

POLS 500c: Regression Analysis

Fall 2008

TTh 8:15-9:30 am, 3075 Faner Hall

Prof. Frederick Solt

Office: 3166 Faner Hall

Office Hours: TTh 9:30-11:30 am, 2:00-3:00 pm

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Overview

This course covers in depth the ‘workhorse’ of quantitative research in the social sciences, linear regression, and also introduces you to several of its extensions. Our objective will be for you to gain sufficient familiarity with the techniques and assumptions of regression analysis to (1) read and understand others’ work, (2) pursue your own quantitative research, (3) establish a foundation for future acquisition of more advanced methods as needed.

Requirements

Your grade will be based on the following:

Problem Sets	30% (6 problem sets, 5% each)
Midterm	25%
Research Paper	25%
Poster	10%
Class Participation	10%

Your research paper may be done in conjunction with another course, but it must be original, single-authored research and it must apply material from this class. It should be modeled on an empirical research article in a social science journal. Consistent with our department tradition, you will also create a poster displaying your research findings and suitable for presentation at a professional conference.

Readings

There are no required books for this class; all of the readings are available online at the links below or, if starred, from the course page on [Blackboard](#). You should print out the readings and bring them to class with you on the days they are assigned.

Class Schedule

Weeks 1 & 2

Topic: Introduction

Reading:

1. *Van Evera, Stephen. 1997. *Guide to Methods for Students of Political Science*. Ithaca: Cornell University Press. Pp. 7-48.

Weeks 3, 4, & 5

Topic: Multiple Regression—Estimation, Inference, and Hypothesis Testing

Reading:

1. *Gelman, Andrew, and Jennifer Hill. 2007. Linear Regression: The Basics. In *Data Analysis Using Regression and Multilevel/Hierarchical Models*. Cambridge: Cambridge University Press. Pp. 31-51.

Week 6

Topic: Interactions and Nonlinear Predictors

Reading:

1. [Brambor, Thomas, William Roberts Clark, and Matt Golder. 2006. "Understanding Interaction Models: Improving Empirical Analyses." *Political Analysis* 14\(1\):63-82.](#)

Weeks 7 & 8

Topic: Assumptions & Violations

Reading:

1. *Fox, John. 1991. *Regression Diagnostics*. Sage University Paper Series on Quantitative Applications in the Social Sciences, 07-079. Newbury Park, California: Sage. Pp. 10-40.

Tuesday, Oct 14, Midterm Examination

Weeks 9 & 10

Topic: Nonlinear Models—Dichotomous & Ordinal Dependent Variables

Readings:

1. *King, Gary. 1989. Discrete Regression Models. In *Unifying Political Methodology: The Likelihood Theory of Statistical Inference* Ann Arbor: University of Michigan Press. Pp. 97-132.
2. Berry, William, and Jacqueline Rubin. 2007. “How to Test for Interaction in Models with Binary Dependent Variables.” Society for Political Methodology Working Paper.

Week 11 & 12

Topic: Interpreting and Presenting Results

Readings:

1. King, Gary, Michael Tomz, and Jason Wittenberg. 2000. “Making the Most of Statistical Analyses: Improving Interpretation and Presentation.” *American Journal of Political Science* 44(2):347-361.
2. Kastellec, Jonathan P., and Eduardo Leoni. 2007. “Using Graphs Instead of Tables to Improve the Presentation of Empirical Results in Political Science.” *Perspectives on Politics* 5(4):755-771.

Weeks 13 & 14

Fall Break

Assignment: Work on Paper & Poster

Weeks 15 & 16

Assignment: In-Class Poster Presentations