

Spatial Econometrics Summer Term 2020

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Office Hours: Wednesday, 14:00-15:00

During the semester break: appointment by e-mail

Course Information:

Lecture: Wednesday, 16:00 - 18:00, Stud.IP, Virtual Seminar

Exercise: Thursday, 14:00 - 16:00, Stud.IP, Virtual Seminar

Start: 22th of April 2020; End: 16th of July 2020

Course Description:

This course provides an introduction to spatial econometrics modelling that are particularly appropriate to analyse real-world phenomena of spatial dependence among geographically proximate units. The idea is that spatial units (e.g., countries, firms, or individuals in a social network) often interact with each other and that this kind of interaction is facilitated by spatial proximity with direct consequences for an individual's own strategic or socioeconomic behavior. The course is designed for students with a prior knowledge in standard regression methods and an interest in learning about spatial regression models and its applications across various social science disciplines (e.g., economics, political science, anthropology, and demography).

The course will start by providing a discussion in the modelling of spatial diffusion process based on the specification of a spatial weights matrix. Special attention is paid to the various approaches that are eligible to model the arrangement of spatial units in space (e.g., weights based on contiguous neighbours, distances, or links in a social network). Next, the course proceeds by providing an overview of three types of spatial econometric models based on cross-sectional data, static models based on panel data, and dynamic spatial panel data models. Several of these spatial model specifications and its corresponding estimators will be discussed, and interpretation of spatial spillover results are provided using various empirical datasets.

With successful completion of the course, students shall be able to identify spatial diffusion processes across various empirical settings and to have a thorough understanding in the application, estimation, and interpretation of the relevant spatial regression models.

Course Structure:

The lecture will be accompanied by an econometric exercise that enables students to gain practical experience with the implementation of the various spatial regression models. During the exercise, we use the StataCorp's Sp commands for mapping, estimation, and interpretation of spatial regression models.

References

- [1] **Anselin, Luc (1988)**. Spatial Econometrics: Methods and Models. Kluwer Academic Publishers, Dordrecht, Boston, London.
- [2] **Darmofal, David (2015)**. Spatial Analysis for the Social Sciences. Cambridge University Press, New York, USA.
- [3] **Elhorst, J. Paul (2014)**. Spatial Econometrics: From Cross-Sectional Data to Spatial Panels. Springer, Heidelberg, New York, Dordrecht, London.
- [4] **LeSage, James, and Pace, R. Kelley (2009)**. Introduction to Spatial Econometrics. CRC Press, Taylor & Francis Group, Boca Raton, London, New York.
- [5] *Additional documents, including lecture slides, literature, data, etc. will be made available on Stud.IP.*