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Summary

Statistics is an integral part of social science research. We live in a world where there is no shortage of numerical data and there is increasing demand for people who know how to make sense of it independent of the field of work. The goal of this course is to turn you into one of these people and an effective user of the free and open source software R. In your prior scholarship you have learned the basics of statistical inference and the most commonly used statistical techniques found in political science research. The course is designed to give you the hands on knowledge you need to actually do the statistics you learned in practice. To do all this, we will use R. R is a serious pain to use but climbing the early learning curve pays off quickly as you become more competent analysts. This will not be an easy ride, but I hope to make it fun along the way as you become competent user of R and a statistical analysts.

Bring your laptops to class. Install R (https://www.r-project.org/) and R-Studio (https://www.rstudio.com/).

Topic Covered

The main goal of the course is to enable students to apply all the methods covered in an introductory statistics class. Thus, first four sessions are dedicated to familiarizing participants with statistical software R. This includes working with scripts, different types of data objects, and logical operators, as well as learning crucial data management techniques. The following two classes are dedicated to conducting simple statistical analysis: cross-tabulations, difference tests, correlation, etc. In the last sessions we dvell into the wonders of regression analysis and diagnostics. If time allows we also cover logistic regression.

Session	Topics
September 20 Session 1	Installing and Understanding R
September 20 Session 2	Types of Data Objects: Vectors, Matrices & Lists
September 20 Session 3	Data Frames: Importing and Summarizing Data
September 21 Session 1	Recoding Variables, Frequency Tables & Exporting Data
September 21 Session 2	Simple Functions, T-tests & Chi-square
September 21 Session 3	Crosstabulations, Correlation & Basic Regression
September 24 Session 1	Multivariate Linear Regression & Diagnostics in R
September 24 Session 2	More Diagnostics + Results Interpretations
September 24 Session 3	Logistic Regression

WORKSHOP SCHEDULE

Reference Texts

Michael Lewis-Beck (1980) Applied Regression: An Introduction. SAGE (We may want to use Lewis-Beck and Lewis-Beck 2015, Second Edition of this book. But first edition is OK as well.)

John Fox (1990) Regression Diagnostics. SAGE

Fred Pampel (2000) Logistic Regression: A Primer. SAGE

Useful Article

Brambor, Thomas, William Roberts Clark, Matt Golder (2005), "Understanding Interaction Models: Improving Empirical Analyses", *Political Analysis* 13:1-20.