

Computing in the Social Sciences

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March 25, 2018

Overview

- 1 Housekeeping
- 2 Group Meeting
- 3 Computing
- 4 Computing in R

- Group Meeting 3: Theory and Hypothesis April 4
- Homework 3 is due April 11 (prompt introduced next class)
- You will need your computer every class from now until April 23

Group Meeting 3: Theory and Hypothesis

This is the space where you flesh out in more detail one of the theories you introduced in your literature review (OR a theory you constructed yourself but with influence from theories in your literature review). You then apply it to your particular research question.

Group Meeting: Steps

- 1 Identify/create theory
- 2 Flesh out theory in more detail
- 3 Apply theory to your particular case
- 4 Use theory to inform your choice of null and alternative hypothesis
- 5 List your null and alternative hypothesis and justify your choice of alternative hypothesis using the theory to guide you.
- 6 http://docs.wixstatic.com/ugd/7bd45b_3d210a0b04e84f9caaff677a012866a1.pdf

- Primarily used for quantitative analysis
 - Statistical analysis (inferential and descriptive)
 - Visual analysis (graphing)
 - Exploratory analysis (data mining, etc.)
- Can also be used with certain hybrid methods like QCA
- Can even be used for research design purposes

Computing languages/programs in social sciences fall into 1 of 3 categories

- Statistical software/languages: R, Python, STATA, SPSS, etc.
- Markup languages: \LaTeX , Markdown, Rmarkdown, HTML, etc.
- Visual software: QGIS, ArcGIS, Tableau, Google Viz, HTML, etc.

Introduction to R

- R is an open-source computing program that emerged from the S computing language developed in Bell Laboratories by John Chambers
- S was originally conceived in 1976 and is more or less equivalent to R
- R was ported from S by Ross Ihaka and Robert Gentleman at the University of Auckland in 1993

- Installing R on a Mac (Windows...)
- R syntax
- R structure (packages, libraries, objects, etc.)
- R commands
 - Importing data
 - Saving data
 - Creating a new variable column
 - Installing packages and loading libraries
 - Simple mathematical operations ($+$, $-$, \div , \times , $\sqrt{\quad}$)