

Political Science 501, Baumgartner  
Short paper topics/discussion points  
Week 4: Review of statistics

Readings: Nachmias, ch. 15, 16, skim ch. 17; King, chapter 1.

This week's focus is on a review of many statistical concepts. Mostly, these don't require (or lend themselves) to papers. Rather, you should come to class with a list of topics that you would like to review. What are the topics that make the least sense to you? List three and come to class prepared to discuss them.

The one exception to this is the introductory chapter of King's Unifying Political Methodology. That essay argues, among other things, that the real problems in political science methods have to do with appropriate statistical methods. If you would like to write a paper next week, you certainly could write a reaction to that essay.

Here are some concepts you should have firmly in your grasp:

From Chapter 15:

- ~~///~~ Measures of central tendencies
- ~~///~~ Measures of dispersion
- ~~///~~ Different measures of the above depending on the nature of the variables being described (nominal, ordinal, interval)
- ~~///~~ Areas under the normal curve. Memorize the standards of what is within 1, 2, 3, and 4 standard deviations from the mean. That makes things easier later.

From Chapter 16:

- ~~///~~ Measures of covariation
- ~~///~~ Proportional reduction in error
- ~~///~~ Absolute reduction in error
- ~~///~~ Error and variation
- ~~///~~ The desire for maximum variation in the dependent variable in order to reduce it proportionately.
- ~~///~~ Lamda
- ~~///~~ Gamma
- ~~///~~ Tau-*b*
- ~~///~~ Linear regression based on a scatterplot
- ~~///~~ Correlation v. regression
- ~~///~~ Slopes v. tightness of fit

From Chapter 17:

Skim the chapter; mostly this requires more work in 502 to understand fully. Look at the logic of control variables, however. Note especially how the number of cases declines dramatically as you add control variables. Also note how awkward it gets to display more than one or two control variables in a cross-tab (table). Note the value of the multi-variate statistical approach therefore.