PSC 200: Applied Data Analysis

Spring 2005 9:40-10:55 TR Dewey 1-101 Labs: 2:00-2:50R; 4:50-5:40R; 11:00-11:50F

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Overview: This course offers an introduction to empirical research methods in political science. By the end of the semester, students should have a better acquaintance with the types of empirical work done by political scientists (and other social scientists) and the ability to understand and critique them. Most of the ideas, and sometimes the precise methods, are used in media analyses of public opinion and politics, so we also anticipate considerable carryover to the "real world."

Texts:

- Phillip H. Pollock, *The Essentials of Political Analysis* (Washington, D.C.: CQ Press, 2003)
- Phillip H. Pollock, *An SPSS Companion to Political Analysis* (Washington, D.C. CQ Press, 2003)

Grading: Grades will be based on three in-class exams (**February 15, March 24, April 26**), two data analysis exercises, brief homework assignments, and a final data analysis/paper. The first two data analyses are due one week from the day they are assigned; the third is due 5/2/05. Data analyses should be no longer than five double-spaced pages of text (plus tables or other supplementary material). Grades will be weighted as follows: exams 15% each; the first data analysis 10%; the second data analysis 15%; homework assignments 15% total; and the final data analysis/paper 15%. Late assignments will be downgraded by one grade level for each day they are late, e.g. B+ to B.

Make-up Exams: Students are expected to take all exams at the announced times. Make-up exams will only be given to students with documented extenuating circumstances such as personal illness requiring medical attention. Athletes whose competition schedule prevents them from taking an exam should arrange for their coaches to administer the exam. Undocumented absences earn a zero.

Lab sessions: There will be weekly labs/recitations. Labs are intended to reinforce concepts from the class, review homework, answer questions, and to demonstrate and practice computer

exercises. Attendance is expected—i.e., these are not optional meetings to be attended only if you have questions.

Readings: Readings are shown below. Readings not from class texts are available on JSTOR (www.jstor.org), on the library website, or via electronic reserve. Be prepared to discuss them in the lab sessions. The review problems at the end of each chapter in Pollock are very helpful and will occasionally be assigned as homework. You may wish to do them regardless of whether they are assigned.

Pace of the class: Except for exams, exact dates are not shown on the syllabus. Students are responsible for attending class and being aware of when we move on to a new section.

COURSE SCHEDULE:

1. Introduction

2. Concepts and Measurement
Readings:

- Essentials, Ch.1.
- Stanley, Harold, and Richard Niemi. 2003. *Vital Statistics on American Politics, 2003-2004*, pp. 116-118, 133-134. [On electronic reserve]
- Fiorina, Morris. 1977. *Congress: Keystone of the Washington Establishment*. Ch.1. [On electronic reserve]
- Shull, Steven A., and James M. Vanderleeuw. 1987. "What do Key Votes Measure?" LSQ. 12(4):573-582.

3. Descriptive Statistics
Readings:

- SPSS, Introduction, Ch.1, 2.
- Grofman, Koetzle, and McGann. 2002. "Congressional Leaders 1965-96: A New Look at the Extremism versus Centrality Debate." LSQ 27(1):87-105. [On electronic reserve]
- Jacobson, Gary. 1987. "The Marginals Never Vanished: Incumbency and Competition in Elections to the U.S. House of Representatives, 1952-82." AJPS 31(1):126-141.

4. Constructing Variables
Readings:

- SPSS, Ch. 4.
- Delli Carpini, Michael, and Scott Keeter. 1996. "Political Knowledge Scale," in *Measures of Political Attitudes*" ed. John Robinson, et al. [On electronic reserve]
- Sullivan, John, James Piereson, and George Marcus. 1982. "Content-Controlled Measure of Political Tolerance," in *Measures of Political Attitudes*" ed. John Robinson, et al. [On electronic reserve]

5. Research Design
Readings:

- Essentials, Ch.2.
- Cover, Albert D., and Bruce S. Brumberg. 1982. "Baby Books and Ballots: The Impact of Congressional Mail on Constituent Opinion." APSR 76(2):347-359.

- Neuman, Russell, Marion Just, and Ann Crigler. 1992. *Common Knowledge*, pp. 30, 34-36, ch. 5.
- Ethridge, Marcus E. 2002. *The Political Research Experience*. 3rd ed. Ch. 2, pp. 20-28.

