

Political Science 210 Problem Set Number 3: Out October 26th, 2006

Political Science 210 Problem Set Number 3 Due: November 14<sup>th</sup>, 2006

STUDENT ID NUMBER: \_\_\_\_\_

Please do NOT place any other identifying information on this sheet or on any sheets which you may attach.

Please show all work necessary to reach your answer. You may attach sheets, typed or handwritten, to this sheet, or write on the back of these sheets.

1) Suppose you are hired as a consultant by a state governor, who is concerned that too few people in her state voted in the city elections. You ask for more information and find the following facts in a state elections guide:

Some 740,000 people voted in city elections last November. Our state has an adult population of 5,600,000. There were 1,200,000 people in our state registered to vote last year. State election laws restrict eligibility to those who are not in jail or mental hospitals, and have not been convicted of a felony-- 96% of our state's adult population. In the same November election, there was also a Senate contest, and 810,000 votes were tallied for that race, the highest turnout of any contest on the ballot.

The governor wants to know whether the state elections board should try 1) "motor voter" registration to make it easier to register, 2) "get out the vote" drives to get more registered people to the polls, or 3) get to know your city officials carnivals where people could meet their city council members and learn about why city government was important.

Using this equation (7.1 from Hinich and Munger) to analyze the problem (show your work). What would be your advice to the governor? Where is the most potential to increase turnout (ignore different costs between the methods)?

$$\frac{Vote_j}{Population} = \frac{Enfranchised}{Population} * \frac{Re gistered}{Enfranchised} * \frac{EnterBooth}{Re gistered} * \frac{Vote_j}{EnterBooth}$$

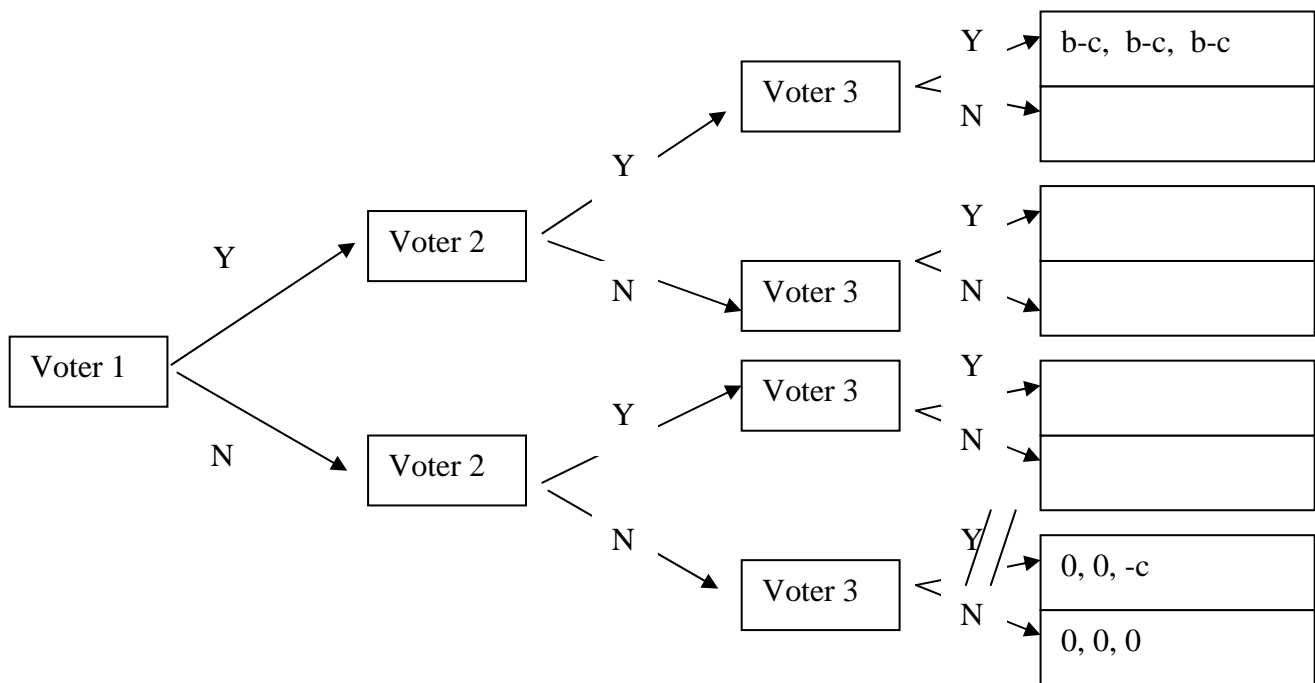
2) Is it better to vote first or vote last? Presume a vote in a three person legislature to raise pay. Each legislator wants the payraise because it will increase their salary by  $b$ . However, each has to endure the complaints from the constituency, thus paying cost  $c$ .

