Discipline: [Methods/Field]

1. Language

English

2. Title

Longitudinal Data Analysis: Event History Models

3. Lecturer

Nikolaus Beck

4. Date and Location

7-10. September – Munich

5. Course Description

5.1 Abstract and Learning Objectives

The life course of organizations as well as individuals is characterized by a succession of important events. Organizations change their strategies, their structure, their leadership etc. and might cease to exist at some point in time. Individuals move from one job to another, climb up the career ladder, or get fired. These events indicate transitions from a certain origin state, e.g. an organization before a change of the CEO, to a certain destination state, here: the same organization with a new CEO. The best empirical tool for the analysis of these transitions are techniques of event history analysis. These methods, which belong to the wider class of longitudinal data analysis, are tremendously important in management research. An impressive amount of studies in this field addresses research questions, which are related to transitions from one state to another one.

This course aims at providing students with the most relevant techniques of event history analysis. At the end of this course, students should be able to understand the theoretical concepts of event history analysis as well as to apply these methods by themselves.

5.2 Content

The following topics are planned to be addressed in the course:

1. Introduction to Modelling in STATA. Simple regression and multivariate regression in management.
2. Longitudinal data: From time series data over panel data to event history analysis data.
3. Introduction of survival data and event history analysis.
4. The basic concepts of event history modeling: duration, censoring, continuous time, discrete time, hazard rate, cumulative hazard rate, density, survivor function
5. Non-parametric methods: e.g. life table estimators, Kaplan-Meier-functions
6. Comparison of survival functions
7. Cox proportional hazards regression model

8. Parametric models and discrete time models
9. Introduction to competing risks analysis and to multi-state and multi-episode models.

5.3 Schedule (including start and end time)

Day I (07.09.2021)
9:00 – 9:30: Arrival of participants, reception, check-in and introduction
9:30 – 10:30: Introduction to simple and multivariate regression in STATA
10:30-11:00: Coffee Break
11:00 – 12:30: Presentation and Discussion of the basic theoretical concepts of Event History Analysis and presentation of relevant data types, difference between continuous and discrete time
12:30 - 13:30: Lunch
13:30 -15:30: Relevant quantities and concepts: duration, censoring, hazard rate, cumulative hazard rate, density, survivor function
15:30 - 16:00: Coffee break
16:00 – 17:30: Recap of the topics of day 1, Q&A, and exercises

Day II (08.09.2021)
9:30 – 11:00: Nonparametric estimation and comparison of survivor functions with applied examples
11:00-11:30: Coffee break
11:30 – 12:30: Exponential Models, basics on ML-estimation
12:30 – 13:30: Lunch
13:30 – 15:30: Piecewise Constant Exponential Models and introduction to episode splitting
15:30 - 16:00: Coffee break
16:00 – 17:30: Practice

Day III (09.09.2021)
9:30 -10:00: More on episode splitting
10:00 - 11:00: Hazard rate models with time dependence (parametric models)
11:00 – 11:30: Coffee break
11:30 – 12:30: Cox proportional hazards regression models (I)
12:30 -13:30: Lunch
13:30 – 14:30: Cox proportional hazards regression models (II)
14:30 -15:30: Practice (I)
15:30 - 16:00: Coffee break
16:00 – 17:30: research paper examples and practice (II)

Day IV (10.09.2021)
9:30 – 11:00: Introduction to multi-episode models and fixed effects, discrete-time hazard models; using episode splitting to approximate parametric models
11:00 – 11:30: Coffee break
11:30 – 12:30: Practical examples
12:30 – 13:30: Lunch
13:30 – 14:30: Practice
14:30-15:30: Wrap up of the course, Q&A I
15:30 - 16:00: Coffee break

16:00 – 16:45: Wrap up of the course, Q&A II
16:45 – 17:30: Farewell

5.4 Course format

The content of the course will be highly applied. Thus, except for the introductory part at the very beginning of the course, all topics will be presented with practical examples that the students apply themselves. The course will be held using STATA.

6. Preparation and Literature

6.1 Prerequisites

Participants are expected to have knowledge of multivariate regression analysis.
Participants should be roughly familiar with the basic procedures of STATA since this course will not focus on how to use STATA. Moreover, the course will be entirely based on using do-files (command files), i.e. NO dialogue boxes! Participants should therefore know how to use STATA do-files and should also have basic knowledge on mathematical and logical operators as well as data generating and manipulation commands.

6.2 Essential Reading Material

Blossfeld, HP., Golsch, K., and Rohwer, G. (2019): Event History Analysis with Stata. 2nd edition London and New York: Routledge.

Freeman, J., Carroll G.R. and Hannan, M.T. (1983): The Liability of Newness. Age Dependence in Organizational Death Rates. American Sociological Review 48: 692-710.

Brüderl, J. and Schüssler, R. (1990): Organizational Mortality: The Liabilities of Newness and Adolescence. Administrative Science Quarterly 35: 530-547.

Barron, D.N., West, E., and Hannan, M.T. (1994): A Time to Grow and a Time to Die. Growth and Mortality of Credit Unions in New York City, 1914-1990. American Journal of Sociology, 100, 381-421.

Amburgey, T. L., Kelly, D., & Barnett, W. P. 1993. Resetting the clock. The dynamics of organizational change and failure. ***Administrative Science Quarterly,*** 38: 51-73.

Beck, N., Brüderl, J., and Woywode, M. (2008): Momentum or Deceleration? Theoretical and Methodological Reflections on the Analysis of Organizational Change. ***Academy of Management Journal***.

For those students with no prior knowledge on STATA:

Minkoff, S.L. (2012): An Introductory Guide to Stata. Version 2. Working Paper. http://scottminkoff.com/wp-content/uploads/2017/06/minkoff_stataguide_version2.pdf

6.3 Additional Reading Material

For those students who plan to work with R in the future:

Broström, G. (2012). ***Event history analysis with R***. Boca Raton et al. CRC Press.

For German speaking students:

Beck, N. (2005): Ereignisanalyse. In: Kühl, S. et al. (Eds.): Quantitative Methoden der Organisationsforschung. Ein Handbuch. Wiesbaden: VS Verlag, 443-477.

For all:

Allison, P. (1984): Event History Analysis: Regression for Longitudinal Event Data. Newbury Park: Sage

Allison, P. D. 1996. Fixed-effects partial likelihood for repeated events. ***Sociological Methods & Research***, 25: 207-222.

6.4 To prepare

All participants must be acquainted with the basics of STATA. Thus, those students, unfamiliar with STATA have to read Minkoff (2012) before the course starts. All participants have to read the first chapter of Blossfeld et al. (2007) as well as ***all*** journal articles mentioned under 6.2. in advance of the course.

7. Administration

7.1 Max. number of participants

20

7.2 Assignments

All assignments will be in-class assignments in which participants have to practically apply the content that has been presented on the respective day.

7.3 Exam

There will be no classical exam. Instead, students have to write a final paper after the course. In this paper, they have to present empirical EHA models. The data will be provided to them. The deadline for submitting the paper will be announced on time.

The evaluation of the students performance will be a “Pass” or “Fail” – no distinct grades. This evaluation will be based on the quality of the final paper (50%) as well as the students’ performance in the assignments (50%).

7.4 Credits

6 ECTS

8. Working Hours

Aufteilung der Arbeitsstunden / Working Hours	**HOURS**
Preparation (Reading) in advance of the course: Active Participation: Preparation during the course: Writing final paper	50 35 25 70
TOTAL	**180 h**