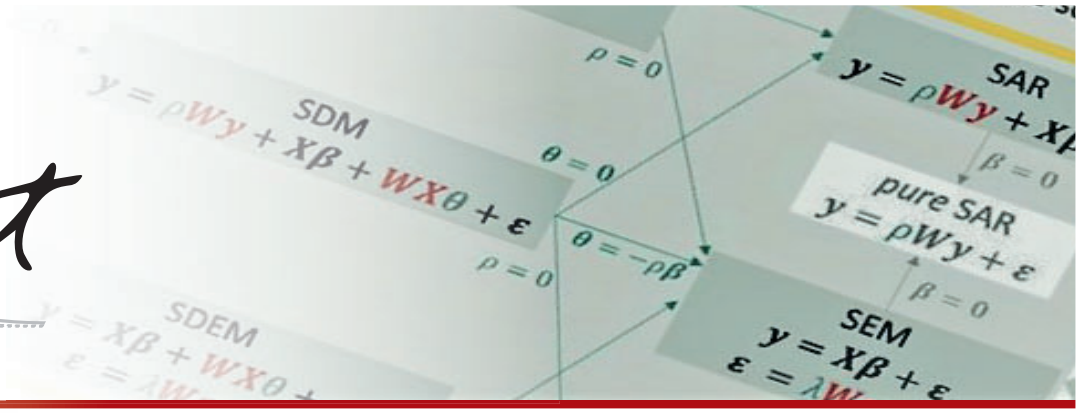

TRAINING COURSE | ONLINE

INTRODUCTION TO SPATIAL PANEL DATA MODELS USING STATA

17-21 May 2021

Many phenomena in the economics, medical and social fields, such as unemployment, crime rates or infectious diseases, tend to be spatially correlated. Spatial econometrics, in contrast to standard econometric modelling, exploits geo-referenced cross-sectional and/or panel data for dealing with spatial dependence and spatial heterogeneity. More specifically, spatial panel data sets contain repeated observations over time for a set of geo-referenced statistical units.

Our "Introduction to Spatial Panel Data analysis using Stata" course offers participants the opportunity to acquire the necessary theoretical and empirical toolset for modelling data which are correlated in time and space using both official and community written Stata spatial estimation commands. The opening session reviews Stata's built-in **sp** command suite and illustrates how one prepares data for a spatial longitudinal analysis, before moving on to discuss different estimation techniques for both spatial fixed- and random-effects "static" models and for dynamic models with additive and/or interactive fixed-effects.

During the five sessions of the course a series of empirical applications are used in order to highlight and discuss important issues such as model selection, average direct and indirect marginal effects, multiple spatial interactions and/or endogenous covariates, global stationarity, short- versus long-run marginal effects, and strong versus weak cross-sectional dependence.

In common with TStat's course philosophy, each individual session is composed of both a theoretical component (in which the techniques and underlying principles behind them are explained), and an applied segment, during which participants have the opportunity to implement the techniques using real data under the watchful eye of the course tutor. Throughout the course, theoretical sessions are reinforced by case study examples, in which the course tutor discusses and highlights potential pitfalls and the advantages of individual techniques. Particular attention is also given to both the interpretation and presentation of empirical results.

Upon completion of the course, it is expected that participants are able to identify and evaluate which specific spatial econometric methodology is more appropriate to both their dataset and the analysis in hand and subsequently apply the selected estimation techniques to their own data.

COURSE CODE

D-EF41-OL

DATE AND LOCATION

Due to the ongoing COVID-19 situation, the 2021 edition of this training course will be offered ONLINE on a part-time basis on the 17th-21st of May 2021 from 10.00 am to 1.30 pm Central European Summer Time (CEST).

https://www.tstattraining.eu/training/intro-spatial-panel-data-models-stata-ol/

INTRODUCTION TO SPATIAL PANEL DATA MODELS USING STATA

TARGET AUDIENCE

Ph.D. Students, researchers and professionals working in public and private institutions interesting in acquire the latest empirical techniques to be able to independently implement spatial Spatial panel data estimation techniques in Stata.

PREREQUISITES

Knowledge of the arguments covered in our "Introduction to Spatial Analysis", "Linear Panel Data Models in Stata" and "Dynamic Panel Data Analysis" training courses is strongly suggested. Experience with Stata's do-fi le programming is required.

PROGRAM

SESSION I:

1. Introduction
   - Spatial data analysis using Stata: overview of the **sp** suite
   - Space, spatial objects and spatial data

2. Prepare data for the spatial longitudinal analysis
   - Spatial and panel data declarations
   - Data with *shapefile*: Creating and merging a Stata-format *shapefiles*
   - Data without *shapefile*

SESSION II:

1. Panel data models: first generation
   - The *W* (eights) matrix: types and normalization
   - Fixed- vs random- effects (static) models
   - Quasi Maximum Likelihood estimation
   - Hypothesis testing and model selection

SESSION III:

1. First generation: further topics
   - Partial effects: direct, indirect and total effects
   - Fixed-effects Instrumental Variables estimation
     - (Selection) Internal instruments
     - Multiple spatial interactions and/or endogenous covariates

SESSION IV:

1. Panel data models: second generation
   - Dynamic models
   - Estimation and testing
     - Global stationarity
     - Short- vs long-run marginal effects
     - Cross-sectional dependence and exponent of CD tests for Residuals

SESSION V:

1. Panel data models: third generation
   - Dynamic models with weak and strong CD (Halleck Vega and Elhorst, 2016)
     - Quasi Maximum Likelihood estimation (Shi and Lee, 2017)
   - Heterogeneous coecients (Aquaro, Bailey and Pesaran, 2020)

https://www.tstattraining.eu/training/intro-spatial-panel-data-models-stata-ol/

REGISTRATION FEES

Full-Time Students*: € 890.00
Academic: € 1260.00
Commercial: € 1685.00

*To be eligible for student prices, participants must provide proof of their full-time student status for the current academic year.

Fees are subject to VAT (applied at the current Italian rate of 22%). Under current EU fiscal regulations, VAT will not however applied to companies, Institutions or Universities providing a valid tax registration number.

The number of participants is limited to 8. Places, will be allocated on a first come, first serve basis. The course will be officially confirmed, when at least 5 individuals are enrolled.

Course fees cover: teaching materials (handouts, Stata do-files, program templates and datasets to use during the course), a temporary course licence of Stata valid for 30 days from the beginning of the course.

Individuals interested in attending this course, must return their completed registration forms to TStat by the 7th May 2021.

CONTACTS

Andra Craciunescu
TStat Training | Kleebergstraße, 8
D-60322 Frankfurt am Main

TStat S.r.l. | Via Rettangolo, 12-14
I-67039 Sulmona (AQ)
T. +39 0864 210101

training@tstat.eu

www.tstattraining.eu
www.tstat.eu

Further details regarding our registration procedures, including our commercial terms and conditions, can be found at https://www.tstattraining.eu/training/intro-spatial-panel-data-models-stata-ol/.