**Homework 9**

**Psychology 610**

**Due: 8 November 2017, 5:00pm**

**Data analysis: Home for the holidays**

*Background:* A psychology professor notices that her students leave for and return from the long Thanksgiving weekend in completely different emotional states. The professor asks one of her graduate students to study the factors that contribute to this change in emotional state. After doing some background research, the student decides to conduct an experiment in which participants are asked to record the conversation at their family’s Thanksgiving dinner. When listening to these recordings, he codes for the amount of time the families spend talking about politics, football, and the participant’s relationship status. He also asks participants to report the number of liberals at the meal, number of conservatives at the meal, and their own political orientation and relationship information. They also filled out a measure of subjective well-being (swb) to quantify their affect. The grad student recruits you to assist with the data analysis.

For this assignment, we will focus on the following two hypotheses:

1. More time spent talking about relationships will have a negative effect on swb, and this relationship will be stronger for students who have shorter relationships.
2. More time spent talking about politics will have a negative effect on swb, and this effect will be stronger for families that are more evenly ideologically divided.

Codebook for Study 1:

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| --- | --- | --- |
| **Variable Name** | **Specification** | **Values** |
| polTime | Time spent talking about politics (minutes) | 5.31 – 59.49 |
| footTime | Time spent talking about football | 0 – 46.82 |
| relTime | Time spent talking about students’ relationship status | 0 – 37.76 |
| numlibs | Number of liberals at Thanksgiving dinner | 0 – 11 |
| numcons | Number of conservatives at Thanksgiving dinner | 0 – 12 |
| ownpol | Students’ own political orientation | 0 = liberal1 = conserv. |
| ownrel | Number of months the student has been in a steady relationship | 0 – 15 |
| swb1-7 | Items of the subjective well-being scale | 1 - 7 |

1. Read in the data and inspect relevant univariate and bivariate statistics. Note any strange distribution shapes or strong correlations.
2. Create a composite swb score.
	1. First, calculate the alpha value. Write a sentence in your R script noting which items you believe should be reverse-coded (the graduate student running the study lost the coding scheme). If necessary, rerun the alpha command with the correctly specified reverse items.
	2. Should any of the items be excluded? Write a sentence in your R script saying which item(s) you plan to remove.
	3. Make new variable called “swbM” to represent the composite swb score, taking into account your conclusions from parts a and b.
3. Test hypothesis 1: More time spent talking about relationships will have a negative effect on swb, and this relationship will be stronger for students who have been in relationships for less time.
	1. Prepare your variables as necessary to run the model needed to test this hypothesis.
	2. Run the appropriate model to test this hypothesis.
	3. Interpret each of the regression coefficients (except *b0*) in your R script, noting their significance. Then, note whether the data are consistent with the hypothesis.
	4. Test the simple effect of time spent talking about relationship on swb for single students (i.e., relationship length of 0 months). Write a short sentence in your R script describing what you found.
4. Test hypothesis 3: More time spent talking about politics will have a negative effect on swb, and this effect will be stronger for families that are more ideologically divided.
	1. Create a variable called “polar” by subtracting the number of conservatives from the number of liberals and then taking the absolute value. Look at the values of this variable, then write 1-2 sentences in your R script explaining what this variable represents (i.e., what does a given score on this variable mean in real-life terms?).
	2. Prepare your other variables as necessary to run the model needed to test this hypothesis.
	3. Run the appropriate model to test this hypothesis. Note whether the data are consistent with the hypothesis.
	4. Test the simple effect of time spent talking politics on swb for families that are perfectly ideologically divided (i.e., have the same number of liberals and conservatives). Summarize the result in a short sentence in your R script.
5. Choose either of the two hypotheses (i.e., those from questions 3 or 4) generate a publication-quality graph representing your results.
6. Write a results paragraph in your Word doc. The first sentence should provide some background or orienting information, so a naïve reader could understand what’s going on.
7. Write how long it took you to complete this assignment in your Word doc.