

POL 213: Research Methods

Spring 2009

Seminar: T 12:10–3:00, Social Sciences 273

Professor: B. Jones

Office: 1265 Social Sciences

Office Hours: MW 1:00–2:30 or by appointment

Phone: (530) 752-1649

e-mail: bsjjones@ucdavis.edu

Homepage: <http://psfaculty.ucdavis.edu/bsjjones/>

Course Description

This is the third of the three-course sequence in political methodology. As such, it picks up where POL 212 left off, namely with extensions of (and beyond) the linear regression model. We will consider some additional topics with respect to the classic linear model but then quickly move to likelihood-based models. The class will be a mixture of mathematical topics, for example matrix manipulation of statistical quantities and writing likelihood functions, and applied topics, for example estimating and interpreting several different kinds of models.

Course Requirements

There are a variety of readings assignments the student will be expected to complete in a timely fashion. Additionally there will be several problem sets assigned during the course of the quarter, a midterm and final exam, and a poster session in which the student will present his or her research. In most of the lectures and in most applications I illustrate, I will use the R computing environment. For your problem sets, in most cases, you will be instructed to use R. As far as your grade break-down goes, problem sets will account for 40 percent of your total grade; the exams will account for 40 percent of your total grade (20 percent each); and the poster will account for 20 percent of your final grade.

Readings

The primary books we will use in this class are:

Fox's Applied Regression Analysis and Generalized Linear Models. Los Angeles: Sage.

Faraway's Extending the Linear Model with R. Boca Raton: Chapman and Hall.

Agresti's An Introduction to Categorical Data Analysis. New York: Wiley.

In addition to these books, some articles will be assigned. Most of these articles will be available on JStor (www.jstor.org).

Course Itinerary

April 7 Properties of Estimators (Review)

Readings:

Faraway, Chapter 1; Appendix A.

Fox, Chapter 14.

April 14 Introduction to Maximum Likelihood Estimation

Readings:

Fox, Chapter 14.

Agresti, Chapter 1, 3–5.

April 21 MLE and Binary Choice Models

Readings:

Faraway, Chapter 2.

Fox, Chapter 14

Agresti, Chapters 1 & 3–5.

Abrajano, Alvarez, and Nagler. "This Hispanic Vote in the 2004 Presidential Election: Insecurity and Moral Concerns." JOP (preprint). Link:

http://www.nyu.edu/gsas/dept/politics/faculty/nagler/abrajano_alvarez_nagler31.pdf

April 28–May 5 Multicategorical Choice Models, GLMs, and Count Models

From 12:10 to 1:30, Sid Chib will give a talk at IGA. I want the class to meet there and we will reconvene after for an additional hour.

Readings:

Faraway, Chapters 3–5.

Fox, Chapter 15.

Agresti, Chapter 6.

Branton and Jones, 2005. "Rexamining Racial Attitudes: The Conditional Relationship Between Diversity and Socioeconomic Environment."

http://psfaculty.ucdavis.edu/bsjjones/branton_jones.pdf

May 12 Post-Estimation Uncertainty

Readings:

Faraway, Chapter 6. Fox, Chapter 15.

Others will be added.

May 19 Tobit, Heckman, and Other Selection Models

Readings:

Cameron and Trivedi, Chapter 16 (a photocopy will be available).
Von Stein, "Do Treaties Constrain or Screen? Selection Bias and Treaty Compliance."
APSR.

http://psfaculty.ucdavis.edu/bsjjones/von_stein.pdf

May 26 Causal Inference and Matching Methods

Readings:

Cameron and Trivedi, Chapter 25 (photocopy available)

Other readings will be posted.

Gordon and Huber, "The Effect of Electoral Competitiveness on Incumbent Behavior."
QJPS.

http://psfaculty.ucdavis.edu/bsjjones/gordon_huber.pdf

June 4 Models for Correlated Data

Readings:

Agresti, Chapter 9

Faraway, Chapter 12

Make-up day Nonparametric Regression

Readings:

Fox, Chapter 15

Faraway, Chapter 11.