6. Surveys and Sampling
Readings:
- Asher, Herbert. 2004. *Polling and the Public*. 6th ed. Ch. 4.
- Morin, Richard. 2004. "Surveying the Damage: Exit Polls Can't Always Predict Winners, So Don't Expect Them To." *Washington Post*, Nov. 21, B1. [On electronic reserve]
- Squire, Peverill. 1988. "Why the 1936 Literary Digest Poll Failed." POQ 52(1):125-133.

7. Assessing Hypotheses: Crosstabs
Readings:
- SPSS, Ch. 3, pp. 28-30.
- Essentials, Ch. 3, pp. 48-62.
- Weisberg, Herbert, Jon Krosnick, and Bruce Bowen. 1989. *An Introduction to Survey Research & Data Analysis*. 2nd ed. Ch. 11. [On electronic reserve]
- Powell, Lynda, Richard Niemi, and Jon Sabella. 2004. "The Timing of Challengers' Decisions to Run for Congress," unpublished paper, pp. 1-6 (first para.), Tables 1-2. [On electronic reserve]

1st Data Analysis: The assignment is described below. It is due at the beginning of class one week after we finish this topic.

8. Assessing Hypotheses: Means and Graphs
Readings:
- SPSS, Ch. 3, pp.33-50.
- Essentials, Ch. 3, pp.62-72.
- Parker, Glenn R. 1980. "Sources of Change in Congressional District Attentiveness." AJPS 24(1):115-124.
- Powell, Lynda. "Constituency Partisanship in House and Senate Elections: 1972-2000." [On electronic reserve]
- Glazer, Amihai, and Bernard Grofman. 1987. "Two plus Two plus Two Equals Six: Tenure in Office of Senators and Representatives, 1953-1983." LSQ 12(4):555-563.

9. Statistical Significance: T-tests
Readings:
- SPSS, Ch. 6.
- Essentials, Ch. 5, and Ch. 6, pp 121-130.
- Payne, James. 1982. "Career Intentions and Electoral Performance of Members of the U.S. House." LSQ 7(1):93-99.

10. Chi-Square and Measures of Association
Readings:
- SPSS, Ch. 7.
- Essentials, Ch. 6, pp. 130-143.
- Review the use of chi-square in the Miller and Robyn article (Ethridge, Ch. 5 in #5 above).
- Boyett, Joseph. 1974. "Background Characteristics of Delegates to the 1972 Convention: A Summary Report…." WPQ 27(3):469-478. [On electronic reserve]

11. Explicating Relationships: Adding a Third Variable
Readings:

- SPSS, Ch. 5.
- Essentials, Ch. 4.
- Kritzer, Herbert, and Robert Eubank. 1979. "Presidential Coattails Revisited: Partisanship and Incumbency Effects." AJPS 23(3):615-26.

12. Using Statistics to Explicate Relationships
Readings:

- Abramowitz, Alan. 1981. "Choices and Echoes in the 1978 U.S. Senate Elections." AJPS 25(1):112-118.

2nd Data Analysis: The assignment is described below. It is due at the beginning of class one week after we finish this topic.

13. Research Paper Assignment
Final Data Analysis/Paper): The assignment is described below. It is due Monday, May 2, 2005 (4:00pm). Note that the data set contains a variety of variables, including the percentage of women in the chamber, which is the focus of the Norrander and Wilcox reading.
Readings:

- Norrander, Barbara, and Clyde Wilcox. 1998. "The Gender of State Power: Women in State Legislatures," in *Women and Elective Office* eds. Sue Thomas and Clyde Wilcox. [On electronic reserve]

14. Correlation and Simple Regression
Readings:

- SPSS, Ch. 8, pp. 110-124.
- Essentials, Ch. 7, pp. 144-158.
- Lewis-Beck, Michael, and Tom Rice. 1983. "Localism in Presidential Elections: Home State Advantage." AJPS 27(3):548-556.
- Lewis-Beck, Michael, and Tom Rice. 1982. "Presidential Popularity and Presidential Vote." POQ 46(4):534-537.
- Tufte, Edward. 1973. "The Relationship between Seats and Votes in Two-Party Systems." APSR 67(2):540-54.

