QUANTITATIVE POLITICAL & POLICY ANALYSIS
POLSCI 784
Term 2, Winter 2019

Instructor: Dr. Michelle L. Dion
Lecture: Monday, 14:30 - 17:20
Classroom: LRW 5012
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Office Hours: Book a virtual (phone, FaceTime or Skype) or in-office (KTH 533) appointment:

- online (http://michelledion.com/) or
- in-person (before or after class)

Contents

Course Description

This is an <u>introductory</u> graduate course in empirical research and statistical methods. For MA students, the intention is to provide you with basic statistical skills and familiarity for use on the job market. For PhD students, the goal is to provide a basic foundation for more advanced coursework or applications in your research. For some of you, the material presented in this course will be the beginning of a radically new way to approach research. To be successful in the course, you will NOT need to be a mathematician or statistician, but you will need a desire to learn, to think analytically, to solve problems, and be open to new ways of thinking. You will also need some basic algebra skills. A copy of this syllabus and a list of related web-based resources for the course can be found at the Avenue site (http://avenue.mcmaster.ca), which will be expanded throughout the course.

Course Objectives

The course will provide an introduction to basic statistical methods in the social sciences through linear (and to a less extent logistic) regression. The emphasis will be on successful application of statistical methods and understanding the uses of such methods for public policy and political science. To gain experience in applying statistical analysis, you will complete a series of homework assignments and an independent research project employing linear regression. Student attendance and participation in class is required and will constitute a significant portion of final grades.

Required Texts and Software

The required textbook for this course has been ordered at Titles. Additional readings assigned will be available through the library's subscriptions or Avenue.

- Phillip H. Pollock, III. 2011. *The Essentials of Political Analysis*, 4th edition (though earlier/later editions are also acceptable). CQ Press. (ISBN: 1608716864)

Available from the library (but may be worth buying a used copy online):
- Lewis-Beck, Michael. 1980. *Applied Regres*sion. Vol. 22. Quantitative Applications in the Social Sciences. Thousand Oaks, CA: SAGE Publications, Inc. (hard copy on reserve, soft

copy via: http://srmo.sagepub.com.libaccess.lib.mcmaster.ca/view/applied-regression/SAGE.xml)
- Lewis-Beck, Michael. 1995. *Data Analysis*. Quantitative Applications in the Social Sciences. Thousand Oaks, CA: SAGE Publications, Inc., (hard copy on reserve, soft copy via: http://srmo.sagepub.com.libaccess.lib.mcmaster.ca/view/data-analysis/SAGE.xml)
- Schroeder, Larry D., David L. Sjoquist, and Paula E. Stephan. 1986. *Understanding Regression Analysis: An Introductory Guide*. Beverly Hills: SAGE Publications, Inc. (soft copy via: http://srmo.sagepub.com.libaccess.lib.mcmaster.ca/view/understanding-regression-analysis/SAGE.xml)

Reference or alternative textbooks available from the library (in order from basic to advanced)
- Neil J. Salkind. *Statistics for People who (Think They) Hate Statistics*. 4th edition. Sage. ISBN 1412979595 (covers most of material in class)
- Alan Agresti and Barbara Finlay. *Statistical Methods for the Social Sciences*, 4th edition. Upper Saddle River, NJ: Prentice Hall. ISBN 0130272957 (covers class material)
- Earl Babbie. *The Practice of Social Research*, 13th ed. Wadsworth. ISBN: 1133049796. (covers class material and qualitative methods and data collection methods, like survey design)
- Janet Buttolph Johnson and H.T. Reynolds. *Political Science Research Methods.*CQPress. ISBN: 1608716899. (covers class material, qualitative methods, and general research strategies)
- Damodar N. Gujarati and Dawn Porter. *Basic Econome*trics. 5th ed. ISBN: 0073375772 (solid basic introduction to regression and some advanced topics, used in many political science grad programs)
- William H. Greene. *Econometric Analysis*. 7th ed. Prentice Hall. ISBN: 0131395386. (advanced econometric text that covers most advanced methods in more detail than Gujarati, used in many political science grad programs)

Statistical software will be required for several homework assignments and your final projects. The primary software for teaching will be STATA. The lab in the basement of KTH has both STATA available (see http://www.mcmaster.ca/uts/lab_facilities/labs.html). In addition, you can order a 6-month student license for STATA/IC for $45USD (see: https://www.stata.com/order/new/edu/gradplans/student-pricing/). NOTE: It will take them 1-2 business days to process your order, so this cannot be done at the last minute. For those unfamiliar with statistical software and who do not feel comfortable with computers, I would recommend a supplemental text such as: http://www.cqpress.com/product/Stata-Companion-to-Political-Analysis-3.html (any recent edition would do).

