Political Science 206: Political Research Methods II

Spring 2014

Garrett Glasgow
3719 Ellison Hall
Office Hours: 12:00pm-2:00pm Wednesdays, or by appointment.
email: glasgow@polsci.ucsb.edu
http://www.polsci.ucsb.edu/faculty/glasgow/ps206/ps206.html
Class meets Wednesdays 2:00pm-4:50pm in Ellison 3814 (Pritchett Room)

Course Description

This course covers statistical models with categorical or limited dependent variables. These models are some of the most common in political science, since many phenomena we attempt to explain are categorical or limited in nature. Examples include vote choice, deciding on a political party to identify with, campaign contributions (can never be less than zero), a country deciding on war or peace, and voter turnout. I assume a basic knowledge of linear regression and statistics. You will learn about the linear probability model (and its flaws), logit and probit models (for binary choices, such as yes/no decisions), ordered logit and probit (for ordered outcomes, such as an ideology scale), multinomial and conditional logits (for multiple unordered categories, such as a multicandidate election), event count models (for the number of occurrences of some phenomena in some time frame, such as the number of wars a country has had this decade), and advanced topics such as models for panel data and random coefficients.

Course Requirements

Grades will be based on two components:

- Homework assignments designed to give you hands-on experience with implementing the methods discussed in class and with using Stata or R, software packages that will allow you to estimate the models we discuss in class. These homeworks will typically consist of reading a journal article that uses the method we are currently studying, using Stata or R to estimate a model using the method, and a 2-3 page write-up of the results. (50%)

- A take home final exam. This exam will be much like the homeworks – one part will be reading and correctly interpreting the statistical models used in journal articles, and one part will be estimating the appropriate statistical model for a series of problems and writing up the results. (50%)
Required Textbook


I will be posting additional readings to our class website for you to download.

Course Topics

- Theoretical foundations of discrete choice models. Derivation of the logit and probit models for binary dependent variables. Identification restrictions and alternative distributional assumptions such as scobit.


- Interpretation of discrete choice models. Predicted probabilities and log-odds ratios.

- Hypothesis testing and goodness of fit. Wald, likelihood ratio, and Lagrange multiplier tests. Pseudo-$R^2$ and percent correctly predicted.

- Discrete choice models for ordinal dependent variables. Ordered logit and probit models.

- Discrete choice models for nominal dependent variables. Multinomial logit and conditional logit. The independence of irrelevant alternatives (IIA) assumption.

- Event count models.

- Models for panel data and time-series cross-sectional (TSCS) data.

- Models using simulated maximum likelihood, such as mixed logits and multinomial probits.