

SOCIOLOGY 570B: SOCIAL STATISTICS
Fall 2013
Tuesday/Thursday, 2-3:15pm
Social Sciences Building, Room 415

"Scientific knowledge is a body of statements of varying degrees of certainty – some most unsure, some nearly sure, but none absolutely certain."
~ Richard Feynman 1988, p. 245

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In this course we will explore three of the most widely used advanced statistical methods in the social sciences: hierarchical linear modeling (HLM), also known as multi-level modeling; event history analysis (EHA); and structural equation modeling (SEM). We will also learn logistic regression and possible extensions to other categorical outcome techniques because it was not covered in SOC 570a. Each of these techniques has been developed to handle situations, data structures, outcomes, and research questions that are difficult, inappropriate, or impossible to handle using typical regression models (both linear and categorical).

READINGS

1. Required books -

- Judith D. Singer and John B. Willett (2003). *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence*. Oxford: Oxford University Press.
- Ken Bollen (1989). *Structural Equations with Latent Variables*. New York: Wiley.
- J. Scott Long and Jeremy Freese (2006). *Regression Models for Categorical Dependent Variables Using Stata*, Second Edition. College Station, TX: Stata Press.

2. Books recommended for purchase -

- Anthony S. Bryk and Stephen W. Raudenbush (2002). *Hierarchical Linear Models: Applications and Data Analysis Methods*. Newbury Park, CA: Sage.

3. Other readings -

- All readings from non-required texts and other sources are available on D2L and/or the Sociology library.

REQUIREMENTS

Quiz	10%
7 application papers (5% each)	35%
Lead discussion of one application paper	5%
Homework Assignments (to be handed out regularly)	25%
Final Project	25%

CLASS SCHEDULE

Tuesday, August 27 – Introduction

Thursday, August 29 – Data management in STATA
<http://www.ats.ucla.edu/stat/stata/sk/default.htm>

Tuesday, September 3 – Data management in STATA

Hierarchical Linear Modeling (HLM)

Thursday, September 5 – Introduction to HLM for Context
Bryk and Raudenbush, pp. 3-10; chp 2

Tuesday, September 10 – HLM for Context
Bryk and Raudenbush, pp. 99-130

Thursday, September 12 – HLM for Context

Reynolds, Jeremy (2006). "Teams, Teams Everywhere?: The Use of Work Teams within U.S. Establishments." *Social Science Research*, 35(1) 252-278.

Mencarini, Letizia and Maria Sironi (2012). "Happiness, Housework and Gender Inequality in Europe." *European Sociological Review* 28(2): 203-219.

Paxton, Pamela (2007). "Association Memberships and Generalized Trust: A Multilevel Model Across 31 Countries." *Social Forces* 86(1): 47-76.

Pettit, Becky and Jennifer Hook (2005). "The Structure of Women's Employment in Comparative Perspective." *Social Forces* 84(2): 779-801.

Tuesday, September 17 – Introduction to HLM for Change
Singer and Willett, chapter 2

Thursday, September 19 – NO CLASS

Tuesday, September 24 – HLM for Change
Singer and Willett, chapters 3 & 4

Thursday, September 26 – HLM for Change

Raz-Yurovich, Liat (2013). "Divorce Penalty or Divorce Premium? A Longitudinal Analysis of the Consequences of Divorce for Men's and Women's Economic Activity." *European Sociological Review* 29(2): 373-385.

Ready, Douglas D. (2010). "Socioeconomic Disadvantage, School Attendance, and Early Cognitive Development" *Sociology of Education* 83(4): 271-286.

Linebarger, Deborah L; Walker, Dale (2005). "Infants' and Toddlers' Television Viewing and Language Outcomes." *American Behavioral Scientist* 48(5): 624-645.

STRUCTURAL EQUATION MODELING (SEM)

Tuesday, October 1 – Matrix Algebra
Bollen, pp. 449-465 *and/or*
Maruyama, "A Brief Introduction to Matrix Algebra and Structural Equation Modeling," Appendix A (pp. 285-293) in Basics of Structural Equation Modeling, Sage 1998.

Thursday, October 3 – Introduction to Structural Equation Modeling
Bollen, chapter 2
Maruyama, "History and Logic of Structural Equation Modeling" pp. 15-24 in *Basics of Structural Equation Modeling*, Sage 1998.

Tuesday, October 8 – Quiz

Thursday, October 10 – Simultaneous Equation Modeling (Path Analysis)
Bollen, chapter 4

Tuesday, October 15 – Simultaneous Equation Modeling (Path Analysis)

Kalmijn, Matthijs (2013). "Through a Dark Lens: Effects of Depressed Mood on Perceived Equity in Intergenerational Relationships." *Social Science Quarterly* 94(2): 424-444.

