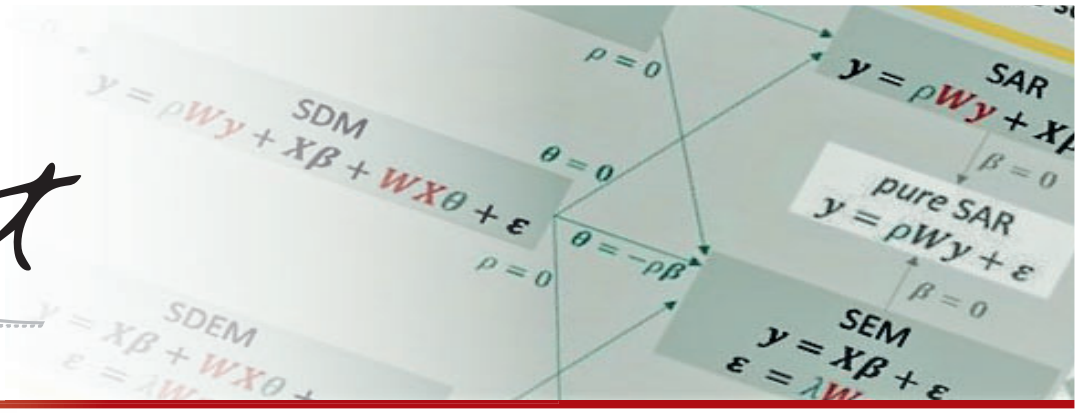


TRAINING COURSE | ONLINE

INTRODUCTION TO SPATIAL ANALYSIS USING STATA

10-14 May 2021

Many phenomena in the economics, medical and social fields, such as unemployment, crime rates or infectious diseases, tend to be spatially correlated. Our "Introduction to Spatial Analysis using Stata" course offers researchers a unique opportunity to acquire the necessary toolset to conduct exploratory spatial data analysis.

The course begins by providing an overview of the Stata's sp suite of commands for spatial analysis and then discusses how to manage different kind of spatial data and how to prepare them for the analysis. The course then turns to cover spatial data visualization, how to define proximity using spatial weights matrices and how to detect spatial autocorrelation. Finally, two sessions introduce the participants to spatial autoregressive models focusing on estimation, testing and model selection. Special emphasis will be given to the computation and interpretation of average direct and indirect marginal effects and to the treatment of special cases such as multiple spatial interactions and more endogenous covariates.

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-EF34-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 10th-14th of May 2021 from 10.00 am to 1.30 pm Central European Summer Time (CEST).

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 data analysis.

https://www.tstattraining.eu/training/intro-spatial-analysis-stata-ol/

INTRODUCTION TO SPATIAL ANALYSIS USING STATA

PREREQUISITES

Knowledge of basic econometrics tools such as ordinary least-squares, instrumental variables and maximum likelihood estimation of the linear regression model is strongly suggested. Basic knowledge of Stata's do-file programming is required. An introductory knowledge of Python, whilst not a perquisite, will facilitate the empirical section dedicated to Python in session 2.

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 analysis:
   - Spatial data declaration
   - Data with *shapefile*: Creating and merging a Stata-format *shapefiles*
   - Data without *shapefile*

SESSION II:

1. Visualize spatial data
   - Geographic coordinate systems
   - Maps (dot, proportional symbol, diagram, choropleth)
   - 2D spatial point patterns
   - Change coordinate system using Python
   - Retrieve data from OpenStreetMap using Python (*optional*)

SESSION III:

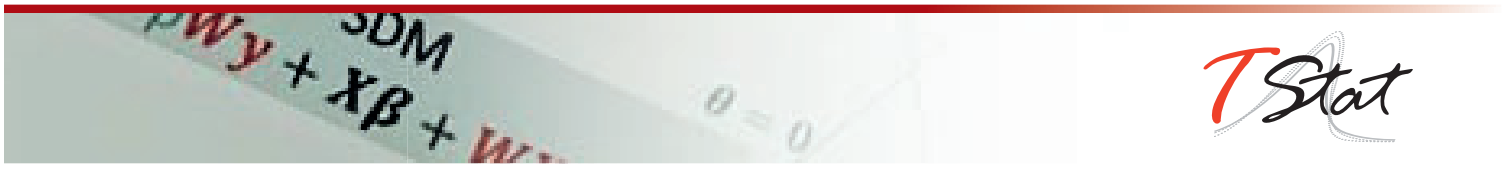
1. Measure spatial proximity
   - The *W* (eights) matrix
   - Normalization
   - Detect spatial autocorrelation

SESSION IV:

1. Spatial autoregressive models I
   - A taxonomy
   - Quasi Maximum Likelihood estimation
   - Hypothesis testing and model selection

SESSION V:

1. Spatial autoregressive models II
   - Partial effects: direct, indirect and total effects
   - Instrumental Variables estimation
     - Internal instruments
     - Multiple endogenous covariates
   - Multiple spatial interactions



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 1st May 2021.

CONTACTS

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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-analysis-stata-ol/.