

POL 217/290G: Topics in Political Methodology

Winter 2007

Seminar: W 12:00–3:00, Social Sciences 273

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Course Description

This course is a special topics seminar in political methodology. In general, my goal is to cover two broad types of modeling strategies. The first involves estimation of statistical models when one is working with categorical data, in particular, categorical data where the response variable can have multiple scores. The second general topic will deal with models for duration data. Here, we will consider the case when one is working with response variables measuring the timing of political or social events. Each of these topics have wide applicability to the social sciences, especially political science. By way of prerequisites, I assume extensive knowledge of the classic linear model as well as a strong understanding of the principles of maximum likelihood estimation and some associated models typically estimated with MLE (such as logit/probit regression). Additionally, I assume the student is well-versed in issues pertinent to regression diagnostics and functional form. If you have not had exposure to MLE, you should not take this course at this time.

Course Requirements

There are a variety of readings assignments the student will be expected to complete in a timely fashion. Additionally, several problem sets will be assigned during the course. Finally, each student must make the following choice: exam or paper. The intent of the exam option is to help prepare students for the methods qualifying exam (though it is critical to note that I am not the only faculty member to ask questions on a methods exam). The intent of the paper project is for the student to produce a conference-quality or (ideally) publication-quality paper in this course. The papers should employ some of the modeling strategies considered in this course. As far as software packages are concerned, as long as you can solve the problems sets and produce a high-quality paper, I don't care which program you use. You will note from lectures and lecture notes, however, I have a personal bias toward R and Stata. Further, because R is an open-source environment, there is considerably high utility in learning to work within this environment. As far as your grade break-down goes, problem sets will account for 50 percent of your total grade, the paper/exam will account for 40 percent of your total grade, and participation (beyond breathing) will

account for 10 percent of the grade. “Participation” scores will be based on discussion and the presentation of one or two scholarly articles during the quarter.

Readings

The primary books we will use in this class are:

Powers and Xie’s *Statistical Methods for Categorical Data Analysis*. 2000. Academic Press.

Box-Steffensmeier and Jones’ *Event History Modeling: A Guide for the Social Sciences*. 2004. Cambridge University Press.

There are several other books I have made available for purchase and are recommended. They are:

Collett’s *Modelling Survival Data in Medical Research, 2nd ed.* 2003. Chapman and Hall.

Everitt and Hothorn’s *A Handbook of Statistical Analyses Using R*. 2006. Chapman and Hall.

Simonoff’s *Analyzing Categorical Data*. 2003. Springer.

Van der Ark et. al’s *New Developments in Categorical Data Analysis*. 2005. Lawrence Erlbaum Associates.

In addition to these books, several articles will be assigned. Most of these articles will be available on JStor (www.jstor.org).

Course Requirements

Course Itinerary

Jan. 3 Preliminaries: Categorical Response Variables, MLE, and Some Basic Concepts

Readings: Powers and Xie, Chapters 1–3.

Simonoff, Chapters 1–2, 4, 9.

Everitt and Hothorn, Chapters 1, 6.

Jan. 10, 24, 31 Models for Ordinal and Nominal Outcomes: Extensions Beyond Conventional Practices

Readings: Powers and Xie, Chapters 6–7.

Simonff, Chapter 10.

Statistical Articles:

Anderson, J.A. 1984. "Regression and Ordered Categorical Variables." *Journal of the Royal Statistical Society B*.

Brant. 1990. "Assessing Proportionality in the Proportional Odds Model for Ordinal Logistic Regression." *Biometrics*. 46: 1171–1178.

Jones and Westerland. n.d. "Order Matters(?): Alternatives to Conventional Practices for Ordinal Categorical Response Variables." Unpublished manuscript available on my website.

Peterson and Harrell. "Partial Proportional Odds Models for Ordinal Response Variables." *Applied Statistics*. 39: 205–217.

Illustration of Generalized Ordinal Logit Model:

Branton and Jones. 2005. "Reexamining Racial Attitudes: The Conditional Relationship between Diversity and Socioeconomic Environment." *American Journal of Political Science*. 49: 359-372.

Illustrations of Continuation Ratio/Sequential Logit:

Breen and Johnson. 2000. "Analyzing Education Careers: A Multinomial Transition Model." *American Sociological Review*. 65: 754–772.

McVeigh, Welch, and Bjarnason. 2003. "Hate Crime Reporting as a Successful Social Movement Outcome." *American Sociological Review*. 68: 843–867.

Illustration of Adjacent Category Logit:

Baxter and Wright. 2000. "The Glass Ceiling Hypothesis: A Comparative Study of the United States, Sweden, and Australia." *Gender and Society*. 14: 275–294.

Illustrations of Multinomial Logit, Nested Logit and Conditional Logit Models:

Adams and Merrill. 2003. "Voter Turnout and Candidate Strategies in American Elections." *Journal of Politics*. 65: 161–189.

Glasgow. 2005. "Evidence of Group-Based Economic Voting: NAFTA and Union Households in the 1992 U.S. Presidential Election." *Political Research Quarterly*. 58: 427–434.

Dow and Endersby. 2004. "Multinomial Probit and Multinomial Logit: A Comparison of Choice Models for Voting Research." *Electoral Studies*. 23: 107–122.

Paolino. 2005. "Voter Behavior in Democratizing Nations: Reconsidering the Two-Step Model." *Political Research Quarterly*. 58: 107–117.

Feb. 7 Models for Counts

Readings: Simonoff, Chapters 4–5.

