



Event-history analysis

TRAINING SESSION
organized by the

QUEBEC INTER-UNIVERSITY CENTRE FOR SOCIAL STATISTICS (QICSS)

Location: CIQSS, 3535 Queen-Mary Road, local 420, Montreal
Dates: May 29 to June 2, 2006

Financial support for this Data Training School is provided by the Social Sciences and Humanities Research Council of Canada, the Fonds québécois de la recherche sur la société et la culture and the universities affiliated to QICSS¹.

COURSE OBJECTIVES

This intensive training session deals with longitudinal analysis, with a strong focus on event history analysis. Emphasis will be placed both on theory and computer application of the method using data from the *Settlement of New Immigrants (SNI)* survey.

COURSE CONTENT

- **Longitudinal data description.** Presentation of the fundamentals of survival analysis and of single decrement life tables, that is, how to define and describe the dependent variable of all survival models. Presentation of multiple decrement life tables and of the analysis of trajectories.
- **Longitudinal analysis.** This portion of the course deals with **event history analysis** using semi-parametric regression models and piecewise exponential survival regression models. Emphasis will be placed both on theory and computer application of the method using data from the *Settlement of New Immigrants (SNI)* survey and data on criminal recidivism.

¹ Université de Montréal, INRS-UCS, McGill University, Concordia University, Université Laval, Université du Québec à Montréal, Université de Sherbrooke.

TRAINER

This training session will be under the responsibility of **John Sandberg**, assistant professor, Department of Sociology, McGill University.

GENERAL COURSE INFORMATION

The sessions are in English from **9 am to 5 pm**. In computer lab sessions, questions will be accepted, and supervision provided, in both languages. Assignments and term paper, for those who register to the seminar for full credits, are accepted in French or English. Morning sessions will be used for theoretical presentations and afternoon sessions will be reserved for computer exercises. Workshops are given using Stata. Assignments for those who register to the seminar for full credits are accepted in both French or English.

SCHEDULE

Day 1 :

- Basic Concepts in Survival Analysis: Event, Timing, Spell, Censoring and Truncation
- Introduction to the study on the Settlement of New Immigrants (SNI) and Recidivism Data with an emphasis on the collection of dated events.
- Workshop: Defining and operationalizing events, durations, and censoring using STATA. Descriptive methods. Exercise 1.

Day 2 :

- Life Tables and Survivor Functions.
- Workshop: Life Tables using STATA. Exercise 2.

Day 3 :

- Discrete-time analysis: logistic regression and a general introduction to regression methods.
- Introduction to parametric models, with an emphasis on the piecewise exponential model.
- Workshop: Logistic regression and discrete-time models. Exercise 3.
- Workshop: Piecewise exponential model. Exercise 4.

Day 4 :

- Semi-parametric proportional hazard models.
- Time-varying covariates. Exercises on Data construction.
- Workshop: Semi-parametric model: Cox regression. Exercise 5.
- Workshop: Time-varying covariates. Exercise 6.

Day 5 :

- Non-proportionality, stratification and interaction.
- Workshop. Interaction effects. Exercise 7.
- Recapitulative Workshop. Exercise 8.
- Student Evaluations.

READINGS

- Allison, Paul D. (1984). *Event history analysis: Regression for longitudinal event data*. Beverly Hills CA: Sage. (Quantitative applications in the social sciences).
- Aneshensel, Carol S. (2002). *Theory-based data analysis for the social sciences*. Pine Forge Press.
- Antoine, Philippe, Xavier Bry et Papa Demba Diouf (1987). « La fiche AGEVEN : un outil pour la collecte des données rétrospectives », *Techniques d'enquête*, 13(2) :173-181.
- Blossfeld, Hans-Peter, Alfred Hamerle et Karl Ulrich Mayer (1989). *Event history analysis: Statistical theory and application in the social sciences*. Hillsdale NJ : Lawrence Erlbaum Associates.
- Blossfeld, Hans-Peter and Götz Rohwer (2002). *Techniques of event history modeling : New approaches to causal analysis, second edition*. Mahwah NJ : Lawrence Erlbaum Associates.
- Courgeau, Daniel et Éva Lelièvre (1989). *Analyse démographique des biographies*. Paris : Éditions de l'Institut national d'études démographiques.
- Davis, James A. (1985). *The logic of causal order*. Thousand Oaks CA : Sage. (Quantitative applications in the social sciences).
- Freedman, Deborah, Arland Thornton, Donald Camburn, Duane Alwin and Linda Young-Marco (1988). "The life history calendar: a technique for collecting retrospective data", in C. C. Clogg (ed.), *Sociological Methodology 18*, pp. 37-68. Washington DC: American Sociological Association.
- Kaplan, E. L. et Paul Meier (1958) "Nonparametric estimation from incomplete observations", *Journal of the American Statistical Association*, 53: 457-481.
- McCullagh, P. and J. A. Nelder (1989). *Generalized linear models, second edition*. Chapman and Hall.
- Pressat, Roland (1973) *L'analyse démographique*. Paris, Presses universitaires de France, 321 p.
- Wunsch, Guillaume (1988). *Causal theory and causal modelling: Beyond Description in the Social Sciences*. Louvain-la-Neuve: Leuven University Press.

PARTICIPANTS PROFILE

The course is open to graduate students and postdoctoral fellows as well as to professors and practising researchers. Participants should have some working knowledge of regression models or lifetables prior to the course and a practical knowledge of a statistical package such as SAS, STATA or SPSS. The course is open to approximately 15 participants who will be selected on the basis of the relevance of the course to their curriculum, research, or teaching.

APPLICATION PROCEDURE

Those wishing to attend the course are invited to register on our website (<http://www.ciqss.umontreal.ca/>). Graduate students and postdoctoral fellows who are selected to participate will be eligible for a fellowship covering registration fees and, if they live outside the greater Montreal area, transportation costs as well as lodging in the student residences of the Université de Montréal.

Registration fees are **\$200 for students and postdoctoral fellows, \$300 for professors and researchers affiliated with QICSS, \$500 for other university professors and researchers and \$750 for individuals from any other category**. Registration fees must be paid by money order or cheque made out to: QICSS – Université de Montréal.

The application deadline for the course is **April 22, 2006**. The results will be announced during the week of **May 1, 2006**.

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