SPS Seminar 2nd term 2012-2013

Categorical Data Analysis

Organised by Daniel Horn, Max Weber Fellow

February 28, March 1, March 7, March 8
11:00-13:00 and 14:00-17:00
Credits: 20

Seminar Room 2, Badia Fiesolana
Please register with: Monika.Rzemieniecka@eui.eu

This seminar is a direct continuation of the Introduction to Quantitative Methods by Fabrizio Bernardi and is suggested to those of you who wish to use advanced statistical techniques in their research. We will focus on the basic regression models for categorical dependent variables. The aim is to armor you with the ability to run your own models using Stata and especially to understand and interpret the results of estimations with categorical variables (as well as to be able to communicate them).

Although the estimation of complex models became easier with modern statistical software packages, non-linearities in models with categorical variables make post-estimation interpretation difficult. The class will directly relate to the linear models in highlighting the differences between the linear and non-linear estimation methods. At the beginning of the class we will quickly refresh your knowledge on the OLS and ML estimations, and take off using your knowledge on the differences and similarities of LPM and logit. During the seminar we will cover the logit and probit estimation, as well as their multinomial versions (ordered and nominal logit/probit). If time and interest allows we cover smaller topics like conditional logit or interaction effects. Emphasis will be on practicality: more than half of each session will be devoted to problem solving with Stata. For each session (topic) we will cover question such as: When to estimate odds ratios and when marginal effects? How to estimate these models using the Stata software? How to do post-estimations for hypothesis testing? How to test the validity of the estimates? How to graph the results? And most importantly how to interpret the results we gain?
In general each session will start with a lecture, which is followed by some “quality time” spent with your laptops solving problems (alone as well as in groups). So don’t forget to bring a laptop with Stata installed to the seminars.

**Prerequisites**: Introduction to Quantitative Methods and also some knowledge of the Stata statistical software is a necessity.

**Assessment**: You are required to hand in two take-home exercise (could be prepared in 2 member groups) (45%) and also to write a longer (max 10 page) essay until the end of the semester (45%). 10% of the grade is active class participation.

Data for in class problem sets and take-home exercises will be provided, but you can use your own dataset for the longer essay.

If you want to write a term paper for this seminar/workshop, please send a copy by email to the seminar’s professor as well as to the organising secretary. Once the paper is approved, she will update your credit award in your academic records. The deadline for submission is 31 May 2013.

**Preliminary weekly list of topics** (might be modified taken your knowledge and interest into account):

* more detailed description to follow *

1. session  OLS vs. Maximum likelihood, the LPM model, the logit model.
2. session  Logit and probit, marginal effects vs. odds ratios, hypothesis testing, graphing results
3. session  Ordinal variables
4. session  Nominal variables

+ Fixed effect (conditional) logit, interaction effects (if time allows)

**Recommended Texts**


**Useful links:**

http://www.ats.ucla.edu/stat/stata/default.htm

http://shawnasmith.net/teaching/

http://elsa.berkeley.edu/~train/distant.html