Cameron and Trivedi. 1986. "Econometric Models Based on Count Data: Comparisons and Applications of Some Estimators and Tests." *Journal of Applied Econometrics*. 1: 29–53.

Zorn. 1998. "An Analytic and Empirical Examination of Zero-Inflated and Hurdle Poisson Specifications." *Sociological Methods and Research*. 26: 368–400.

Illustrations:

Boehmke. 2005. "Sources of Variation in the Frequency of Statewide Initiatives: The Role of Interest Group Populations." *Political Research Quarterly*. 58: 565–575.

Carroll and Swaminathan. 2000. "Why the Microbrewery Movement? Organizational Dynamics of Resource Partitioning in the U.S. Brewing Industry." *American Sociological Review*. 106: 715–762.

Clark. 2003. "Can Strategic Interaction Divert Diversionary Behavior? A Model of U.S. Conflict Propensity." *Journal of Politics*. 65: 1013–1039.

Isaac and Christiansen. "How the Civil Rights Movement Revitalized Labor Militancy." *American Sociological Review*. 67: 722–746.

van Dyke and Soule. 2002. "Structural Social Change and the Mobilizing Effect of Threat: Explaining Levels of Patriot and Militia Organizing in the United States." *Social Problems*. 49: 497–520.

Feb. 14 Models for Events Data: Preliminaries and Parametrics

Readings: Box-Steffensmeier and Jones, Chapters 1–3, 11.

Collett, Chapters 1–2, 5–6.

Everitt and Hothorn, Chapter 9.

Kaplan and Meier. 1958. "Nonparametric Estimation from Incomplete Observations." *Journal of the American Statistical Association*. 53: 457–481.

Illustrations:

Kadera, Crescenzi, and Shannon. 2003. "Democratic Survival, Peace, and War in the International System." *American Journal of Political Science*. 47: 234–247.

Slantchev. 2004. "How Initiators End Their Wars: The Duration of Warfare and the Terms of Peace." *American Journal of Political Science*. 48: 813–829.

Feb. 21 Semi-Parametric and Discrete-Time Models

Readings: Box-Steffensmeier and Jones, Chapters 4–7

Collett, Chapters 3–4, 8.

Beck, Katz, and Tucker. 1998. "Taking Time Seriously: Time-Series-Cross-Section Analysis with a Binary Dependent Variable." *American Journal of Political Science*. 42: 1260–1288.

Bennett. 1999. "Parametric Models, Duration Dependence, and Time-Varying Data Revisited." *American Journal of Political Science*. 43: 256–270.

Cox. 1972. "Regression Models and Life-Tables" *Journal of the Royal Statistical Society, Series B (Methodological)*. 34: 187–220.

Illustrations of Cox Model:

Druckman and Theis. 2002. "The Importance of Concurrence: The Impact of Bicameralism on Government Formation and Duration." *American Journal of Political Science*. 46: 760–771.

Greve, Fujiwara-Greve. 2003. "Job Search with Organizational Size as a Signal." *Social Forces*. 643–669.

Hegre, Ellingsen, Gates, and Gleditsch. 2001. "Toward a Democratic Civil Peace? Democracy, Political Change, and Civil War, 1816-1992." *American Political Science Review*. 95: 33–48.

Katz and Sala. 1996. "Careerism, Committee Assignments, and the Electoral Connection." *American Political Science Review*. 90: 21–33.

Maltzman and Binder. 2002. "Senatorial Delay in Confirming Federal Judges, 1947-1998." *American Journal of Political Science*. 46: 190–199.

Illustrations of Discrete-Time/Piecewise Models:

Berry and Berry. 1990. "State Lottery Adoptions as Policy Innovations: An Event History Analysis." *American Political Science Review*. 84: 395–415.

Sorenson. 2000. "The Longitudinal Effects of Group Tenure Composition on Turnover." *American Sociological Review*. 65: 298–310.

Feb. 28 Diagnostics for Cox and Parametric Models Readings: Box-Steffensmeier and Jones, Chapters 4, 8.

Collett, Chapter 4, 7.

Box-Steffensmeier and Zorn. 2003. "Nonproportional Hazards and Event History Analysis in International Relations." *The Journal of Conflict Resolution*. 47: 33–53.

Mar. 7–14 Complicated Events Data

Readings: Box-Steffensmeier and Jones, Chapters 9–10

Ezell, Land, and Cohen. 2003. "Modeling Multiple Failure Time Data: A Survey of Variance-Corrected Proportional Hazards Models with Empirical Applications to Arrest Data." *Sociological Methodology*. 33: 111–167.

Illustrations of Repeated Events:

Okamoto. 2003. "Toward a Theory of Panethnicity: Explaining Asian American Collective Action." *American Sociological Review*. 811–842.

Illustrations of Competing Risks:

de Graaf and Kalmijn. 2003. "Alternative Routes in the Remarriage Market: Competing-Risk Analyses of Union Formation after Divorce." *Social Forces*. 81: 1459–1498.

Diermeier and Stevenson. 1998. "Cabinet Survival and Competing Risks." *American Journal of Political Science*. 43: 1051–1068.

Hanushek, Kain, Rivkin. 2004. "Why Public Schools Lose Teachers." *Journal of Human Resources*. 39: 326–354.

Zorn and Van Winkle. 2000. "A Competing Risks Model of Supreme Court Vacancies, 1789-1992." *Political Behavior*. 22: 145–166.