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

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Class: Wed 4–7 (but we will usually finish by 6)
223 Moses Hall

Description

This course is intended to be a seminar in which we discuss research designs which have 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%), and a research paper (75%).

Optionally, students, may select the option that allows them to choose a project described below (25%), and a final paper which proposes a research design (50%). Of course, if students actually implement the proposed research design, that is wonderful, but not required.

The project involves choosing a target paper in one of several journals, and then writing an analysis of the target paper. The idea is to browse through several years of journals and to pick the best—clearest, most interesting, most convincing—paper. The paper must use data to make its point: this is a statistics course. You are looking for good papers. You are not looking for bad papers. Bad papers are easy to find. Good papers are hard to find. Your job will be to convince us that the paper is actually good.

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 a more polished version of their PS236A papers or papers they are working on for other classes.

Course Software and Books

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

The following books on \texttt{R} may be of interest:


Course outline

The readings for the first month 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:
   \textbf{Gerber, Green, and Larimer (2008)}: Social pressure and vote turnout: Evidence from a large-scale field experiment. \textit{APSR} 102: 1–33. \url{[LINK]}. Data available.

   Readings to review:
   - \textbf{Deaton (2009)}: “Instruments of Development: Randomization in the tropics, and the search for the elusive keys to economic development”


3. Mexico and the drug war:
4. Geographical RD


5. Macro-Questions


6. The line between description and causality


Additional Topics


   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”


• Hahn, Todd, and van der Klaauw (2001): “Identification and Estimation of Treatment Effects with a Regression-Discontinuity Design”

6. Experiments, RD, and Design


7. RD for Incumbency Advantage


• A new design: Lee (2008): “Randomized Experiments from Non-random Selection in U.S. House Elections’


8. When Natural Experiments Are Neither Natural Nor Experiments


• Sekhon and Titunik (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


