International Relations and Political Sciences
Academic year 2019–2020

Statistics for International Relations II
RISP062 – Spring – 6 ECTS

Course Description
This course provides students with a solid understanding of the linear model as well as several non-linear regression-based methods widely used in political science. We will be covering basic assumptions, methods for transforming data, estimation and interpretation, and diagnostics of results and/or potential fixes for violations of assumptions. Further, we will discuss models for which the traditional assumptions of OLS regression are violated, such as in cross-sectional and limited dependent variable anlyses. Introductions to some advanced analytic approaches concludes the seminar.

PROFESSOR

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Syllabus

Course Aims

The primary goals of this course are to enable students to:

- understand the types of questions that can be asked/answered by various statistical methods

- identify, explain, and evaluate model choices

- engage with the literature on their topic that employs statistical methods

- generate, interpret, and communicate statistical findings verbally and in writing

- grow more comfortable with statistical terms, concepts, and programming

- recognise key assumptions for statistical methods and what to do if they are not met

- think critically about contemporary issues in (statistical) methodology

Course Requirements

Successfully passing or obtaining a waiver for Statistics for International Relations I is a necessary requirement for this class.

Course Evaluation

10% Participation Students often ask questions and offer answers to each others' coding issues in $\mathcal{R}$. To motivate this and to reward those who participate most, I am associating a grade with participation on the Moodle forum. The grade is scaled to whomever submits most questions/answers, and the return on Qs/As is nonlinear to encourage participation among those who are least confident.

10% Discussant Every lab includes discussion of a contemporary paper in political science that uses the method/model of the week. Students will serve as discussant for one of these papers to begin the discussion and defend the author/s' choices.

30% Exercises Students are required to submit 8 weekly exercises. Problem sets will be distributed during the lab session. Students may work in groups, however the final product (i.e. your own interpretation of results) <u>must</u> be submitted individually.

50% Project The aim is for students to demonstrate what they have learned by presenting (first) analyses using one of the methods discussed during the seminar. I would encourage you to take this opportunity to find/construct a dataset of variables of interest to you and the theories/hypotheses/empirical interests you have. We will collect proposals after the Easter break (no grade) and provide consultancy sessions the week prior to the presentations to best support your individual projects. The presentations offer an opportunity to showcase your ability to compile, analyze, and interpret data. Part of the grade will be reserved for questions asked of others' projects. You will be required to submit your dataset and $\mathcal{R}$ script that allows us to follow, and if need be, replicate your findings. More details will be provided in class.

Course Materials

There is no single textbook for this course, but there are a number of excellent supporting books, some chapters of which we will use throughout this course.

Agresti, Alan. 2018. *Statistical Methods for the Social Sciences.* 5 ed. Essex: Pearson.

Ward, Michael D, and John S Ahlquist. 2018. *Maximum Likelihood for Social Science*. Cambridge: Cambridge University Press.

Snijders, Tom A B, and Roel J Bosker. 2011. *Multilevel Analysis*. 2nd ed. London: Sage.

Imai, Kosuke. 2017. *Quantitative Social Science*. Princeton: Princeton University Press.

All additional required and recommended readings are provided in electronic format on Moodle or will be available on reserve in the library.

The software used in the class is $\mathcal{R}$. It is free. There are many highly recommended resources for learning R which I will share with you. In the meantime, please download and install the most recent versions of both $\mathcal{R}$ (the statistical software) and RStudio (a front-end which makes using R much easier).

Course Policies

Auditing is possible, but auditors are expected to attend the course and fulfil all obligations associated with the course. Auditors' will receive feedback on their assignments, but no grades.

Grading is according to a 20 point scale. Though there is not a strict equivalence to the Swiss grading system, as a general guide a 10 is roughly a passing grade (4.00).

Plagiarism means presenting another's thoughts, ideas, or expressions as one's own, and is a breach of academic integrity that is not tolerated at the Graduate Institute. Students who present others' work as their own may receive a 0. Please cite appropriately and contact the TA if you have any doubts.