15. Further Considerations: Non-linear Relationships and Outliers
Readings:

- Bauer, Monica, and John Hibbing. 1989. "Which Incumbents Lose in House Elections?" AJPS 33(1):262-271.
- Parker, Glenn. 1986. "Is There a Political Life Cycle in the House of Representatives?" LSQ 11(3):375-392.

16. Multiple Regression
Readings:

- SPSS, Ch.8, pp. 124-127, Ch. 9, pp. 128-133.
- Essentials, Ch. 7, pp. 158-160, 163-168.
- Hibbing, John, and John Alford. 1982. "Economic Conditions and the Forgotten Side of Congress…." BJPS 12(4):505-516.
- Jacobson, Gary. 1999. "The Effect of the AFL-CIO's 'Voter Education' Campaigns on the 1996 House Elections." JOP 61(1):185-194.

17. Interaction Effects in Multiple Regression

Readings:

- SPSS, Ch. 9, pp. 133-141.
- Essentials, Ch. 7, pp. 160-163.
- Hibbing, John, and Sara Brandes. 1983. "State Population and the Electoral Success of U.S. Senators." AJPS 27(4):808-819.
- Campbell, James. 1986. "Predicting Seat Gains from Presidential Coattails," AJPS 30(1):165-183.

18. Individual versus Aggregate Analysis

Readings:

- Schoenberger, Robert, and David Segal. 1971. "The Ecology of Dissent: The Southern Wallace Vote in 1968." MJPS (now AJPS). 15(3):583-586.
- Robinson, W.S. 1950, "The Ecological Correlations and the Behavior of Individuals." ASR 15(3):351-357.
- Hibbing, John, and John Alford. 1981. "Electoral Impact of Economic Conditions: Who Is Held Responsible." AJPS 25(3):423-439.

Data Analysis/Final Paper Assignments

1st Data Analysis

First, describe a hypothesis that you will test with either the American National Election Study data or the GSS data included with your SPSS textbook. Provide some rationale and explanation for your hypotheses.

Second, discuss the operationalization of the concepts in your hypothesis. That is, what variables are you using to measure the concepts in your hypothesis? Describe any problems of measurement related to your choice of variables or any problems of the sample you are using.

Third, generate the SPSS crosstab that tests your hypothesis. Include a table in your paper that presents the appropriate data from the crosstab. Be sure to label your table appropriately. In presenting your tables show only the percentages in the cells, not the raw numbers. Show the number of cases where you sum the percentages to 100%.

Fourth, explain the table. Was your hypothesis supported by the data or not?

Finally, are there possible alternative explanations for the association (if any) shown in your table?

This first data analysis exercise is typically shorter than later ones—usually the prose part is no more than three typed pages. The table might occupy an additional half or full page.

2nd Data Analysis

Repeat steps 1 through 3 from the first assignment using a different hypothesis and different variables. In step 3, also include an appropriate measure of association and the associated level of statistical significance.

Fourth, explain the results in the table and discuss your measure of association and test of statistical significance.

Fifth, explicate the relationship with another variable. For example, further test your hypothesis by controlling for an appropriate third variable to ascertain whether the original relationship you examined is spurious. Alternatively, you might look for an intervening variable to help explain your hypothesis. You could also examine a conditional relationship.

Sixth, present a table including a control variable and discuss it. Explain a measure of association and its statistical significance. What do you conclude?

3rd Data Analysis/Paper. Due 5/2/2005 (4:00pm)

For this assignment, use the data set provided on the state legislatures. Here, each case is a state legislative chamber. You must analyze the relationship among at least three variables—one of which must be one that you collect and add to the data set. Sources of data will be discussed in class. Your variables should be appropriate for use in a regression analysis.

First, describe a hypothesis that you will test. Provide some rationale and explanation for your hypothesis.

Second, discuss the operationalization of the concepts in your hypothesis. Describe any problems of measurement related to your choice of variables and their operationalization and any problems of the sample.

Third, discuss a regression equation testing your hypothesis and run the regression. Explain the coefficients, their statistical significance, and the adjusted R^2 for the equation. Does the result support your hypothesis? Show your results in a properly designed table (not simply inserting the SPSS output).

Fourth, add one or more variables to the regression equation. (You may use interactive terms if you wish to do so.) Explain why you have added the variable(s) and explain the results of the new regression equation.

Fifth, what do you conclude about the relationships you have examined?