EITM Europe 2022
Syllabus: **Quasi-Experimental Approaches** (Draft)
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(2.5 day course / 12.30 hours)

Course Content

Causal inference with observational data is hard. We carefully examine compelling examples from across the Social Sciences to see why they work. Building on the materials from the previous modules, this module introduces three major quasi-experimental designs to generate causal evidence from observational data: the instrumental-variable design, the difference-in-differences design, and the regression discontinuity design. We discuss the identifying assumptions for each design, classical and novel approaches to estimation and inference, as well as existing computational tools to implement the designs. The course combines a theoretical introduction to each design with in-depth discussion and lab sessions in which students perform replications of published work. The course will be particularly helpful for students writing their prospectus or designing a major research project.

Core Reading

Angrist, J. D. & Pischke, J.-S. (2014). *Mastering 'Metrics: The Path From Cause to Effect.* New Haven: Princeton University Press.

Cunningham, S. (2020). *Causal Inference. The Mixtape.* New Haven: Yale University Press.

Representative Background Reading:

Agresti, A. & Finlay, B. (2009). *Statistical Methods for the Social Sciences.* Upper Saddle River: Pearson, 4th edition, Chapter 1-9.

Dunning, T. (2012). *Natural Experiments in the Social Sciences. A Design-Based Approach.* Cambridge: Cambridge University Press

Course Schedule

Applied papers marked with * are required and should be read before the course.

Instrumental Variables (Wed. PM & Thu. AM)

- Angrist, J. D. & Pischke, J.-S. (2014). *Mastering 'Metrics: The Path From Cause to Effect.* New Haven: Princeton University Press, Chapter 3.

- Goldsmith-Pinkham, P., Sorkin, I., & Swift, H. (2020). Bartik Instruments: What, When, Why, and How. *American Economic Review*, 110(8), 2586–2624.

Selected, applied papers

* Dinas, E., Matakos, K., Xefteris, D., & Hangartner, D. (2019). Waking Up the Golden Dawn: Does Exposure to the Refugee Crisis Increase Support for Extreme-Right Parties? *Political Analysis*, 27(2), 244–254.

* Card, D. (2009). Immigration and Inequality. *American Economic Review*, 99(2), 1–21.

- Martin, G. J. & Yurukoglu, A. (2017). Bias in Cable News: Persuasion and Polarization. *American Economic Review*, 107(9), 2565–99.

- Falck, O., Gold, R., & Heblich, S. (2014). E-Lections: Voting Behavior and the Internet. *American Economic Review*, 104(7), 2238–65.

- Evans, W. N. & Owens, E. G. (2007). COPS and Crime. *Journal of Public Economics*, 91(1-2), 181–201.

- Green, D. P. & Winik, D. (2010). Using Random Judge Assignments to Estimate the Effects of Incarceration and Probation on Recidivism Among Drug Offenders. *Criminology*, 48(2), 357–387.

- Kern, H. L. & Hainmueller, J. (2009). Opium for the Masses: How Foreign Media Can Stabilize Authoritarian Regimes. *Political Analysis*, 17(4), 377–399.

Additional materials

- Cunningham, S. (2020). *Causal Inference. The Mixtape.* New Haven: Yale University Press, p. 315-384.

- Angrist, J. D., Imbens, G. W., & Rubin, D. B. (1996). Identification of Causal Effects Using Instrumental Variables. *Journal of the American Statistical Association*, 91(434), 444–455.

- Frangakis, C. E. & Rubin, D. B. (2004). Principal Stratification in Causal Inference. *Biometrics*, 58(1), 21–29.

- Abadie, A. (2003). Semiparametric Instrumental Variable Estimation of Treatment Response Models. *Journal of Econometrics*, 113(2), 231–263.

- Marbach, M. & Hangartner, D. (2020). Profiling Compliers and Non-Compliers for Instrumental Variable Analysis. *Political Analysis*, 28(3), 435–444.

- Borusyak, K. & Hull, P. (2020). *Non-Random Exposure to Exogenous Shocks: Theory and Applications.* Working Paper 27845, National Bureau of Economic Research.

Difference-in-Differences (Thu. PM & Fri. AM)

- Cunningham, S. (2020). *Causal Inference. The Mixtape.* New Haven: Yale University Press, p. 406-509.

- Goodman-Bacon, A. (2021). Difference-In-Differences With Variation in Treatment Timing. *Journal of Econometrics*, 225(2), 254–277.

Selected, applied papers

* Card, D. (1990). The Impact of the Mariel Boatlift on the Miami Labor Market. *Industrial & Labor Relations Review*, 43(2), 245–257.

* Stokes, L. C. (2016). Electoral Backlash Against Climate Policy: A Natural Experiment on Retrospective Voting and Local Resistance to Public Policy. *American Journal of Political Science*, 60(4), 958–974.

* Villamil, F. & Balcells, L. (2021). Do TJ Policies Cause Backlash? Evidence From Street Name Changes in Spain. *Research & Politics* and Rozenas, A. & Vlasenko, A. (2021). The Real Consequences of Symbolic Politics: Breaking the Soviet Past in Ukraine. *The Journal of Politics*, (forthcoming).

- Hainmueller, J. & Hangartner, D. (2019). Does Direct Democracy Hurt Immigrant Minorities? Evidence From Naturalization Decisions in Switzerland. *American Journal of Political Science*, 63(3), 530–547.

