Political Science 618

Advanced Empirical Methods

Syllabus, Winter 2014

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Prerequisites: Students should have a basic understanding of statistical methods in political science. At an absolute minimum, they should have some undergraduate training in statistical methods; some basic graduate training is ideal (e.g., PoliSci 612).

Objectives: The course aims to (1) offer an introduction to applied regression techniques common in political science, (2) provide an introduction to STATA – a statistical software package that is particularly well-suited for advanced regression techniques and complicated survey data, and (3) introduce students to selected political science issues that have been addressed with empirical methods.

Subject Matter & Readings: Each weekly seminar deals with a *Method*, an *Issue*, and a *Dataset*. *Methods* are, predictably, statistical topics, such as ordinary least squares regression, or the difficulties with heteroskedasticity. Each method is exemplified using a particular *Issue*, however. So we might discuss logit and probit models by reading the literature on voting; we might learn to use these models by replicating (and possibly overturning) some published analyses on that topic. Issues are selected keeping in mind (1) the interests of students taking the course, and (2) recent and particularly illustrative debates in the political science literature.

There are weekly readings on both *Methods* and *Issues*; seminars will proceed on the assumption that students have read both, and participation grades are determined based on students' discussion and critique of both the methods and issues readings.

In addition, each week we work with a new *Dataset*. We generally use the same dataset as is used in our *Issue* readings, available either online or provided by the authors. This way, we can replicate and then examine the models more closely. And of course we also gain experience in working with and managing data.

Students are encouraged to buy the following text, available at the University Bookstore: Peter Kennedy, *A Guide to Econometrics*, 5th or 6th ed. (Cambridge MA: The MIT Press). Additional statistical readings will be drawn from the Sage Series in Quantitative Methods in the Social Sciences. Readings on substantive issues are drawn either from books on reserve, or from journal articles available online. All readings (except the Kennedy book) are available on MyCourses.

Requirements: There is no final exam, but there are 2 assignments over the first eight weeks, and a research project that will be prepared and presented over the last four weeks of the course. Students do not need to present finished work – only a review of the literature (empirical and otherwise), working hypotheses, and some preliminary models on a subject of their choice. (Speaking about empirical methods can be difficult. The presentation is included to give students a chance to practice this skill.) The written assignment itself should take the form of a journal submission. Students are encouraged to use the research project as an opportunity to start work on their thesis, or to work on a potentially publishable paper. The class should be regarded as a forum for getting particularly advice and criticism. (You will assign other students some readings, and they will have an opportunity to work with your data). Further information about this project will be given in class. Course grades are based on the following: class participation (15%); weekly assignments (40%); research project presentation (10%), and research project (35%).

Further Details: The Week 1 seminar will be a class discussion with some pencil-and-paper work; Week 8 will also not require computers. For all other weeks, classes will be held as labs, with computers. These classes will includes both group discussion, and work at computers. Datasets will be made available to students via MyCourses. The final weeks of the course are set aside for student presentations – the readings and datasets will be selected by the students who will be presenting that week. Any additional time is used to cover other methods relevant to students' research interests.

McGill University values **academic integrity**. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.mcgill.ca/students/srr/honest/ for more information).

Submission and formatting guidelines: All papers must be **single-spaced**, with **one-inch margins**, using **12-pt Times New Roman font**. They must use **in-text citations**, and must include a **bibliography**. The bibliography is not included in the page length, but any other text that goes over the limit will not be read. Do not create a separate title page, just put the title and your name at the top of the first page of text. Papers submitted in **pdf format** only (not Word!), online via MyCourses. There will be no exceptions to these rules, and grades will be reduced when these guidelines are not followed.

PART 1: Introduction

Week 1

Method: **What Exactly is Regression? (Bring a Pencil)**
Kennedy, Chapter 1.
Michael S. Lewis-Beck. 1980. *Applied Regression*: An Introduction (Beverly Hills: Sage).

Issue: n/a

Data: n/a

Week 2

Method: **Intro to STATA**
Achen, Christopher H.. 1982. *Interpreting and Using Regression* (Beverly Hills: Sage).
Stata Intro, on MyCourses.

Issue: **Comparative Political Institutions: Consensus and Majoritarian Democracy**
Lijphart, Arend. 1999. *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries* (Cambridge MA: Yale University Press).

Data: Lijphart Data.

