Applied Econometrics Using GIS Techniques
Winter Term 2020/21

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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: 21st of October 2020; End: 4th of February 2021

Course Description:

The use of geographic information systems (GIS) has become increasingly popular among economists. The broad term GIS encompasses a set of tools (both software and hardware) to collect, store, visualize and analyze spatial data from the real world. GIS techniques allow economists to use data on geography and weather as sources of exogenous variation for estimating the causal impact of a wide range of treatments (e.g., infrastructure, mass media, slave trade, land suitability for agriculture, and terrain ruggedness). Satellite images from the earth's surface, which can be analyzed with geo-processing tools in GIS, allow economists to construct geo-spatial indicators (e.g., temporal changes in the intensity of night-time light and patterns of deforestation) that more closely reflect the local actors and underlying mechanisms of interest. Scanned old maps can be used in GIS to identify the location of ethnic groups for estimating the causal impact of geographic partitioning of ethnic homelands during colonization on local conflict patterns in Africa. The increasing availability of disaggregated, high-resolution spatial data for the earth's surface permits the construction of geospatial indicators of any kind and at arbitrary smaller units of analysis. This capability of GIS has opened new pieces of economics research that had previously escaped the researcher's attention but can now be conducted.

Course Structure:

The lecture will be accompanied by a computer lab that enables students to gain practical experience in the replication of some of the actual pieces of economics research that use geospatial data for causal inferences.

References

[1] **Heywood, Ian, Cornelius, Sarah, and Carver, Steve (2011).** An Introduction to Geographical Information Systems. Fourth Edition, Pearson Education Limited, Harlow, England.

[2] *Additional documents, including lecture slides, literature, data, etc. will be made available on Stud.IP.*