BAMBERG
GRADUATE SCHOOL
OF SOCIAL SCIENCES

Multilevel Modeling

Instructor: Research Professor Levente Littvay, HUN-REN Centre for Social Sciences

Course outline

Multilevel data structures are all over the social sciences: observations within municipalities, cantons, districts, or countries. Students within schools. Patients within hospitals. Multiple observations taken from the same person or any other unit of analysis. In quantitative studies, relevant predictors appear on all these levels of analysis. But how do we deal with them?

The course is designed to provide scholars with a basic understanding of multilevel (a.k.a. Hierarchical linear or mixed effects) regression models designed to solve these problems. Special attention is given to the translation of theoretical expectations into statistical models, the interpretation of results in multilevel analyses, and the general use and misuse of multilevel models in the social sciences. While the course is predominantly designed to give you the knowledge of multilevel regression modeling, it does also arm you with the basic tools to run multilevel models in R. (I also have Stata code for most of the models presented thanks to a former teaching assistant, but I am not a Stata user so there you are on your own.) Applications will include models with continuous and limited dependent variables in hierarchical, longitudinal, and cross-classified nesting situations and, if time allows, multilevel structural equation models. The goal of the course is to offer a basic introduction and the foundation for participants to start using and critically assessing multilevel models and also have the ability to independently discover and master advanced multilevel statistical topics. Upon completion, the participants will have a basic conceptual understanding of multilevel modeling and its statistical foundations. Participants will be able to critically assess the appropriateness of such techniques in their own and other people's research and conduct multilevel modeling themselves to the highest academic standards.

Prerequisites to the course

A solid foundation in linear regression. (Knowing what to click in SPSS and how to copy and paste the table does not constitute a solid foundation. Knowing the assumptions of regression models like homoskedasticity and no autocorrelation does.)

About the Trainer

Levente Littvay is a Research Professor at HUN-REN Centre for Social Sciences and Senior Research Fellow at the Democracy Institute of Central European University, where he also was (Full) Professor of Political Science (2007-2023) and taught graduate courses in research design, applied statistics, electoral politics, voting behavior, political psychology, and American politics and was the inaugural and only two-time recipient of the university's Teaching Award (2015 for methods-, and 2021 for online teaching). Received his MA and PhD in Political Science and an MS in Survey Research and Methodology from the University of Nebraska-Lincoln. Taught numerous research methods workshops globally, and is the founder and Academic Coordinator of MethodsNET, a Presidium member of the Hungarian Political Science Association, and head of Team Survey in Team Populism. He was a member of the European Social Survey's Round 10 (2020-21) democracy and COVID-19 module questionnaire design teams and Co-Principal Investigator for the Comparative Study of Election Systems for Hungary and Tunisia. His awards include the European University Institute's Fernand Braudel Senior Research Fellowship (2019-20), the 2022 Giovanni Sartori Prize for best paper in the Italian Political Science Review / Rivista Italiana di Scienza Politica, and the Morton Deutsch Award for the best 2017 article in Social Justice Research. His books include Multilevel Structural Equation Modeling with Bruno Castanho Silva and Constantin Manuel Bosancianu in SAGE's QASS (little green book) series, which was also published in Mandarin Chinese.