

Workshops zu fortgeschrittenen Verfahren der quantitativer Datenauswertung

Im Zuge einer wechselseitigen Öffnung der Methodenausbildung bieten die Universitäten Graz und Linz im Zusammenarbeit mit der ÖGS-Sektion „Soziologische Forschungsdesigns und -Methoden“ zwei Workshops zu fortgeschrittenen Verfahren an, die für Studierende aus sozialwissenschaftlichen Master-Studiengängen sowie Phd/Doktoratsprogrammen und interessierte Forschende offen stehen.

- *Mehrebenenanalyse mit R*; Workshopleitung: Malcolm Fairbrother (Umeå University, Schweden & Universität Graz); Administration: Markus Hadler (Universität Graz).
Datum: 16. und 17. April 2021.
- *Strukturgleichungsmodelle mit AMOS*; Workshopleitung und Administration: Dimitri Prandner und Robert Moosbrugger (beide Universität Linz).
- Datum: 28. und 29. Mai 2021.

Die Anmeldung für die jeweils 2-tägigen Workshops erfolgt via E-Mail an Dimitri.Prandner@jku.at, die Teilnahme ist kostenfrei, setzt aber einen Zugang zu R bzw. SPSS mit AMOS Modul voraus. Die Workshops werden aufgrund der aktuellen Pandemiebedingungen mittels der Software WebEx der Firma Cisco administriert (verfügbar unter: www.webex.com).

Die Anmeldung hat bis zum **1. April 2021** zu erfolgen und wird bis zum **5. April 2021 bestätigt**, die Veranstalter behalten sich das Recht vor, die Anzahl an Teilnehmer*innen zu begrenzen.

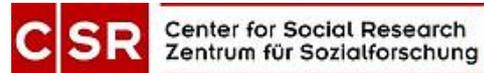
Die Teilnahme an den Workshops wird von Seiten der Sektionsleitung in Form einer Teilnahmebestätigung zertifiziert, die auch die Arbeitszeit und Arbeitsleistung der Teilnehmenden ausweist. Arbeitssprache während der Workshops ist Englisch.

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Malcolm Fairbrother

Analyzing Comparative Longitudinal Survey Data Using Multilevel Models with R



<https://centrum-sozialforschung.uni-graz.at/>



<https://soziologie.uni-graz.at/>

Date and Time:

16th of April 2021, 10:00-13:00

17th of April 2021, 10:00-13:00, 14:00-18:00

Weblink will be sent to all registered participants

Content

Many surveys spanning multiple countries--or many regions within a single country--are now being fielded multiple times over the course of years or even decades. Examples include the European Social Survey, International Social Survey Programme, EU Statistics on Income and Living Conditions, and (across states) the U.S. and German General Social Surveys. The range of topics that can be studied using data from these surveys is extremely broad: from health to religiosity to social and political attitudes and behaviours.

This course will show participants how to analyse these comparative longitudinal survey data (CLSD) using multilevel models that exploit any or all of three different kinds of variation: differences between countries, change within countries over time, and variation across individuals. We will begin by considering the structure of CLSD, and then what fixed effects and random effects (multilevel) models each reveal about the variation between and within groups in data characterised by clustering. We will see how CLSD can be understood as doubly hierarchical (or clustered), and therefore how we can analyse them with models partitioning between and within effects. We will also consider the capabilities of societal growth curves, and the insights that can be gained from models with random (country-specific) slopes. The course will emphasise the use of graphical analysis throughout, and note some risks that analysts of CLSD need to avoid.

Software

We will use the open-source R software and environment for statistical computing, including some easily installable add-on packages (lme4, MCMCglmm, plm, WDI). Participants need to work with their own hardware and attend with R pre-installed (from <https://cran.r-project.org/>).

Prerequisites

Participants who are strongly familiar with techniques for panel data analysis, are welcome to join. A basic understanding of multilevel models, and some experience of designing and fitting them is of great advantage! Participants are not required to have any prior familiarity with R.

