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Applied Political Science Research Methods

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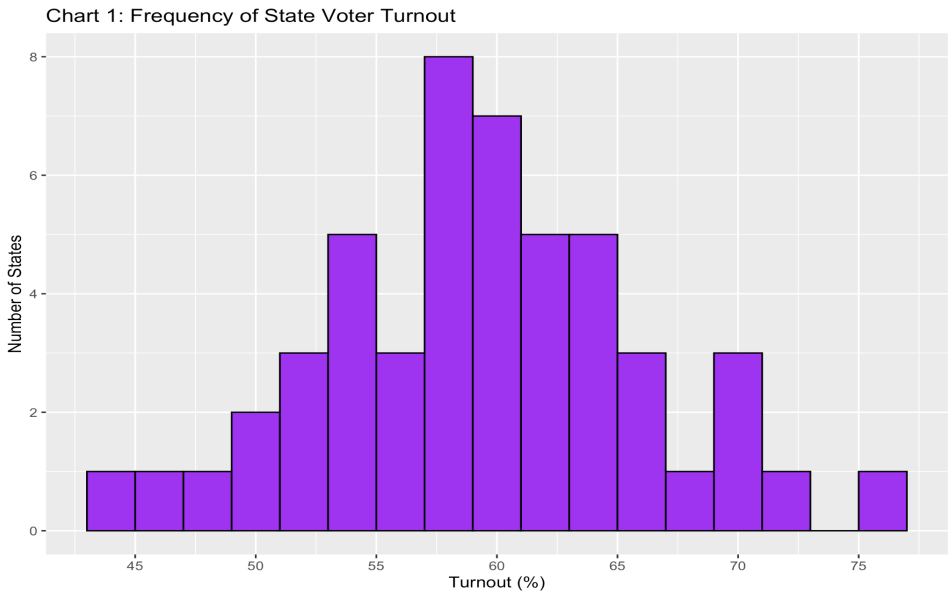
28 October 2021

Homework 3

1. Explaining Voter Turnout



1.1. Histogram for Frequency of State Percent Voter Turnout. Mean(turnout) = 59.96%. Standard deviation(turnout) = 6.59%.

1.2. For both models, the dependent variable will be percent voter turnout. For the first bivariate model, the independent variable is region, and this gives insights into regional effects on state voter turnout. For the second multivariate model, region is the independent variable along with hsdiploma, which measures the percent of the state population with a high school diploma; density, which measures state population density or, in other words, how close people live together within a

state; and margin, which measures each state's average percent margin of victory across all electoral races.

Table 1: OLS Regression on Voter Turnout

	Bivariate			Multivariate		
Predictors	*Estimates*	*std. Error*	*p*	*Estimates*	*std. Error*	*p*
(Intercept)	57.56 ***	1.57	**<0.001**	-2.95	23.47	0.900
density				0.00	0.00	0.368
hsdiploma				0.81 **	0.28	**0.005**
margin				-0.11	0.07	0.093
South	*Reference*			*Reference*		
West	0.67	2.34	0.776	-4.88	2.67	0.075
Midwest	6.02 *	2.39	**0.015**	-0.86	2.90	0.767
Northeast	4.33	2.61	0.104	-2.69	3.31	0.421
Observations	50			50		
R^2 / R^2 adjusted	0.151 / 0.096			0.353 / 0.263		

** p<0.05 ** p<0.01 *** p<0.001*

1.3. Starting with the bivariate model of region and turnout, the intercept coefficient, significant to three levels with a p-value of less than 0.001, shows that our reference region, the South, has an expected voter turnout of 57.56% holding all other regions constant. The region with the highest voter turnout then is the Midwest. The Midwest's coefficient of 6.02, significant to one level with a p-value of 0.015, corresponds to a 6.02% higher state voter turnout than the reference region, the South, holding all other regions constant. The West only corresponds to a 0.67% larger turnout than the South (holding all other regions constant), and the Northeast corresponds to a 4.33% larger turnout than the South (holding all other regions constant). For the Northeast then, the expected voter turnout for a state within the region is about 61.9%. For the second multivariate model, the coefficient value of 0 for population density, which is not significant with a p-value of 0.368, corresponds to a no-effect relationship between population density and percent voter turnout, holding all other variables constant. This illustrates that the urban or rural-ness, or spread of population, within a state has

no effect on state voter turnout. For high school diploma, the coefficient value of 0.81, which is significant to two levels with a p-value of 0.005, shows that a 1% increase in the amount of state population with a high school diploma corresponds to a 0.81% increase in voter turnout, holding all other variables in the model constant. This shows that, to two significance levels, a more educated state will, on average, have a higher voter turnout, so education seems to play a role in voter turnout as the relationship is not likely to be due to chance. For margin, the value of -0.11 (significant to no level) shows that a 1% increase in average state margin of victory across all electoral races corresponds to a 0.11% decrease in state voter turnout, holding all other variables constant. This value, while insignificant, shows that if states have larger average margin of victories, meaning one party usually wins by a greater margin, then people may stop voting as they feel that if margins are usually big in one party's favor, then they may not have to vote whatsoever. However, this relationship, as reflected by its p-value, has a 9.3% probability of being a result of chance or randomness.