Course Schedule

Week 1 (18 Feb)	**Introduction and Refresher**
Lecture	Agresti, chapter 10 and 11.
Lab	Fearon, James D. and David Laitin. 2003. "Ethnicity, Insurgency, and Civil War," *American Political Science Review* 97(1): 75-90.
Week 2 (25 Feb)	**Assumptions**
Lecture	Agresti, chapter 14.
Lab	Hansen, Henrik and Finn Tarp. 2000. "Aid Effectiveness Disputed," *Journal of International Development* 12(3): 375-398.
Noon 3 Mar	Exercises 1
Week 3 (3 Mar)	**Model Building and Evaluation**
Lecture	King, Gary. 1986. "How Not to Lie with Statistics: Avoiding Common Mistakes in Quantitative Political Science," *American Journal of Political Science* 30(3): 666-687.
	Schrodt, Philip A. 2010. "Seven Deadly Sins of Contemporary Quantitative Political Analysis," August, 1–33.
	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.
Lab	Easterly, William. 2003. "Can Foreign Aid Buy Growth?" *Journal of Economic Perspectives* 17(3): 23-48.
Noon 10 Mar	Exercises 2
Week 4 (10 Mar)	**Maximum-Likelihood Estimation**
Lecture	Ward and Ahlquist, chapters 2 and 4.
Lab	Van der Waal, Jeroen and Willem de Koster. 2018. "Populism and Support for Protectionism: The Relevance of Opposition to Trade Openness for Leftist and Rightist Populist Voting in The Netherlands." *Political Studies* 66(3): 560–576.
Noon 17 Mar	Exercises 3

Week 5 (17 Mar)	**Binary Response Models**
Lecture	Ward and Ahlquist, chapters 2 and 4.
Lab	Fearon, James D. 2005. "Primary Commodity Exports and Civil War," *Journal of Conflict Resolution*, 49(4): 483-507.
Noon 24 Mar	Exercises 4
Week 6 (24 Mar)	**–no class–**
Week 7 (31 Mar)	**Ordinal and Multinomial Response Models**
Lecture	Ward and Ahlquist, chapters 8 and 9.
Lab	Horowitz, Michael, Rose McDermott, and Allan C. Stam. 2005. "Leader Age, Regime Type, and Violent International Relations," *Journal of Conflict Resolution* 49(5): 661-685.
Noon 7 Apr	Exercises 5
Week 8 (7 Apr)	**Count Response Models**
Lecture	Ward and Ahlquist, chapter 10.
Lab	Moore, Will H. and Stephen M. Shellman. 2004. "Fear of Persecution: Forced Migration, 1952-1995," *Journal of Conflict Resolution* 48(5): 723-745.
Noon 14 Apr	Exercises 6
14 Apr	**–Easter Break–**
Noon 21 Apr	Project proposal due
Week 9 (21 Apr)	**Mixed Models**
Lecture	Snijders and Bosker, chapters 2-4.
Lab	Green, Donald P., Soo Yeon Kim and David H. Yoon. 2001. "Dirty Pool," *International Organization* 55(2): 441-468.
Noon 28 Apr	Exercises 7
Week 10 (28 Apr)	**Duration Models**
Lecture	Ward and Ahlquist, chapter 11.
Lab	Reed, William. 1997. "Alliance Duration and Democracy: an Extension and Cross-Validation of 'Democratic States and Commitment in International Relations'." *American Journal of Political Science* 41 (3): 1072–78.
Noon 19 May	Homework 8
Week 11 (5 May)	**Advanced Analysis**
Lecture	Agresti, chapter 16.
	Imai, chapter 5.
Week 12 (12 May)	**Consultations**
Week 13 (19 May)	**Project presentations**
Week 14 (26 May)	**Project presentations**

– This syllabus is subject to change –