

Event History Analysis - SOC509
 Fall 2006
 W 10:40-1:30 PM
 3 credit hours
 Coor 5501

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Description

This course teaches you practical skills for interpreting and performing research using a variety of statistical techniques typically known as “event history analysis.” Other names for these techniques include survival analysis, hazard models, or failure time analysis. These techniques include a variety of approaches, both parametric and non-parametric, both single and multi-variate. We cover topics such as life tables, Kaplan-Meier estimates, parametric regression models, proportional hazard models, and discrete-time models. I emphasize practical, hands-on skills with computing exercises in all of the above.

Computing

I will be showing you how to use these techniques almost exclusively using SAS. You will need access to the unix stats machines (stats.asu.edu). If you currently do not have this access, you can sign up for this through www.asu.edu/asurite and subscribe to the service called “Statistics UNIX Cluster (stats.asu.edu).” Sign up as soon as possible. Once you do this, you will have access about 30 min later. Use SSH Secure Shell (<http://www.asu.edu/it/security/software/html/ssh/index.htm>) to connect to stats.asu.edu. It is possible to work with SAS on a Windows PC, but I cannot offer help with how to use this interface or transport data from unix to PC data formats--you're on your own.

In addition, increase your AFS quota to 50 MB. See <http://www.asu.edu/it/tempe/cac/accounts/quota.htm>

Course Calendar

Readings in brackets are optional/supplementary

Readings preceded by * will be presented by a class member

Date	Topic	Readings	Assignments
Aug 23	Introduction Event history data and structure	Allison p. 1-7 Allison p. 9-14, 22-27, Hosmer and Lemeshow Ch1 (skim p. 8-17), Freedman et al. (1988)	
Aug 30	Distribution functions; Lifetables Life tables; Kaplan-Meier	Allison p. 14-21, Blossfeld and Rohwer p. 31-37, Palmore & Gardner p. 35-58 Allison p. 29-60, Hosmer and Lemeshow Ch2 (focus on p. 27-39, 57-73)	Give Asn 1 (life tables by hand/spreadsheet)
Sep 6	Life tables & Kaplan-Meier - Applications Using SAS on unix & Life tables & Kaplan-Meier - with SAS	*Fortenberry et al. (2002), *Davidson et al. (2001), *Bhatia and Kim (1984), *Morabia et al. (2002)	Asn 1 due , Give Asn 2 (lifetables, KM with SAS)
Sep 13	Parametric Models - Introduction Parametric Models - Piecewise Exponential	Allison p. 61-109, Hosmer and Lemeshow Ch8	Asn 2 due , Give Asn3 (parametric models)
Sep 20	No class		
Sep 27	Parametric Models - Applications Parametric Models - with SAS	*Breen (1992), *Brewster(1994), *Olzak et al. (1996), *Ranger-Moore (1997)	
Oct 4	Cox Models - Introduction Cox Models	Allison p. 111-184, Hosmer and Lemeshow Ch 3-7 (focus on p. 87-111, 113-137, 248-253), [Cox (1972)]	Asn3 due , Give Asn4 (Cox models)

Oct 11	Cox Models - Applications Cox Models - with SAS	*Behrman, Sickles, and Taubman (1990), *Uggen and Janikula (1999), *Kunitz et al. (2002), *Kposowa et al. (1995)	Asn4 due Oct 15
Oct 18	Exam		
Oct 25	Discrete-time models - Introduction Discrete-time models - Time-varying covariates	Allison p. 211-231, [Allison (1982)]	Give Asn5 (discrete-time models)
Nov 1	Discrete-time models – Applications Discrete-time models - with SAS	*Kraatz and Zajac (1996), *Yabiku (2005), * South (2001), *Barber (2000)	
Nov 8	Discrete-time models Competing Risks	Allison p. 185-210, *Barber (2001)	Asn5 due
Nov 15	Repeated Events Heterogeneity	Allison p. 236-247 Allison p. 233-236, *Vaupel and Yashin (1985)	
Nov 22	Multilevel models Presentations	Axinn, Barber, and Ghimire (1997), *Yabiku (2004)	
Nov 29	Presentations		Final Paper Project Due

Texts and Readings:

Allison, Paul D. 1995. *Survival Analysis Using the SAS System: A Practical Guide*. Cary, NC: SAS Institute.
Hosmer, David W. and Stanley Lemeshow. 1999. *Applied Survival Analysis: Regression Modeling of Time to Event Data*. New York: Wiley.

