W., & Robins, J. (2017). “Double/debiased machine learning for treatment and structural parameters.” The Econometrics Journal.
- Athey, Susan, Guido W. Imbens, and Stefan Wager. “Efficient inference of average treatment effects in high dimensions via approximate residual balancing.” No. 3408. 2016, arXiv:1604.07125

Synthetic Control and Matrix Completion Methods

- Abadie, Alberto, Alexis Diamond, and Jens Hainmueller. ”Synthetic control methods for comparative case studies: Estimating the effect of Californias tobacco control program.” Journal of the American Statistical Association 105.490 (2010): 493-505.
- Doudchenko, Nikolay, and Guido W. Imbens. “Balancing, regression, difference-in-differences and synthetic control methods: A synthesis.” arXiv:1610.07748
- Athey, S., Bayati, M., Doudchenko, N., Imbens, G., & Khosravi, K. (2017). “Matrix Completion Methods for Causal Panel Data Models.” arXiv preprint arXiv:1710.10251.

Instrumental Variables

Instrumental Variables with Heterogeneous Effects

- A. Abadie, “Bootstrap Tests for Distributional Treatment Effects in Instrumental Variables Models,” Journal of the American Statistical Association 97, March 2002, 284-292.
- A. Abadie, “Semiparametric Instrumental Variable Estimation of Treatment Response Models,” Journal of Econometrics 113, 2003, 231-263.
- Clement de Chaisemartin, “Tolerating Defiance: LATE Without Monotonicity,” Quantitative Economics, 2017.
- T. Kitagawa, “A Test for Instrument Validity,” Econometrica 83(5), 2015, 2043-2063.

Marginal Treatment Effects

- Brinch, C.N., Mogstad, M. and Wiswall, M. (2017). “Beyond LATE with a Discrete Instrument”, Journal of Political Economy, Volume 125, Issue 4, pp. 985-1039.
- Heckman, James J. and Edward Vytlacil. "Structural Equations, Treatment Effects, And Econometric Policy Evaluation," Econometrica, v73(3,May), 2005, 669-738.
- Kowalski, Amanda. 2016. “Doing More When You’re Running LATE: Applying Marginal Treatment Effect Methods to Examine Treatment Effect Heterogeneity in Experiments.” NBER Paper 22363.