Short bio

Malcolm Fairbrother is a professor of sociology at Umeå University, Sweden, and the University of Graz, Austria. He is also a researcher at the Institute for Futures Studies, Stockholm. Originally from Canada, he holds a PhD in sociology from the University of California, Berkeley (USA). He worked in England for ten years, and has been a visiting researcher at institutions in Mexico, Spain, and Italy. His methodological research has concentrated on the use of multilevel models in analyzing comparative survey data. In his substantive research, he studies environmental politics, and social and political trust. He has also used qualitative comparative-historical methods to investigate the political origins of economic globalization. His work has appeared in journals such as the British Journal of Political Science, European Sociological Review, American Journal of Sociology, and Political Science Research and Methods.

References

Course largely based on:

- Bell, Andrew, and Kelvyn Jones. 2015. "Explaining Fixed Effects: Random Effects Modeling of Time-Series Cross-Sectional and Panel Data." *Political Science Research and Methods* 3[1]: 133–153. doi:10.1017/psrm.2014.7.
- Bell, Andrew, Malcolm Fairbrother, and Kelvyn Jones. 2019. "Fixed and random effects models: making an informed choice." *Quality & Quantity* 53: 1051–1074. <https://doi.org/10.1007/s11135-018-0802-x>
- Enders, Craig K., and Davood Tofghi. 2007. "Centering Predictor Variables in CrossSectional Multilevel Models: A New Look at an Old Issue." *Psychological Methods* 12(2): 121–138.
- Fairbrother, Malcolm. 2014. "Two Multilevel Modeling Techniques for Analyzing Comparative Longitudinal Survey Datasets." *Political Science Research and Methods* 2[1]: 119–140. doi: 10.1017/psrm.2013.24.
- Schmidt-Catran, Alexander W., and Malcolm Fairbrother. 2016. "The Random Effects in Multilevel Models: Getting Them Wrong and Getting Them Right." *European Sociological Review* 32[1]: 23–38. doi: 10.1093/esr/jcv090.
- Shor, Boris, Joseph Bafumi, Luke Keele, and David Park. 2007. "A Bayesian Multilevel Modeling Approach to Time-Series Cross-Sectional Data." *Political Analysis* 15: 165–181.

Robert Moosbrugger und Dimitri Prandner

Structural Equation Models with AMOS: Advanced Cross-sectional analysis



<https://www.jku.at/institut-fuer-soziologie/>

Date and Time: 28th of May 2021, 10:00-12:00; 13:00-16:30

20th of May 2021, 10:00-16:00;

Weblink will be sent to all registered participants

Structural equation modeling (SEM) has been a staple for the social science analysis for a long time, however it is often not part of the mandatory courses in bachelor and master curricula.

The workshop is meant to introduce participants and interested researchers to the basic concepts of SEM and how they can be applied to show causal relationships between variables. Typically, SEM includes techniques like confirmatory factor analysis as well as multiple regression analysis (e.g. path analysis).

Using data from the Austrian Social Survey – SSÖ – the course will show participants how to prepare data to be suitable for SEM, build models within AMOS and describe the outcomes of the analysis based on both key indicators for model quality and observed effects.

While the first day of the workshop is split between basic lectures on the theoretical underpinnings of SEM and smaller hands on tasks, the second day is reserved to work on rebuilding a model found in a published article.

This structure should help participants building the knowledge on how to prepare a dataset for SEM, formulate and adopt a model while also understanding the limitations and possibilities offered by the technique.

Software

We will use SPSS and the AMOS software package in the course. Participants need to have their own computer with SPSS installed available to participate.

Prerequisites

Participants need to be familiar with **linear regression** as well as **exploratory factor analysis before the workshop**. Prior experience with SPSS syntax is required. Participants are required to read some literature after day one of the workshop; before day two.

Schedule

Day 1:

10:00 to 12:00 Introduction Lecture by Robert Moosbrugger and Dimitri Prandner into the SEM

12:00 to 13:00 Lunchbreak

13:00 to 15:00 Worksheets and smaller exercises for confirmatory factor analysis and path analysis

15:00 to 15:30 Coffeebreak

15:30 to 16:30 Discussion and intro to reading material that has to be read before day 2.

Day 2:

10:00 to 15:00 Group work on a pre-prepared model

15:00 to 16:00 Discussion of the solutions and how to apply the information on other use cases.