Course Evaluation
Class participation, attendance, and pop quizzes, 15%. To get the most out of our class meetings and to be able to participate actively, you must have done the reading prior to class and you must attend class regularly. (Indeed, the norm in graduate school is that you attend every class.) Asking thoughtful or insightful questions is just as important as answering questions posed by others in the class. I also reserve the right to give in class pop quizzes on the assigned readings. Participation through Avenue will also count positively toward your participation grade. This includes asking questions and posting answers to others' questions. Absences, tardiness, and cell phone disruptions will adversely affect your participation grade. <u>All</u>

electronic devices should be turned off during class (including laptops, cell phones, etc.). See me in the first weeks of class if you have an accessibility need for using a laptop.

Homework assignments, 25%. Homework assignments will be assigned throughout the semester to be reviewed during class. Students are allowed to discuss and work together on homework assignments. However, each student must turn in their own work and generate their own software outputs/results. Since some assignments will take more time than others, the relative weights of each homework assignment are listed in the table below. These will be marked complete/incomplete, and so no late homework assignments will be accepted.

Final research project, 60% total. More than half of your final mark in this course will be based upon your completion of an original research project using quantitative data and linear regression. The project will proceed in phases to give you guidance and feedback throughout the research process. The final product of your research project will be presented in a poster session the final week of classes. Other graduate students and faculty from the department will be invited to attend. Students are strongly encouraged to discuss their research projects with me early and often to make sure the projects meet the assignment's requirements and are feasible. Please review the Project Instructions for detailed instructions for each of the assignments below.

Your final research project will proceed in phases:
1. Statement of research question with clear identification of dependent variable (5%)
2. Description of research hypotheses and bibliography (10%)
3. Diagram of research design (5%)
4. Description of data and sources bibliography (10%)
5. Description of analysis and results (10%)
6. Final poster with results (20%)

Weekly Course Schedule and Required Readings
** Reading available online through Avenue. All others are either in the textbook or available through the library.

Week 1 January 7
Assign Homework 1
Readings:
** Christopher H. Achen. "Advice for Students Taking a First Political Science Graduate Course in Statistical Methods"
L. J. Zigerell. "Of Publishable Quality: Ideas for Political Science Seminar Papers." *PS: Political Science and Politics*, 44, 3.
** Gerring, John. 2001. "Methods." *Social Science Methodology: A Criterial Framew*ork. New York: Cambridge UP. (NOTE: Read 200-214; skip subsection on QCA as well.)
** Taylor, Mark Zachary. 2007. "Bivariate & Multivariate Regressions: A Primer." Sam Nunn School of International Affairs, Georgia Institute of Technology, unpublished paper.

Recommended background or for future reference:
Brady, Henry E. and David Collier, eds. 2004. *Rethinking Social Inquiry*. Rowman and Littlefield.
Collier, David, James Mahoney, and Jason Seawright. 2004. "Claiming Too Much: Warnings about Selection Bias." In *Rethinking Social Inquiry: Diverse Tools, Shared Standards*, Henry E. Brady and David Collier, eds. New York: Rowman and Littlefield Publishers, Inc.

Flyvbjerg, Bent. 2004. "A Perestroikan Straw Man Answers Back: David Laitin and Phronetic Political Science." *Politics & Society* 32, 3 (September): 389-416.

Freeman, Donald M. "The Making of a Discipline." In *Political Science Volume 1: Theory and Practice of Political Science*, William Crotty, editor. Northwestern University Press.

Geddes, Barbara. 1990. "How the Cases you Choose Affect the Answers You Get." *Political Analysis*, 2: 131-150. King, Gary, Robert Keohane, and Sidney Verba. 1994. Designing Social Inquiry. Princeton UP.

Kuhn, Thomas. "A Role for History and Progress through Revolutions" from *Methods for Political Inquiry*, Stella Z. Theodoulou and Rory O'Brien, editors.

Laitin, David D. 2003. "The Perestroikan Challenge to Social Science." *Politics & Society* 31, 1 (March): 163-184.

Lieberson, Stanley. 1992. "Small N's and big conclusions: an examination of the reasoning in comparative studies based on a small number of cases." In *What is a case?,* Ragin and Becker, eds.

New York Observer Staff. 2002. "How Cult Internet Character Mr. Perestroika Divided N.Y.U.'s Political Science Department." *The New York Observer*, January 6. http://www.observer.com/print/45441. Accessed November 7, 2010.

Ragin, Charles C. 1987. T*he Comparative Method: Moving Beyond Qualitative and Quantitative Strategies.* Berkeley, CA: University of California Press. (Chapters 1-5)

Week 2 January 14
Homework 1 due. Assign Homework 2 (basic statistics)
Readings:
Chapters 1-5 in Pollock
Chapters 1-3 in Lewis-Beck *Data Analysis*

Week 3 January 21
Statement of research question w/dependent variable due.
Readings:
Chapter 6 in Pollock
Chapter 5 in Lewis-Beck *Data Analysis*

Week 4 January 28
Homework 2 due. Assign Homework 3 (bivariate regression).
Readings:
Chapters 7 in Pollock
Chapter 4-5 in Lewis-Beck *Data Analysis*

Week 5 February 4
Description of research hypotheses and bibliography due.
Readings:
Chapter 8 in Pollock
Lewis-Beck *Applied Regression*, pp. 9-37
Schroeder, Sjoquist, and Stephan, pp. 11-29

