Quantitative Methodology in the Social Sciences Seminar
Political Science 236B
Statistics 239B

Professor Jasjeet Singh Sekhon
Yotam Shem-Tov, GSI

Class: Wed 4–7
791 Barrows Hall

Professor Jasjeet Singh Sekhon
sekhon@berkeley.edu
HTTP://sekhon.berkeley.edu
Office: 750C Barrows

Yotam Shem-Tov, GSI
shemtov@berkeley.edu
Section: Friday 10–12, 103 Moffitt

Description

This course is intended to be a seminar in which we discuss research designs which have at least in part succeeded. Few causal inferences in the social sciences are compelling. We carefully examine successful examples to see why they work. The seminar is also a forum for students to discuss the research designs and methods needed in their own work. It should be particularly helpful for students writing their prospectus or designing a major research project. The seminar will be supplemented by lectures to cover the statistical and computational material needed to understand the readings such as matching methods, instrumental variables, regression discontinuity, maximum likelihood, and robust estimation. Applications are drawn from a variety of fields including political science, statistics, economics, sociology, and public health.

Prerequisites

Prerequisites: Political Science 236A/Statistics 239A (The Statistics of Causal Inference in the Social Sciences) or equivalent. Experience with R is assumed.

Evaluation

The primary purpose of this class is to read and reflect on each set of readings (often work by other students) and for students to write a term paper. We do not assign a lot of pages, but students are expected to read what is assigned very carefully. Class discussion is absolutely essential to the success of a seminar, and active participation is an important component of your overall evaluation.
The course evaluation is based on on class participation and discussion (25%), a research paper (50%), and a presentation of a paper in section (25%).

It is recommended that students work on the project and the term paper jointly with one or at most two other students. Experience has shown that this greatly facilitates learning as well as increases the likelihood that the paper will eventually become a published article. Students may hand in papers they are working on for other classes.

Course Software and Books

The programming language for this course is the $\text{R}$ variant of the $S$ statistical programming language. It is available for download from: [http://www.r-project.org/](http://www.r-project.org/) $\text{R}$ is open source software (released under the GNU public license) and is available at no charge.

Course outline

The readings for the first few weeks are as follows. The readings after that will be adapted to the interest of the students or borrowed from the Additional Topics section below.

1. GOTV experiments:

   Background readings that are also required:


   Background readings that are also required:

4. RD and Mexico and the drug war:

5. Data science as manager: Teacher value added models.
• Rothstein (2010): “Teacher Quality in Educational Production: Tracking, Decay, and Student Achievement”. [LINK]
• Chetty, Friedman, and Rockoff (2014b): ‘Measuring the Impacts of Teachers II: Teacher Value-Added and Student Outcomes in Adulthood”. [LINK]

Additional readings:
• Rothstein (Rothstein): “Revisiting the Impacts of Teachers”. [LINK].
• Chetty, Friedman, and Rockoff (Chetty et al.): “Measuring the Impacts of Teachers: Response to Rothstein (2014)” (note, the title should be Rothstein (2015)). [LINK].


Additional reading:
• Heckman and Vytlacil (2007b): “Chapter 71 Econometric Evaluation of Social Programs, Part II: Using the Marginal Treatment Effect to Organize Alternative Econometric Estimators to Evaluate Social Programs, and to Forecast their Effects in New Environments”. [LINK].

7. Macro-Questions I


8. Macro-Questions 2

• The impact of genetics? Works or not?

9. The line between description and causality

Additional Topics

1. • D.A. Freedman. “On types of scientific enquiry.” [Freedman’s webpage]
   If you want some more background, see

2. Placebos: Computers, Pencils, and Controls

3. Estimating media effects in the field
   • *Lenz and Ladd*: “Exploiting a Rare Shift in Communication Flows: Media Effects in the 1997 British Election”

4. Education as a treatment: returns to Education

5. Regression-Discontinuity
   • *Eggers and Hainmueller*: “The Value of Political Power: Estimating Returns to Office in Post-War British Politics”

For background on Regression Discontinuity Design see:
   • *Thistlethwaite and Campbell (1960)*: “Regression-Discontinuity Analysis: An alternative to the ex post facto experiment”
   • *Gerber and Green (2009)*: “Testing the Accuracy of Regression Discontinuity Analysis Using Experimental Benchmarks”
6. Experiments, RD, and Design


7. RD for Incumbency Advantage


8. When Natural Experiments Are Neither Natural Nor Experiments


Sekhon and Titiunik (2012): “When Natural Experiments Are Neither Natural Nor Experiments”

9. Fixing Experiments?


Imai, Kosuke. ”Do Get-Out-The-Vote Calls Reduce Turnout? The Importance of Statistical Methods for Field Experiments.” American Political Science Review

Green and Gerber Reply


10. Synthetic Cohorts


11. Voting Irregularities

Wand, Shotts, Sekhon, Walter R. Mebane, Herron, and Brady (2001): The Butterfly Did It: The Aberrant Vote for Buchanan in Palm Beach County, Florida

Herron and Sekhon (2005): Black Candidates and Black Voters: Assessing the Impact of Candidate Race on Uncounted Vote Rates

For additional examples see:
• Mebane and Sekhon (2004): Robust Estimation and Outlier Detection for Overdispersed Multinomial Models of Count Data


References


Rothstein, J. Revisiting the impacts of teachers. .


