Workshop on Causal Inference

Instructor: Elias Dinas (Nuffield College, University of Oxford)

29 May, 31 May and 1 June 2012

Emeroteca, Badia Fiesolana

Please register with Monika.Rzemieniecka@eui.eu

Aims

Do hospitals make people healthier? Does an additional year of schooling increase future earnings? Do parties that enter the parliament enjoy vote gains in subsequent elections?

Answering such questions has been notoriously difficult with observational data. The purpose of this workshop is to show why this is the case, to highlight the importance of randomization-based inference and look at ways to approach this benchmark without the luxury of experimental data.

Prerequisites

Prior knowledge of OLS regression is helpful but not necessary. Do familiarize yourself, however, with expectations and their properties. Population notation will be used almost throughout the workshop.

Format

Classes will meet four times: Tuesday from 16 to 18; Thursday from 10 to 13 and from 15 to 17; and Friday from 10 to 13.

The Tuesday seminar will be an introductory lecture. Thursday and Friday will combine lectures with hands-on applications and discussions about potential use of any of these methods in people's projects.

Readings

Mostly harmless econometrics: we will follow the book quite closely, albeit looking at as few equations as possible. Morgan and Winship will be also used and are more recommended as preparatory reading. More readings with applications will be available for each topic in the dropbox. A folder entitled requited reading will also include some readings that I will not refer to in the class but reading them in advance would be very helpful to follow the course.

Software

This is not a clique-and-go workshop. Keeping software discussion to its minimum, we will be using only STATA. One estimator will be introduced in MATLAB.

Day 1 (29 May: 16-18)

Potential outcomes and OLS regression

Angrist and Pischke 2009: Ch. 2; Ch: 3.

Morgan and Winship Ch. 2.

Day 2 (31 May)

Morning (10-13): Instrumental Variable Estimators: Angrist and Pischke Ch. 4; Morgan and Winship Ch. 7. More readings with applications will be added in the dropbox under the folder IV.

Afternoon (15-17): Regression Discontinuity Design: A&P: Ch. 6. More readings will be added in the dropbox under the folder RD.

Day 3: (1 June)

Difference-In-Difference Design: A&P Ch. 5. More readings with applications will be added in the dropbox under the folder DD.

References:

Morgan, S. and C. Winship. Counterfactuals and Causal Inference. Cambridge University Press.

Angrist, J. and J. Pischke. 2009. Mostly Harmless Econometrics. Princeton University Press.