Week 6 February 11
Diagram of research design due. Homework 3 due. Assign Homework 4 (multivariate regression)
Readings:
Lewis-Beck *Applied Regression*, pp. 20-25 (R^2 repeat), 37-47 (RMSE)
Schroeder, Sjoquist, and Stephan, pp. 23-29 (R^2 repeat), 36-53

<u>Review one of the following depending on your research project</u>
Davis, Darren W., and Brian D. Silver. 2004. "Civil Liberties vs. Security: Public Opinion in the Context of the Terrorist Attacks on America." American Journal of Political Science 48(1): 28–46. (survey data)
**Hicks, Alexander, and Lane Kenworthy. 2008. "Family policies and women's employment: A regression analysis." In Method and substance in macrocomparative analysis, edited by Lane Kenworthy and Alexander Hicks. Palgrave Macmillan, 196-221. (aggregate – state, nation level data)

Week 7 February 18 Winter mid-term recess, NO CLASS (READING WEEK)

Week 8 February 25
Description of data and sources bibliography due.
Readings:
Chapter 8 in Pollock
Lewis-Beck *Applied Regression*, pp. 47-54, 63-66
Schroeder, Sjoquist, and Stephan, pp. 29-48, 51-66

Week 9 March 4
Homework 4 due. Assign Homework 5.
Readings:
Lewis-Beck *Applied Regression*, pp. 54-58, 63-74
Schroeder, Sjoquist, and Stephan, pp. 56-71
**Chapters 5 and 7 in Leo Kahane. 2007. *Basic Regression*, Sage.

Week 10 March 11
Readings:
Lewis-Beck *Applied Regression*, pp. 58-61
Schroeder, Sjoquist, and Stephan, pp. 71-77

Week 11 March 18
Results due.
Readings:
**Chapter 15 in Agresti and Finlay, *Statistical Methods for the Social Sciences*
Schroeder, Sjoquist, and Stephan, pp. 79-80

Week 12 March 25
Homework 5 due.
Readings:
Schroeder, Sjoquist, and Stephan, pp. 72-79

Week 13 April 1
Return project results. Discuss revisions/problems.

Week 14 April 8
Last lab session & final revisions to poster drafts

Poster Session April 16 – MUSC 311/313, 12:00- 16:00

Course Policies

Submission of Assignments
All assignments due in class in paper format.

Grades
Grades will be based on the McMaster University grading scale:

MARK	GRADE
90-100	A+
85-90	A
80-84	A-
77-79	B+
73-76	B
70-72	B-
69-0	F

Late Project Assignments
Assignments related to the final project are due in paper/hard copy at the beginning of class on the dates outlined above. **No late homework assignments will be accepted**. Project assignments turned in at the end of class or within one hour of the end of class will only be eligible for 95% of the total value. Assignments turned after class but within 24 hours of class will be eligible for a maximum grade of B+. Assignments received after 24 hours of the due date will be eligible for a maximum grade of C+. Late project assignments will not be accepted after 48 hours after the original due date. If you anticipate having problems meeting these deadlines, please contact me before the assignment is due to discuss your situation. To avoid late penalties and ensure fairness, written documentation of your emergency will be required.

Collaboration
By submitting written homework assignments and your final project, you are pledging that you have not received unauthorized aid on the assignments and project. While you may discuss homework assignments with other students, you must generate your own output and write up your own answers. If computer analysis is required for an assignment, you must analyze your own data separately from your peers. While you are encouraged to discuss your projects with peers and the instructor, you must be the only author of your written assignments. This means that though you may discuss an assignment with peers, the write-up should be done alone and separate from them. Meet to discuss the assignment, then go your separate ways to write up your answers. All references to or paraphrasing of course readings or outside readings must be properly documented to avoid plagiarism. If you have any doubts, please ask me before turning in the assignment.

Absences, Missed Work, Illness
Regular attendance is crucial to your success in this course and is expected of all graduate students. Attendance is incorporated into your participation grade, which is a substantial portion of your final grade (15%). In the past, students who have missed even one class have had trouble catching up with the material, and students who have missed more than one class usually have had significant trouble completing the final project to their satisfaction.

Avenue to Learn
In this course we will be using Avenue to Learn. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

University Policies

Academic Integrity Statement
You are expected to exhibit honesty and use ethical behavior in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behavior can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at www.mcmaster.ca/academicintegrity.

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one's own or for which credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

Academic Accommodation of Students with Disabilities
Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University's Policy for Academic Accommodation of Students with Disabilities.

Faculty of Social Sciences E-mail Communication Policy
Effective September 1, 2010, it is the policy of the Faculty of Social Sciences that all e-mail communication sent from students to instructors (including TAs), and from students to staff, must originate from the student's own McMaster University e-mail account. This policy protects confidentiality and confirms the identity of the student. It is the student's responsibility to ensure that communication is sent to the university from a McMaster account. If an instructor becomes aware that a communication has come from an alternate address, the instructor may not reply at his or her discretion.

Course Modification

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check his/her McMaster email and course websites weekly during the term and to note any changes.