

Intermediate Quantitative Methods

Given by Arnout van de Rijt and Filip Kostelka

Tuesday, 17:00-19:00 (Lab) and Friday, 11:00-13:00 (Lecture)

The objective of this seminar is to refresh and extend knowledge of basic quantitative methods typically used in the political and social sciences. The first part of the seminar covers statistical inference and ordinary least squares (OLS) regression. The second part covers cases where the basic OLS assumptions need to be relaxed and some approaches to dealing with these situations. Topics cover statistical inference and hypothesis testing, linear regression and its assumptions, model specification, nested models (multilevel and panel regression), maximum likelihood estimation, binary outcomes, DAGs, confounding and colliding, and an introduction to fixed and random effects. The seminar consists of weekly lectures and lab exercises. The seminar schedule is flexible so that the themes covered during the seminar need not completely follow a weekly schedule, with some flexibility left to extend the coverage of topics that are deemed to require more attention. Many of the assignments include exercises using statistical software and they can be done either with R or Stata (or some other software). Many of the exercises using software include data simulation and application of the covered methods on simulated data. The basics of data simulation will be covered in the first lab. The seminar is suitable for researchers who have previously taken introductory courses in quantitative methods and know the basics of linear regression, and who are sufficiently comfortable with a statistical software package like R or Stata. Being comfortable with high school level mathematics is important so it is good idea to take Mathematics for Political and Social Scientists in September to brush up. For those with no or little previous experience with quantitative methods, or who want to brush up their basic skills, we recommend they instead take Introduction to Quantitative Methods, which runs in parallel to this seminar. Those who have extensive prior background in quantitative methods can consider Introduction to Econometrics and Regression in the Economics Department. All first-year researchers will be asked to take an entry test during the September programme, which will allow them to assess their quantitative skills and choose the most suitable seminar for them. The Intermediate Quantitative Methods seminar is also open to researchers who previously took Introduction to Quantitative Methods. To obtain credits for this seminar, doctoral researchers have to pass a final test in multiple-choice form.