2. Feelings About Hillary Clinton

    2.1. Recoding variables in R. Creating a female dummy variable to look at the effects of gender. Create an age variable to look at the effects of age. Create a college variable to look at the effects of college-level education.

    2.2. Estimate a multivariate regression with fthrc (feeling toward Hillary Clinton on a scale from 0 to 100) as the dependent variable, and the independent variables are: age, female, and college. Then, estimate a multivariate interaction model with the

same dependent and independent variables, but the female and age variables have an interaction.

Table 2: OLS Regression and Age/Gender Interaction

	Non-Interactive			Interactive		
Predictors	*Estimates*	*std. Error*	*p*	*Estimates*	*std. Error*	*p*
Intercept	45.34 ***	3.19	**<0.001**	47.69 ***	4.32	**<0.001**
Age	-0.12 *	0.06	**0.049**	-0.18	0.09	0.054
Female	6.80 **	2.12	**0.001**	2.33	5.91	0.693
College	-1.28	2.38	0.591	-1.15	2.39	0.631
Age*Female				0.10	0.13	0.418
Observations	1178			1178		
R^2 / R^2 adjusted	0.012 / 0.009			0.012 / 0.009		

** p<0.05 ** p<0.01 *** p<0.001*

2.3. For the non-interactive model, the intercept value of 45.34, significant to all three levels with a p-value less than 0.001, shows that the expected feeling toward Hillary Clinton for a newborn, non-educated male is 45.34, so young, non-educated males are expected to feel slightly unfavorable to Hillary Clinton. For age, the value of -0.12 shows that for each 1 year increase in age, males' (female would equal 0 meaning a male respondent) feeling toward Hillary Clinton is expected to decrease by 0.12, holding all else constant, and this coefficient is significant to one level with a p-value of 0.049. So, older male individuals are expected to have falling favorability toward Hillary Clinton. The female coefficient value of 6.8, significant to two levels with a p-value of 0.001, shows that newborn females with no education are expected to have a 52.14 feeling toward Hillary Clinton, so women, in this model, are expected to be inherently more favorable to Hillary Clinton. The college coefficient value of -1.28 shows

that newborn males with a college education are expected to have a feeling toward Hillary Clinton of 44.06, so the more educated young males are, the more likely they are to dislike Hillary Clinton. However, this coefficient is insignificant with a p-value of 0.591, so the value could be entirely due to chance. Moving onto the interactive model, the intercept value of 47.69 shows that newborn males with no education are expected to have a feeling toward Hillary Clinton of 47.69, so the interactive model shows that young uneducated males are slightly more neutral toward Hillary Clinton than the non-interactive model but still slightly unfavorable. The age coefficient value of -0.18 shows that, for uneducated males, a one year increase in age corresponds to a 0.18 decrease in feelings toward Hillary Clinton, holding all other variables constant. This coefficient is insignificant, but it is right on the brink of one level of significance. For the female coefficient, the value of 2.33, which should be interpreted as 2.43 since we add 0.1(1) for the interaction since the female variable is present, shows that newborn, uneducated females are expected to have a feeling of 50.12 toward Hillary Clinton. This coefficient is now insignificant (whereas the first model's female variable was significant), but it shows that our interactive model places less importance on the effect of being a female and predicts newborn, uneducated females to be just about neutral toward Hillary Clinton. The college coefficient value of -1.15 shows that college-educated, newborn males are expected to have a feeling toward Hillary Clinton of 46.54, holding all else constant. This coefficient is insignificant though, so it is likely due to chance. For the age and female interaction, the effect of age on females comes out to -0.08, so for each one year

increase in age, uneducated females' favorability toward Hillary Clinton is expected to fall by 0.08 feeling thermometer points, holding all other variables constant. For uneducated men, the effect of age shows that a one year increase in age corresponds to a 0.18 decrease in favorability points toward Hillary Clinton, holding all else constant. So, the effect of age on women is slightly smaller in magnitude than the effect of age on men, but both values show that for each one year increase in age, both males and females are expected to have decreasing favorability toward Hillary Clinton. So, generally, our model shows that as people age, they will feel less favorable toward Hillary Clinton, but the interactive model only has a statistically significant intercept. So, all values and effects should be analyzed with some skepticism.