

FIXED-EFFECTS MODELS, EVENT-HISTORY AND SEQUENCE ANALYSIS

February 10-12, 2025

University of Lausanne, Géopolis Building, room 2879

This doctoral module aims to equip participants with a solid understanding of fixed-effects models (within estimators), event history analysis, and sequence analysis. Fixed-effects models allow researchers to analyze within-unit variations by controlling for unobserved, time-invariant characteristics. Event history analysis focuses on examining the timing and likelihood of events over time. Sequence analysis provides tools for studying patterns and trajectories in longitudinal data. Through engaging presentations supported by real-world examples, participants will explore the principles and applications of these methods, with practical exercises reinforcing their understanding and use.

MONDAY, FEBRUARY 10, 2025

SEQUENCE ANALYSIS – PROF. MATTHIAS STUDER (UNIVERSITY OF GENEVA)

09:00 – 10:30 Introduction to Sequence Analysis and its Uses in the Social Sciences.

10:30 – 11:00 Coffee break

11:00 – 12:30 Short R introduction & Descriptive Sequence Analysis

12:30 – 13:30 Lunch

13:30 – 15:00 Creating Typology of Trajectories

15:00 – 15:30 Coffee break

15:15 – 16:30 Creating Typology of Trajectories II

16:30 – 17:00 Available for further discussion on participants' research.

No prior-to-the-module reading is required for sequence analysis.

TUESDAY, FEBRUARY 11, 2025

**EVENT HISTORY ANALYSIS – DR. ALESSANDRO DI NALLO (MAX PLANCK INSTITUTE
FOR DEMOGRAPHIC RESEARCH)**

09:00 – 10:30 Introduction to Survival Analysis

10:30 – 11:00 Coffee break

11:00 – 12:30 How to Perform a Survival analysis

12:30 – 13:30 Lunch

13:30 – 15:00 Introduction to Panel Data Analysis

15:00 – 15:15 Coffee break

15:15 – 16:30 Q & A

Readings:

Survival analysis

Recommended: The first two chapters from Jenkins, S. P. (2005). Survival analysis. *Unpublished manuscript, Institute for Social and Economic Research, University of Essex, Colchester, UK*, 42, 54-56.

Optional:

- Jenkins' survival analysis course (Survival analysis with STATA: <https://www.iser.essex.ac.uk/resources/survival-analysis-with-stata>)
- Guzzo, K.B. Is Stepfamily Status Associated With Cohabiting and Married Women's Fertility Behaviors?. *Demography* 54, 45–70 (2017). <https://doi.org/10.1007/s13524-016-0534-2> <https://link.springer.com/article/10.1007/s13524-016-0534-2#citeas>
- Adsera A. Where Are the Babies? Labor Market Conditions and Fertility in Europe. *Eur J Popul.* 2011 Feb 1;27(1):1-32. doi: 10.1007/s10680-010-9222-x.

Panel data analysis

Recommended:

- Ludwig, V., & Brüderl, J. (2021). What you need to know when estimating impact functions with panel data for demographic research. *Comparative Population Studies-Zeitschrift für Bevölkerungswissenschaft*, 46, 453-486.
- Huinink, J., Brüderl, J., Nauck, B., Walper, S., Castiglioni, L., & Feldhaus, M. (2011). Panel analysis of intimate relationships and family dynamics (pairfam): Conceptual framework and design. *Zeitschrift für Familienforschung*, 23(1), 77-101.
- Myrskylä, M., & Margolis, R. (2014). Happiness: Before and after the kids. *Demography*, 51(5), 1843-1866.

WEDNESDAY, FEBRUARY 12, 2025

**FIXED EFFECTS ANALYSIS – DR. OLIVER LIPPS (FORS CENTER – UNIVERSITY OF
LAUSANNE)**

09:00 – 10:30 The theory behind fixed-effects panel models

10:30 – 11:00 Coffee break

11:00 – 12:30 Fixed-effects panel models in practice

12:30 – 13:30 Lunch

13:30 – 15:00 Fixed-effects panel models in practice

15:00 – 15:15 Coffee break

15:15 – 16:30 Q & A

Readings: No reading is a prerequisite for attending the fixed-effects analysis module. However, the **Brüderl, J. & Ludwig, V. (2015)** and the **Sommet, N., & Lipps, O. (2024)** are recommended.

Causality and counterfactual:

Morgan, S. L. & Winship, C. (2014). Counterfactuals and causal inference. Cambridge.

Fixed effects mechanism:

Allison, P. (2019). Asymmetric Fixed-effects Models for Panel Data. *Socius*, 5. <https://doi.org/10.1177/2378023119826441>

Andreß, H., Golsch, K., & Schmidt, A. (2013). Applied panel data analysis for economic and social surveys. Springer Science & Business Media.

Brüderl, J., Kratz, F., & Bauer, G. (2019). Life course research with panel data: An analysis of the reproduction of social inequality. *Advances in Life Course Research* 41. <https://doi.org/10.1016/j.alcr.2018.09.003>

Brüderl, J. & Ludwig, V. (2015). Fixed-effects panel regression. In: SAGE Handbook of regression analysis and causal inference (eds: Best and Wolf), 327-357. https://www.researchgate.net/profile/Josef-Bruederl/publication/321274654_Fixed-Effects_Panel_Regression/links/5cbebbba0299bf1209778d8ce/Fixed-Effects-Panel-Regression.pdf

Kratz, F., & Brüderl, J. (2021). The Age Trajectory of Happiness. Ludwig-Maximilian-University, Munich.

Growth curves using FE models:

Ludwig, V., & Brüderl, J. (2021). What you need to know when estimating impact functions with panel data for demographic research. *Comparative Population Studies*, 46.

Sommet, N., & Lipps, O. (2024, November 18). A primer on fixed-effects and fixed-effects panel modeling using R, Stata, and SPSS. <https://doi.org/10.31234/osf.io/etn9d>

Fixed versus random effects models:

Bell, A., & Jones, K. (2015). Explaining Fixed Effects: Random Effects Modeling of Time-Series Cross-Sectional and Panel Data. *Political Science Research and Methods*, 3(1), 133–153.

Short (2-3 wave) panels: Vaisey, S., & Miles, A. (2017). What you can—and can't—do with three-wave panel data. *Sociological Methods & Research*, 46(1), 44-67.