Kunovich, Sheri, and Pamela Paxton (2005). "Pathways to Power: The Role of Political Parties in Women's National Political Representation." *American Journal of Sociology* 111(2): 505-552.

Lively, Kathryn (2008). "Emotional Segues and the Management of Emotion by Women and Men." *Social Forces* 87(2): 911-936.

Thursday, October 17 – Confirmatory Factor Analysis
Bollen, chapter 7

Tuesday, October 22 – Confirmatory Factor Analysis

Jacob Cheadle and Paul Amato (2011). "A Quantitative Assessment of Lareau's Qualitative Conclusions About Class, Race, and Parenting." *Journal of Family Issues* 32(5): 679-706.

Wim van Oorschot and Bart Meuleman (2012). "Welfarism and the multidimensionality of welfare state legitimacy: Evidence from The Netherlands, 2006." *International Journal of Social Welfare* 21(1): 79-93.

Gerda Visser-Wijnveen, Ann Stes, and Peter Petegam (2012). "Development and validation of a questionnaire measuring teachers' motivations for teaching in higher education." *Higher Education* 64(3): 421-436.

Thursday, October 24 –The General SEM Model
Bollen, chapter 8

Tuesday, October 29 – The General SEM Model

Gulfidan Can and Andrew Walker (2011). "A Model for Doctoral Students' Perceptions and Attitudes Toward Written Feedback for Academic Writing." *Research in Higher Education* 52(5): 508-536.

Katerina Bodovski and Min-Jong Youn (2010). Love, discipline and elementary school achievement: The role of family emotional climate. *Social Science Research* 39.4 (Jul 2010): 585-595.

Elizabeth Vandewater and Jennifer Lansford (2005). "A Family Process Model of Problem Behaviors in Adolescents." *Journal of Marriage and the Family* 67(1), 100-109.

Thursday, October 31 – Multiple Group Analysis
Bollen, pp. 350-369

Tuesday, November 5 –

Thursday, November 7 – Extensions: Multiple Group Analysis

Catherine Harnois (2005). "Different Paths to Different Feminisms? Bridging Multiracial Feminist Theory and Quantitative Sociological Gender Research." *Gender & Society*, 19(6): 809-828.

Gal Ariely and Eldad Davidov (2011). "Can we Rate Public Support for Democracy in a Comparable Way? Cross-National Equivalence of Democratic Attitudes in the World Value Survey." *Social Indicators Research* 104(2) (Nov 2011): 271-286.

Bart Meuleman, Eldad Davidov, Jaak Billiet (2009). "Changing attitudes toward immigration in Europe, 2002-2007: A dynamic group conflict theory approach." *Social Science Research* 38(2): 352-365.

LOGISTIC REGRESSION

Tuesday, November 12 – Binary Logistic Regression

Thursday, November 14 – Binary Logistic Regression

Tuesday, November 19 – Binary Logistic Regression

Thursday, November 21 – Ordinal and Multinomial Logistic Regression

Tuesday, November 26 –

EVENT HISTORY ANALYSIS

Thursday, November 28 – NO CLASS, Happy Thanksgiving!

Tuesday, December 3 – Discrete-Time Event History Analysis
Singer and Willett, chapters 1 and 9

Thursday, December 5 – Discrete-Time Event History Analysis
Singer and Willett, chapters 10 and 11

Tuesday, December 10 –

Singer and Willett, chapter 12: sections 12.1, 12.3, 12.4, and 12.5
Application paper

McKernan, Signe-Mary, and Caroline Ratcliffe (2005). "Events That Trigger Poverty Entries and Exits." *Social Science Quarterly*, 86 (supplement): 1146-1169.

Barrett, Deborah ; Kurzman, Charles ; Shanahan (2010). "For Export Only: Diffusion Professionals and Population Policy." *Social Forces* 88(3): 1183-1207.

McCammon, Holly J ; Campbell, Karen E ; Granberg, Ellen M ; Mowery, Christine (2001). "How Movements Win: Gendered Opportunity Structures and U.S. Women's Suffrage Movements, 1866 to 1919." *American Sociological Review* 66(1): 49-70.

Thursday, November 28 – NO CLASS, Happy Thanksgiving!

Tuesday, December 3 –

Thursday, December 5 –

Tuesday, December 10 –

Possible application papers

CFA

PATH ANALYSIS

GENERAL SEM