Advanced Longitudinal Analysis

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Course description

The increasing availability of longitudinal data, namely data in which the same units (often individuals) are observed over time (usually every year), provides researchers with many opportunities. For example, the longitudinal character of the data allows identifying the temporal order of events and life stages over the life-course, and allows controlling for unobserved confounders. These possibilities help social scientists in the difficult enterprise of estimating causal effects. At the same time, the complex structure of panel data requires advanced data management techniques, as well as specific methods for their analysis.

This course aims at providing the necessary skills for managing data with a complex structure by showing how operations can in many cases be automatized. In addition, the course will present advanced estimators for analysing panel data.

All the topics will be presented using Stata.

Program

Day	Time	Room	Topic
April 12	10:00-13:00	Lab	Good computing practices and overview of useful Stata commands and functions
April 13	10:00-13:00	Lab	Working effectively
April 14	14.00-17.00	Lab	Advanced panel estimators: FEIS
April 16	10:00-13:00	Lab	Create your own program

Detailed program

Day 1
Good computing practices and overview of useful Stata commands and functions

- Good practices: commenting, workflow, naming and directories
- Review of useful commands
- Review of numerical and string functions

Day 2
Working effectively

- Accessing and extracting attributes
- Macro and macro functions
- Loops
- Parsing
- Matrix manipulation
- Storing and plotting regression results

Day 3
Advanced panel estimators: FEIS

- Recap of Fixed-Effects estimator
- Fixed-Effects Individual Slope models

Day 4
Create your own program

- How to define a simple program
- Adding options to the program

References

Baum, C. F. (2009). *An introduction to Stata programming*. College Station: Stata Press.

Brüderl, J., & Ludwig, V. (2015). 'Fixed-effects panel regression. The Sage handbook of regression analysis and causal inference', in Best, H., & Wolf, C. (Eds.). (2015). *The SAGE handbook of regression analysis and causal inference*. Sage., pp. 327-357.

Cox, NJ, and HJ Newton, eds. (2014). *One Hundred Nineteen Stata Tips*. College Station: Stata Press.

Ludwig, V., & Brüderl, J. (2018). 'Is there a male marital wage premium? New evidence from the United States'. *American Sociological Review*, 83(4), 744-770.

Nagler, J. (1995). 'Coding Style and Good Computing Practices', *PS: Political Science and Politics*, 28 (3): 488-492.