I will also assign other selections from books and articles. All are available on JSTOR (www.jstor.org) except where noted.

* = will be presented by a class member.

= not available on JSTOR. See class website.

Allison, Paul D. 1982. "Discrete-Time Methods for the Analysis of Event Histories." *Sociological Methodology* 13: 61-98.

Axinn, William G., Jennifer S. Barber, and Dirgha J. Ghimire. 1997. "The Neighborhood History Calendar: A Data Collection Methods Designed for Dynamic Multilevel Modeling." *Sociological Methodology* 27: 355-392.

*Barber, Jennifer S. 2001. "Ideational Influences on the Transition to Parenthood: Attitudes toward Childbearing and Competing Alternatives." *Social Psychology Quarterly* 64: 101-127.

*Barber, Jennifer S. 2000. "Intergenerational Influences on the Entry into Parenthood: Mothers' Preferences for Family and Nonfamily Behavior." *Social Forces* 79: 319-348.

*Behrman, Jere R., Robin C. Sickles, and Paul Taubman. 1990. "Age-Specific Death Rates with Tobacco Smoking and Occupational Activity: Sensitivity to Sample Length, Functional Form, and Unobserved Frailty." *Demography* 27: 267-284.

*Bhatia, Shushum, and Young J. Kim. 1984. "Oral Contraception in Bangladesh." *Studies in Family Planning* 15: 233-241.

#Blossfeld, Hans-Peter and Gotz Rohwer. 2002. *Techniques of Event History Modeling: New Approaches to Causal Analysis*, Second Edition. Mahwah, NJ: Lawrence Erlbaum.

*Breen, Richard. 1992. "Job Changing and Job Loss in the Irish Youth Labour-Market: A Test of a General Model." *European Sociological Review* 8: 113-125.