Is it better to vote first or last? Show your answer by backwards induction (described in Dixit and Nalebuff, Ch. 2). That is, fill out the decision tree below (which I have partially started) by completing the payoffs. Then sequentially eliminating paths (with slashes), starting with Player 3, then Player 2, then Player 1. This shows which player can guarantee himself or herself the highest payoff.

(Circle the right answer and fill in below)

IT IS BETTER TO VOTE FIRST

IT IS BETTER TO VOTE LAST



3. Fill in the blanks:

- a) Correlation is not \_\_\_\_\_
- b) Measurements are what we can observe; we can't observe: \_\_\_\_\_
- c) We use crosstabs to analyze what kind of variables? \_\_\_\_\_
- d) The intercept of the bivariate regression line is measured by what? \_\_\_\_\_
- e) The slope of the bivariate regression line is measured by what? \_\_\_\_\_

4. We are trying to figure out whether a Reed education is superior to a Lewis and Clark education. I have GRE scores from both schools. All I know about Lewis and Clark is that the average GRE score is 541. For Reed, the average GRE score is 585 with a standard error of 20.

State the null hypothesis, either verbally or mathematically.

Do you reject or fail to reject your null hypothesis? What is the value of the t-test that you produced in order to reach your conclusion?

Bonus (5 points): Ideally, what else would you like to know about the Lewis and Clark student scores?

5) A political scientist wanted to account for the percent of the total vote collected by various candidates for the U.S. House of Representatives. He gathered data on the following variables for Congressional contests in 2002:

Vote: Percent of the total vote received (0-100)  
 Incumb: Incumbency dummy variable (0 for non-incumbents, 1 for incumbents)  
 \$Spent: Candidate's campaign expenditures (in thousands of dollars)  
 Exper: Candidate's Experience dummy variable  
 (1 = Elected public official, 0 = Not an elected official)

He regressed "Vote" on the four independent variables and got the following results

<i>Variable</i>	<i>b</i>	<i>Std Error</i>	<i>T-Statistic</i>
<i>Incumbency</i>	12.00	4.30	2.79
<i>\$ Spent</i>	1.20	.50	2.40
<i>Expert</i>	1.50	1.30	1.15
<i>Expert* \$Spent</i>	.05	.13	.38
<i>Constant</i>	25.4	4.10	6.19

N = 714 R<sup>2</sup> = .42                      Standard Error of Regression = 8.1

He made the following conclusions, based on the analysis. In each case, the statement is either correct, or ONE WORD needs to be changed or ONE WORD needs to be inserted. Either note that each statement is correct, or else indicate what word needs to be changed or inserted.

- a) The equation accounts for 42% of the candidate expenditures.
  
- b) Being an incumbent increases your vote by 12 points, the same amount as ten dollars in campaign expenditures (\$Spent).
  
- c) Elected officials received 1.5% more of the vote than unelected officials.
  
- d) The coefficient for Exper\*\$Spent is statistically significant.

6) SDA Exercises. Use the data available at [sda.berkeley.edu](http://sda.berkeley.edu) to answer the following questions. PLEASE READ THE QUESTION CAREFULLY AND MAKE SURE YOU KNOW EXACTLY WHAT I WANT. IF YOU HAVE ANY QUESTIONS, PLEASE EMAIL ME OR EVA.

ALL QUESTIONS REFER TO THE 2004 National Election Study. FOR ALL RUNS, INCLUDE THE PRE-ELECTION SURVEY WEIGHT (v101--this is the default option). Each answer is worth 3 points.

a) Run a crosstab of p210-bushvote x p210-black.

What percentage of blacks voted for George Bush? \_\_\_\_\_

Is the difference in black and non-black voting statistically significant?    Y        N

b) Run difference of means analysis, where the dependent variable is “p210-abs-ftdiff” (the absolute value of the difference in feeling thermometer scores between Bush and Kerry), and the row variable is “p210-didvote”.

What was the average feeling thermometer difference among those who DID NOT VOTE? \_\_\_\_\_

What is the t-statistic for the group who DID VOTE? \_\_\_\_\_

c) Run a regression, where the dependent variable is “p210-didvote”, and the three independent variables are “p210-black”, “p210-hispanic”, and “p210-polinfo”. (You may want to view these variables to see how they were coded and what they mean.)

What percentage of the variance in voting turnout is explained by this model? \_\_\_\_\_

If we move an individual two points up the scale of political information, how much does their predicted level of turnout increase? \_\_\_\_\_

You should see that our model predicts that Hispanics, when compared to the non-black and non-Hispanic population, are 9.6% less likely to vote. Is this a statistically significant result, using the conventional 95% threshold for statistical significance? \_\_\_\_\_

BONUS (4 points): What does the number “.557” tell us in the column under “B”?