PPA 207: Quantitative Methods
Meeting 3, Spring 2004

1. Homework

Studenmund, Chapter 2, Number 4

See www.csus.edu/indiv/w/wassmerr/ppa207hwch2.xls

Studenmund, Chapter 2, Number 11

a. A determinant of weight, besides height, is also the percent body fat in a person; the reason being that two people the same height can exhibit different weights based on composition of body (fat vs. muscle). The coefficient on height, when percent body fat is in the regression, represents the addition in weight for every one inch above five feet holding body fat constant.

b. Given the information provided, since percent body fat is a reasonable cause of weight, I prefer the regression with percent body fat over the one without.

c. The adjusted R-squared is a measure of the benefits of adding another explanatory variable relative to the costs. Even though the adjusted R-squared falls after adding another explanatory variable, I would still prefer the regression that included percent body fat because it is a reasonable explanatory variable.

d. If the mean of percent body fat is twelve, then body fat adds 3.36 pounds to the person with average body fat (0.28 x 12). This is a substantial weight difference and even more reason to stick with the multiple regression over the simple regression.

Pollock, Chapter 2, Number 2 and 3

Covered in class

2. Studenmund, Chapter 3, “Learning to Use Regression Analysis”

- Six steps to producing a paper
  1. Review literature and develop theory
  2. Specify the model by selecting independent variables and functional form
  3. Hypothesize expected signs
  4. Collect data
  5. Estimate and evaluate
  6. Document results
• Literature review
  Ignore data, understand topic from previous research, develop broad
  causal factors

• Select explanatory variables
  Multiple possibilities for a given theoretical cause, dummy variables

• Expected signs
  Based upon literature review

• Collect data
  More observations the better, plot data on scatter diagram to look for entry
  errors, consistency in units of measurement
  Degrees of freedom (n - K - 1)
    Minimum required: one
    But the more the better (raise n)
    Less likely that purely random component will affect
deterministic portion
    + error more likely to be balanced by a – error

• Document results
  See example of Table 1 (p.19) of Wassmer paper at
  Report regression coefficient, standard error, N, R-squared, statistical
  confidence in each regression coefficient

• Review final paper requirements at
  http://www.csus.edu/indiv/w/wassmerr/ppa207pa.htm
  Ignore dates for last year

• Using regression analysis to predict restaurant locations
  Go over step-by-step process

3. Pollock, Chapter 3, Making Comparisons

• Crosstabs procedure
  Analyze=>descriptive statistics=>descriptive statistics=>crosstabs
  Rules
    Independent variable in column (EDUC3)
    Dependent variable in row (ATTENT)
    Percentage the dependent variable
    Cells box=>column box in percentages panel
  Do more educated pay more attention to political campaigns?

• Compare means procedure
  Categorical independent and interval level dependent
Analyze=>compare means=>means
  
  Dependent (HILLARY)
  Independent (PARTYID7)

Options=>remove standard deviation
Does party id explain feelings?

- Line chart
  Graphs=>line=>simple=>define
  Category axis: PARTYID7
  Line represents: HILLARY
  Do not display groups defined by missing values

- Bar chart
  Graphs=>lbar=>simple=>define
  Category axis: EDUC3
  Variable box: ATTENT
  Change summary=>percentages inside=> high and low = 1
  Double click on bar chart to edit

4. Wassmer, Sprawl Data Disk

- Background information on Census data and definitions
- Wassmer’s papers on topic
- Excel files
  1990 and 2000 data on U.S. central places
  2000 data on U.S. urbanized areas
- SPSS data file for some variables 2000 urbanized areas

5. Homework Due the Start of Meeting Four

(1) Read all of the material under meeting four in the syllabus; come prepared to discuss.

(2) A typed and well developed question from reading assignment for week four.

(3) Answer question 3 in Studenmund, Chapter 3, typed on a separate page of paper. Answer questions 1 and 8 in Pollock, Chapter 3, handwritten on given pages and turn in any requested SPSS output.

(4) Come up with at least two possible topics for your final regression paper. In one paragraph for each, type out a double-spaced explanation of what your dependent variable is, where you will get the data for it (Wassmer’s or Pollock’s
disk or your own source) and what is the key explanatory variable you are interested in. Tell me your ranking of the topics chosen.