- *Brewster, Karin L. 1994. "Race Differences in Sexual Activity Among Adolescent Women: The Role of Neighborhood Characteristics." *American Sociological Review* 59: 408-424.
- Cox, D.R. 1972. "Regression Models and Life Tables." *Journal of the Royal Statistical Society, Series B*, 20, 187-220.
- *#Davidson, Jonathan et al. 2001. "Efficacy of Sertraline in Preventing Relapse of Posttraumatic Stress Disorder: Results of a 28-Week Double-Blind, Placebo-Controlled Study." *American Journal of Psychiatry* 158: 1974-1981.
- *#Fortenberry, J. Dennis, Wanzhu Tu, Jaroslaw Harezlak, Barry P. Katz, and Donald P. Orr. 2002. "Condom Use as a Function of time in New and Established Adolescent Sexual Relationships." *American Journal of Public Health* 92: 211-213.
- Freedman, Deborah, Arland Thornton, Donald Camburn, Duane Alwin, and Linda Young-DeMarco. 1988. "The Life History Calendar: A Technique for Collecting Retrospective Data." *Sociological Methodology* 18: 37-68.
- *Kposowa, Augustine J, K. D. Breault, and Gopal K. Singh. 1995. "White Male Suicide in the United States: A Multivariate Individual-Level Analysis." *Social Forces* 74: 315-325.
- *Kraatz, Matthew S. and Edward J. Zajac. 1996. "Exploring the Limits of the New Institutionalism: The Causes and Consequences of Illegitimate Organizational Change." *American Sociological Review* 61: 812-836.
- *#Kunitz, Stephen J., W. Gill Woodall, Hongwei Zhao, Denise R. Wheeler, Robert Lillis, and Everett Rogers. 2002. "Rearrest Rates After Incarceration for DWI: A Comparative Study in a Southwestern US County." *American Journal of Public Health* 92: 1826-1831.
- *#Morabia, Alfredo, Michael C. Costanza, Martine S. Bernstein, and Jean-Charles Rielle. 2002. "Ages at Initiation of Cigarette Smoking and Quit Attempts Among Women: A Generation Effect." *American Journal of Public Health* 92: 71-74.
- *Olzak, Susan, Suzanne Shanahan, and Elizabeth H. McEneaney. 1996. "Poverty, Segregation, and Race Riots: 1960 to 1993." *American Sociological Review* 61: 590-613.
- #Palmore, James A. and Robert W. Gardner. 1994. *Measuring Mortality, Fertility, and Natural Increase: A Self Teaching Guide to Elementary Measures*. Honolulu: East-West Center.
- *Ranger-Moore, James. 1997. "Labor Markets in Japan and the United States: Bigger May be Better, But is Older Wiser? Organizational Age and Size in the New York Life Insurance Industry." *American Sociological Review* 62: 903-920.
- *South, Scott J. 2001. "Time-Dependent Effects of Wives' Employment on Marital Dissolution." *American Sociological Review* 66: 226-245.
- *Uggen, Christopher, and Jennifer Janikula. 1999. "Volunteerism and Arrest in the Transition to Adulthood." *Social Forces* 78: 331-362.
- *Vaupel, James W. and Anatoli I. Yashin. 1985. "Heterogeneity's Ruses: Some Surprising Effects of Selection on Population Dynamics." *The American Statistician* 39: 176-185.
- *#Yabiku, Scott T. 2005. "The Effect of Non-family Experiences on Age of Marriage in a Setting of Rapid Social Change." *Population Studies* 59: 339-354.
- *Yabiku, Scott T. 2004. "Marriage Timing in Nepal: Organizational Effects and Individual Mechanisms." *Social Forces* 83:559-586.

Description of Course Requirements:

The course requirements include 5 homework assignments, a midterm, leading class discussion on one or more articles, and a final paper project. In the final paper project, you will analyze data using an event history approach; the topic and data are your choice. You will also briefly present your findings to the class. Final projects are individual, not group work.

Grading:

The grade is determined by the following components:

Homework (30%)

Midterm Exam (30%)

Final Paper Project (30%)

Participation and Presentations (10%)

Once a final percentage is calculated, a letter grade is assigned: A=91-100%, B=81-90%, C=71-80%, D=61-70%, E=60% and less. I do not assign plus/minus grades. The evaluation of work follows the standard University definitions:

A=Excellent, B=Good, C=Average, D=Passing, E=Failure.

Note: These letter grade thresholds may be adjusted downward (i.e., to your advantage). They will not be adjusted higher.

Prerequisites:

Experience with regression models and data analysis is required. An example of this is a course such as SOC505 (Applied Regression Analysis). Ask me if you have any questions about whether or not the course will be appropriate for you.

Other Relevant Course policies:

Missed exams and late assignments:

I will not accept missed exams or late assignments without penalty.

Missed classes due to university-sanctioned activities:

Academic Affairs Policy Manual, 304-02: "Students who participate in university-sanctioned activities that require classes to be missed, should be given opportunities to make up examinations and other graded in-class work. However, absence from class or examinations due to university-sanctioned activities does not relieve students from responsibility for any part of the course work required during the period of the absence. ... Students should inform their instructors early in the semester of required class absences."

Class participation and attendance:

I will not keep a formal record of attendance. Keep in mind, however, that attending class, participating in discussions, and asking questions during class will help you learn.

Extra credit:

There is no extra credit.

Academic dishonesty:

It is a serious violation to cheat on exams, hand in work that is not your own, or plagiarize others' materials.

Working on homework together, of course, is acceptable and a good way to learn. But copying others' work without contributing is not a good way to learn.

Disability Accommodation:

Students with disabilities must identify themselves before the end of the second week of class.

Changes:

This syllabus is subject to changes; any changes will be both announced in class and posted on the class web page.