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AGENDA

12th Workshop
Spatial Data Analysis

Date: April 28-29, 2026

Time: 12:00 PM-15:00 PM

Organised within the Project: Economics and Policy Options for Climate Change Risk and Global Environmental Governance (ACRONYM: EPOC)

Hosted by West University of Timisoara, Faculty of Economics and Business Administration, East-European Center for Research in Economics and Business, Finance, Business Information Systems and Modelling Department in partnership with Balıkesir University, Faculty of Economics and Administrative Sciences and Academy of Economic Studies of Moldova, bringing together academic expertise from Romania, Türkiye, and the Republic of Moldova to foster regional collaboration, interdisciplinary learning, and knowledge exchange.

Venue: Online (via Google Meet platform)

Access link: https://meet.google.com/xrp-rbvn-kyy

www.epoc-pnrr.uvt.ro

Event Scope

This workshop on Spatial Data Analysis is designed to equip participants with both the theoretical understanding and practical skills needed to analyze spatial and panel data in an economic context. The event focuses on integrating geographic information systems (GIS) with econometric techniques to better understand spatial patterns and relationships in socioeconomic and environmental data.

Organised within the framework of the project Economics and Policy Options for Climate Change Risk and Global Environmental Governance (EPOC), the event is hosted by West University of Timisoara, Faculty of Economics and Business Administration, East-European Center for Research in Economics and Business, Finance, Business Information Systems and Modelling Department in partnership with Balıkesir University and Academy of Economic Studies of Moldova. This collaboration brings together academic expertise from Romania, Türkiye, and the Republic of Moldova, fostering regional knowledge exchange and interdisciplinary research in spatial economics and environmental policy.

Participants will explore how spatial dependencies influence economic outcomes and policy decisions, particularly in the context of climate change and global environmental governance. Through a combination of guided demonstrations, hands-on exercises, and interactive discussions, the workshop will provide a structured learning environment that bridges theory with real-world applications.

Special emphasis will be placed on the use of tools such as QGIS, GeoDa, and Stata for spatial data visualization, shapefile handling, and spatial econometric modeling. By working with datasets such as World Bank socioeconomic indicators, participants will gain practical experience in conducting spatial analysis relevant to research and policy-making.

Description

This workshop explores Spatial Data Analysis, providing participants with insights into basic spatial econometrics through theoretical background, empirical examination, and case studies. Participants will learn how to extract and work with spatial shapefiles, data visualization, distribution, and estimation of several spatial panel regressions. The session encourages interaction, exchange of ideas, and collaborative exploration of the economics of geography, with an emphasis on socioeconomic and energy indicators.

Key topics include

- Spatial Data Analysis: An introduction
- Spatial Data Distribution & Visualization: QGIS Program
- Spatial Matrix and Spatial Autocorrelation: GeoDa Program
- Spatial Panel Regressions (SDM, SEM, SAR)

Participants will learn how to

- Understand the fundamental concepts of spatial data analysis and spatial econometrics;
- Work with spatial data formats, including shapefiles, and perform data extraction;
- Visualize and interpret spatial distributions using GIS tools;
- Apply basic panel data analysis techniques in Stata;
- Estimate and interpret spatial panel regression models;
- Analyze socioeconomic and environmental datasets with a spatial perspective;
- Critically evaluate spatial analysis results and their policy implications;
- Engage in collaborative discussions on the economics of geography and sustainability.

Participants

This workshop is designed for a broad academic audience, including researchers, undergraduate and master's students, PhD candidates, and postdoctoral fellows interested in spatial data analysis, spatial econometrics, and their applications in socioeconomic and environmental research.

Technical Requirements

Participants are kindly asked to:

- Have the latest versions of **QGIS**, **GeoDa**, and **Stata (version 15 or later)** installed on their laptops;
- Ensure access to relevant datasets (e.g., World Bank socioeconomic indicators such as income, labour market, health, and education);
- Have basic knowledge of statistics, econometrics, or data analysis;
- Ensure a stable internet connection for the online sessions.

Software Installation:

- QGIS: https://qgis.org → Download → choose version according to your OS
- GeoDa: https://geodacenter.github.io → Download section
- Stata: available via institutional license (use institutional credentials if applicable)

Methodological Emphasis

The essence of this workshop is to strengthen participants' ability to understand and apply spatial data analysis and spatial econometrics as rigorous, evidence-based research methodologies.

Through a structured combination of theory and practice, participants will explore how spatial analysis:

- Identifies and measures spatial dependence and spatial heterogeneity in socioeconomic data;
- Enhances empirical research by integrating geographic dimensions into econometric models;
- Supports policy-relevant analysis by uncovering regional disparities and spatial spillover effects;
- Contributes to better-informed decision-making in the fields of climate change, regional development, and environmental governance;
- Ensures methodological rigor through reproducible workflows involving data preparation, visualization, and model estimation.

By combining GIS tools (QGIS, GeoDa) with econometric techniques in Stata, the workshop demonstrates how spatial datasets can be transformed into meaningful analytical outputs that support both academic research and policy analysis.

Expected Outcomes

By the end of the workshop, participants will:

➢ Understand the principles and workflow of spatial data analysis and basic spatial econometrics;
➢ Gain hands-on experience in using QGIS and GeoDa for spatial visualization and data processing;
➢ Apply panel data analysis techniques using Stata;
➢ Estimate and interpret spatial econometric models (including spatial panel regressions);
➢ Identify spatial patterns, clusters, and regional disparities in socioeconomic datasets;
➢ Be able to design and conduct their own spatial data analysis projects for academic or policy purposes.

General programme

The workshop is scheduled for **April 28–29, 2026**, and is structured as a two-day online event, each session running from **12:00 PM to 15:00 PM**.

Day 1 – April 28

Time	Session	Details	Speaker
12:00 – 12:30	Opening and Introduction	Welcome remarks and overview of workshop objectives	Mohammed Alnour
12:30 – 13:00	Thematic Presentation / Methodological Framework	Overview of theoretical and methodological foundations	Mohammed Alnour
13:00 – 15:00	Practical Demonstration / Case Study	Hands-on session focused on applying the discussed spatial analysis methods	Mohammed Alnour

Day 2 – April 29

Time	Session	Details	Speaker
12:00 – 12:30	Interpretation and Discussion	Interpretation of results, validation, and discussion of findings	Mohammed Alnour
12:30 – 14:30	Open Discussion and Q&A Session	Participant feedback, reflections, and interactive discussion	Mohammed Alnour
14:30 – 15:00	Closing Remarks	Summary of key insights and next steps	Mohammed Alnour