POLS 3650: Research Methods II

Department of Political Science – University of Guelph – Winter 2019

Lectures: Mondays and Wednesdays 12.30-1.20, room ALEX 100
Tutorials: section-specific

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Course description

This course continues the discussion started in POLS*3180 and offers an introduction to quantitative methods of data analysis. It discusses how political scientists can look for evidence by using numbers. Some find this approach to studying politics challenging at first. But a firm grasp of statistical techniques is indispensable for any student of politics. Not only is it useful in preparing future research projects, but it also and more importantly enables one to evaluate the methodological choices in other people’s work. Unfortunately, researchers, journalists and politicians often get away with biased findings and faulty conclusions simply because the audience is too intimidated by the statistics that are brought forward as ‘evidence’. This course aims to make such statistics look less intimidating, and to enable students to critically engage most quantitative information they encounter.

The majority of the class is dedicated to the logic of statistical inference and the statistical techniques that are most commonly used in political science (in particular, measures of central tendency and dispersion, z-tests and t-tests, chi square, lambda, tau, Pearson’s r, ANOVA, and OLS regression).

Learning outcomes

At the end of the course, successful students will be able to:

- Interpret basic univariate and bivariate statistics, in particular the mode, median, mean, variation ratio, quintile range, standard deviation, eta, lambda, Cramer’s V, Kendall’s tau, Pearson’s R, z, t, chi-square, and F.
- Evaluate univariate and bivariate analysis, in particular the appropriateness of a statistical operation for a specific research problem.
- Understand the main purpose of multivariate analysis, in particular the principle of ‘controlling’ for a third variable.
- Use statistical software program SPSS to conduct basic univariate, bivariate, and multivariate analysis.
- Report the findings of statistical analysis in a research report.
- Understand the Central Limit Theorem and the logic of statistical inference, i.e. the statistical generalization from a random sample to a population.

**Methods of instruction**

This course relies on two methods of instruction. First, a series of 24 lectures reviews the basics of statistical methods in political science. Students are strongly encouraged to attend all lectures and to read the relevant material beforehand. Missing a lecture can make it difficult to understand the remainder of the class. POLS 3650 is not a course set up with different themes that can be understood in isolation. Instead, each lecture builds directly on the material discussed in previous lectures. All lecture slides will be posted on courselink before the lecture, but reading through these slides cannot be seen as a substitute for class attendance. Some slides will be difficult to understand for those who did not attend the lecture, and some important material will be presented in class by other means than powerpoint.

Second, in eleven tutorial sessions students will have the opportunity to conduct quantitative data analysis themselves by using statistical software program SPSS (Statistical Package for the Social Sciences).

**Methods of evaluation**

The final grade in this class will be based on five components:

1. Tutorial participation: 15%
2. Paper I: 15%
3. Paper II: 20%
4. Online quizzes: 15% (three quizzes, 5% each)
5. Final exam: 35%