PART 2: The Classical Linear Regression Model

Week 3

Method: **Multivariate Regression: Ordinary Least Squares**
Kennedy, Chapters 2 (Criteria for Estimators) and 3 (The Classical Linear Regression Model).
Berry , William D. and Stanley Feldman. 1985. *Multiple Regression in Practice* (Beverly Hills: Sage).

Issue: **Political Culture and Value Change**
Inglehart, Ronald. 1997. Selections from *Modernization and Postmodernization: Cultural, Economic, and Political Change in 43 Societies*. Princeton NJ: Princeton University Press.
Nevitte, Neil. 1996. Selections from *The Decline of Deference: Canadian Value Change in Cross-National Perspective*. Toronto: Broadview Press.

Data: World Values Survey.

Week 4

Method: **Dummy Variables, Interactions, Simple Adjustments for Non-Linearity, and How to Understand Your Results**

Kennedy, on "Nonlinearity"and on "Dummy Variables"
Jaccard, James, Robert Turrisi, and Choi K. Wan. 1990. *Interaction Effects in Multiple Regression* (Beverly Hills: Sage).
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).

Issue: **Campaign Spending - Effects, or the Lack Thereof**
Jacobson, Gary C. 1978. "The Effects of Campaign Spending in Congressional Elections." *American Political Science Review* 72:769-83
Green, Donald Philip and Jonathan S. Krasno. 1988. "Salvation for the Spendthrift Incumbent: The Effects of Campaign Spending in House Elections." *American Journal of Political Science* 32(4):884-907.

Data: Green & Krasno data.

PART 3: Problems (and Solutions)

Week 5

Method: **Basic Regression Diagnostics: Multicollinearity, Heteroskedasticity et al.**
Kennedy, on "Heteroskedasticity" and "Multicollinearity".
Fox, John. 1991. *Regression Diagnostics: An Introduction* (Beverly Hills: Sage).

Issue: **Electoral and Party Systems**
Ordeshook, Peter C. and Olga V. Shvetsova. 1994. "Ethnic Heterogeneity, District Magnitude, and the Number of Parties." *American Journal of Political Science* 38(1):100-123.
Neto, Octavio Amorim and Gary W. Cox. 1997. "Electoral Institutions, Cleavage Structures, and the Number of Parties." *American Journal of Political Science* 41(1):149-174.

Data: Neto & Cox Data.

Week 6

Method: **Binary Dependent Variables: Logit and Probit**
Kennedy, on "Dichotomous Dependent Variables".
Aldrich, John and Forrest Nelson. 1984. *Linear Probability, Logit, and Probit Models* (Beverly Hills: Sage).
Also see: Hagle, Timothy M. and Glenn E. Mitchell II. 1992. Goodness-of-Fit Measures for Probit and Logit." *American Journal of Political Science* 36(3): 762-784.

Issue: **Deterrence**

Huth, Paul K. 1988. "Extended Deterrence and the Outbreak of War." *American Political Science Review* 82: 423-443.

Data: Huth Data.

Week 7

Method: **Categorical Dependent Variables: Ordered and Multinomial Logit and Probit**

Kennedy, on "Polychotomous Dependent Variables" and "Ordered Logit/ Probit".

Borooah, Vani Kant. 2000. *Logit and Probit: Ordered and Multinomial Models* (Beverly Hills: Sage).

Issue: **Voting Behaviour**

Whitten, Guy D. and Harvey D. Palmer. 1996. "Heightening Comparativists' Concern for Model Choice: Voting Behavior in Great Britain and the Netherlands." *American Journal of Political Science* 40(1):231-260.

Dow, Jay K. and James W. Endersby. 2004. "Multinomial Probit and Multinomial Logit: A Comparison of Choice Models for Voting Research." *Electoral Studies* 23: 107-122.

Data: Comparative Study of Electoral Systems, 1996-2001.

Week 8

Review

Before moving on to time series, and then to presentations, we spend this week reviewing methods from past weeks. This class is not in the lab – it's a pencil-and-paper review.

Issue: n/a

Data: n/a

Week 9

Selected Topics

We've spent this week in past years on an introduction to time series analysis, but I'm open to other topics depending on what the class is interested in. We might look at ANOVAs, or at factor analysis, for instance. This class is in the lab.

Issue: TBA

Data: TBA

Weeks 10-12 **Project Presentations**