

Tutorial on
Econometrics of Networks

Bologna, .10.2018

Organized by

SIE (Società Italiana degli Economisti)

Description of the tutorial

This tutorial focuses on the empirical analysis of economic and social networks. The main emphasis is on characterizing the structure of networks, explaining their genesis, and considering the effect of networks in shaping agents' decisions.

Specifically, the course is going to provide an overview of the different models and methods for analyzing data with cross-sectional dependence, i.e. those able to explicitly test behavioral models with interdependent agents' decisions. In addition to this, the course will address challenging empirical questions inherent in these analyses, including the need to distinguish between peer influences and other factors such as self-selection (when network location is chosen), contagion, and exposure to common shocks.

The goal is to provide the ability to implement the techniques introduced in class and the theoretical basis that can guide the interpretation of the results.

Learning Outcomes

Students participating in the tutorial will gain an up-to-date and accessible overview of the relevant theory as well as exposure to empirical applications of network modelling techniques in economics. A statistical software (R) will be used to learn the key elements for the estimation of these models. The examples used will be taken from Battaglini and Patacchini (2018) and Battaglini, Leone Sciabolazza, Patacchini (2018).

The tutorial is open to a maximum of **30** participants. **Please, enroll as soon as possible.**

Lecturer

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Program

Introduction to the econometrics of networks: Modeling peer effects.

Identification issues: Dealing with endogeneity.

Modeling heterogeneous network spillovers: Modifications of the linear-in-means model.

Network formation processes: Modeling link interdependencies.

Bibliography

- M. Battaglini, E. Patacchini (2018), "Influencing Connected Legislators," *Journal of Political Economy*, forthcoming.
- M. Battaglini, Leone Sciabolazza V., Patacchini E. (2018), "Effectiveness of connected legislators," *NBER*, w24442
- M. Battaglini, V. Leone Sciabolazza, E. Patacchini, S. Peng (2018), "Econet: An R package for the Estimation of parameter-dependent centrality measures," Mimeo, available at <http://www.valerioleonesciabolazza.com/>
- De Paula, A. (2017), "Econometrics of Network Models," in B. Honor, A. Pakes, M. Piazzesi, L. Samuelson (Eds.), *Advances in Economics and Econometrics: Eleventh World Congress*, Cambridge University Press, 268-323.
- Jackson, M. O. (2010). *Social and economic networks*. Princeton university press.
- Jackson, M.O. and Y. Zenou eds. (2013), *Economic Analyses of Social Networks*, III part, Edward Elgar Publishing, 2013.

Software used:

- R (<http://www.r-project.org/>)

Recommendations:

Install the complete version of R on your laptop.

Knowledge required: statistics, econometrics, notions of network analysis.