- Dinas, E., Matakos, K., Xefteris, D., & Hangartner, D. (2019). Waking Up the Golden Dawn: Does Exposure to the Refugee Crisis Increase Support for Extreme-Right Parties? *Political Analysis*, 27(2), 244–254.

- Beerli, A., Ruffner, J., Siegenthaler, M., & Peri, G. (2021). The Abolition of Immigration Restrictions and the Performance of Firms and Workers: Evidence From Switzerland. *American Economic Review*, 111(3), 976–1012.

- DellaVigna, S. & Kaplan, E. (2007). The Fox News Effect: Media Bias and Voting. *The Quarterly Journal of Economics*, 122(3), 1187–1234.

- Alpert, A. E., Evans, W. N., Lieber, E. M., & Powell, D. (2021). Origins of the Opioid Crisis and Its Enduring Impacts. *The Quarterly Journal of Economics*, (forthcoming).

Additional materials

- de Chaisemartin, C. & D'Haultfoeuille, X. (2022). *Two-Way Fixed Effects and Differences-In-Differences With Heterogeneous Treatment Effects: A Survey.* Working Paper 29691, National Bureau of Economic Research.

- Sun, L. & Abraham, S. (2021). Estimating Dynamic Treatment Effects in Event Studies With Heterogeneous Treatment Effects. *Journal of Econometrics*, 225(2), 175–199.

- Bertrand, M., Duflo, E., & Mullainathan, S. (2004). How Much Should We Trust Differences-In-Differences Estimates? *The Quarterly Journal of Economics*, 119(1), 249–275.

- Liu, L., Wang, Y., & Xu, Y. (2021). A Practical Guide to Counterfactual Estimators for Causal Inference With Time-Series Cross-Sectional Data. *Unpublished*.

- Callaway, B., Goodman-Bacon, A., & Sant'Anna, P. H. (2021). Difference-in-differences with a Continuous Treatment. *arXiv preprint arXiv:2107.02637*.

- De Chaisemartin, C. & D'HaultfŒuille, X. (2017). Fuzzy Differences-In-Differences. *The Review of Economic Studies*, 85(2), 999–1028.

- Abadie, A. (2005). Semiparametric Difference-In-Differences Estimators. *The Review of Economic Studies*, 72(1), 1–19.

Regression Discontinuity (Fri. PM)

- Angrist, J. D. & Pischke, J.-S. (2014). *Mastering 'Metrics: The Path From Cause to Effect*. New Haven: Princeton University Press, Chapter 4.

- Eggers, A. C., Freier, R., Grembi, V., & Nannicini, T. (2018). Regression Discontinuity Designs Based on Population Thresholds: Pitfalls and Solutions. *American Journal of Political Science*, 62(1), 210–229.

Selected, applied papers

* Mo, C. H. & Conn, K. M. (2018). When Do the Advantaged See the Disadvantages of Others? A Quasi-Experimental Study of National Service. *American Political Science Review*, 112(4), 721–741.

- Pinotti, P. (2017). Clicking on Heaven's Door: The Effect of Immigrant Legalization on Crime. *American Economic Review*, 107(1), 138–168.

- Hopkins, D. J. (2011). Translating Into Votes: The Electoral Impacts of Spanish-Language Ballots. *American Journal of Political Science*, 55(4), 814–830.

- Gagliarducci, S. & Nannicini, T. (2013). Do Better Paid Politicians Perform Better? Disentangling Incentives From Selection. *Journal of the European Economic Association*, 11(2), 369–398.

- Becker, S. O., Eggers, A. C., & Ehrlich, M. v. (2010). Going NUTS: The Effect of EU Structural Funds on Regional Performance. *Journal of Public Economics*, 94(9–10), 578—590.

- Clinton, J. D. & Sances, M. W. (2018). The Politics of Policy: The Initial Mass Political Effects of Medicaid Expansion in the States. *American Political Science Review*, 112(1), 167–185.

- Folke, O. (2014). Shades of Brown and Green: Party Effects in Proportional Election Systems. *Journal of the European Economic Association*, 12(5), 1361–1395.

Additional materials

- Cattaneo, M. D., Idrobo, N., & Titiunik, R. (2020). *A Practical Introduction to Regression Discontinuity Designs: Foundations*. Cambridge: Cambridge University Press.

- Cattaneo, M. D., Idrobo, N., & Titiunik, R. (2021). *A Practical Introduction to Regression Discontinuity Designs: Extensions.* Cambridge: Cambridge University Press.

- Gelman, A. & Imbens, G. (2019). Why High-Order Polynomials Should Not Be Used in Regression Discontinuity Designs. *Journal of Business & Economic Statistics*, 37(3), 447–456.

- Keele, L. J. & Titiunik, R. (2015). Geographic Boundaries as Regression Discontinuities. *Political Analysis*, 23(1), 127–155.

- Calonico, S., Cattaneo, M. D., & Titiunik, R. (2015). Optimal Data-Driven Regression Discontinuity Plots. *Journal of the American Statistical Association*, 110(512), 1753–1769.

- McCrary, J. (2008). Manipulation of the Running Variable in the Regression Discontinuity Design: A Density Test. *Journal of econometrics*, 142(2), 698–714.

- Muñoz, J., Falcó-Gimeno, A., & Hernández, E. (2020). Unexpected Event During Survey Design: Promise and Pitfalls for Causal Inference. *Political Analysis*, 28, 186–206.