**Lab 3: Project 1: Data Analysis: Bivariate Correlational Designs**

**Overview:** Today we will input and analyze the data for our project on the relationship between competitiveness and aggressive driving. To do that, you’ll first need to know what the variables are and how to input them into excel, which we can then import into Jamovi.

**The Data Set Codebook:**

Column A: Pn = Participant number. You’ll find this in red in the upper right corner

Column B: order = **Order of surveys**. If there is nothing in the lower right corner of the first page enter a 1. If there is a “2” or actually part of a 2 in the lower right corner, enter a 2.

Columns C – P: c# = the individual items for the **competitiveness scale**. Simply enter whatever the respondent put down. If there is a blank, leave that entry blank as well. IMPORTANT: Make sure you are entering the right scale here. For half of the packets this will be the first scale. For the other half it will be the second one. It has 14 items.

Columns Q – AO: d# = the individual items for the **driving scale**. Simply enter whatever the respondent put down. If there is a blank, leave that entry blank as well. IMPORTANT: Make sure you are entering the right scale here. For half of the packets this will be the first scale. For the other half it will be the second one. It has 25 items.

Column AP**: age:** Enter whatever the respondent wrote. Leave blank if missing.

Column AQ: gender. Use the following codes:

1 = Female

2 = Male

3 = non-binary

4 = Transgender

5 = other

6 = did not disclose

Leave blank if missing.

Column AR: **race.** Use the following codes:

1 = Black or African-American

2 = White

3 = Hispanic

4 = Latina/o/x

5 = Asian

6 = Bi or multi-racial

7 = Other

Leave blank if missing.

Column AS**: years drive** = Number of years they’ve been driving. Enter whatever the respondent wrote. If it’s in half years, use .6 (e.g., three and ½ years = 3.6)

**Calculating the Participant’s Score**

Just like we did in a previous lab, we will first need to reverse score some items, then conduct an internal reliability analysis (Cronbach’s alpha), then compute a single new variable.

Below are the items for each scale that must be reverse coded. That is, a 1=5, 2=4, 3=3, 4=2, 5=1.

**Competitiveness scale:** REVERSE CODE (ONLY) the FOLLOWING NINE ITEMS:

c4, c6, c7, c8, c10, c11, c12, c13, and c14.

Name the recoded items the same as the others, but with an r after it. So, c4r, c6r, and so on.

NOTE: After the recoding, higher scores mean higher in competitiveness.

After recoding, use these nine recoded items and the other 5 to conduct your Cronbach’s alpha. Assuming that’s close to .70, we will then compute a new single composite variable.

To do that, simply sum all the items (that is, the reverse coded ones and the other 5 original items).

\*NAME this new item you compute: **Compete**

**Driving Scale** has no reverse coded items. Higher scores mean more aggressive driving.

So, simply run the Cronbach’s alpha and then compute a sum. Label this new variable **Driving**

**Run the analysis:**

So, now you are ready to run the Pearson’s correlation using these two new variables.

\*\*GO O THE NEXT PAGE\*\*

I left this here from our previous lab so that you can use it as an example. You should also refer to the PPT I sent about this lab.

**Calculating the Participant’s Score**

As we discussed earlier, we are using scales to measure our two key variables because they provide us with more precision than if we used single-item questions for each variable. When we use a Likert scale, we determine our variable’s measurement by summing the responses to all of the individual items on the scale (or by creating a mean). For our scale, we want higher total scores to indicate that the participant has a more positive attitude toward joining a Greek organization. But we must be careful because we worded some of the items in the opposite direction (e.g., “Fraternities and sororities are a waste of time.”). Participants who are very interested in “going Greek” will tend to disagree with the opposite direction items, meaning that they will choose response alternatives associated with lower numerical values, not higher ones. Suppose we have a participant with such a positive attitude about joining a Greek organization that he or she strongly agrees with the items worded in the positive direction (i.e., higher agreement indicates positive attitude) and strongly disagrees with those worded in the opposite direction (i.e., higher agreement indicates a negative attitude). If we simply sum the responses, they will essentially cancel each other out, resulting in the inaccurate conclusion that the person is ambivalent about joining a fraternity or sorority.

To prevent this from happening, we use a technique called **reverse-coding** before we sum participants’ responses on the scale. To accomplish this, we assign the following numerical values to our positive direction items:

1 = Strongly disagree

2 = Disagree

3 = Neither agree nor disagree

4 = Agree

5 = Strongly agree

**Reverse-coding.** a scoring strategy where more negative response alternatives are assigned higher numerical values and more positive response alternatives are assigned lower numerical values; used to minimize the potential for an acquiescent response set.

However, for the items worded in the opposite direction, we re-assign the numerical values this way:

5 = Strongly disagree

4 = Disagree

3 = Neither agree nor disagree

2 = Agree

1 = Strongly agree

As you can see, we assign the higher numerical values to the low end of the response alternatives for items worded in the opposite direction. By doing this reverse-coding, when we sum the participants’ responses, we can be certain that higher scores represent a more positive attitude toward joining a fraternity or sorority. Now we know that higher scores indicate what we hoped (i.e., a more positive attitude toward joining a Greek organization).

Ok, so now you understand the general idea. Your task today is to analyze the data set I’ve provided. You will have to (a) reverse code some questions) and create a new variable that sums BOTH the Self-Concept Clarity scale and the Desire to join Greek organizations scale. The steps are:

1. Identity which variables need to be reverse coded and conduct that in Jamovi.

2. BEFORE we create the sum, we want some evidence that each item actually measures the construct reliably. That is, if we have 12 items all intended to measure SCC, then participants ought to answer each item in a similar way. For example, those with high self-concept clarity ought to answer each item on the high end of the scale, and so on. To do this we conduct what is known as an “internal reliability or consistency analysis.” The most common one used in called Cronbach’s alpha. So, now we will do that. IF this alpha is about .70 or higher, that’s a good sign that the measure has good internal reliability, which means we can then create the combined (“composite”) variable.

3. Now, create the two combined variables

4. Conduct a correlational analysis on these two variables.

5. Write a sentence describing the result.

**This is the Self-Concept Clarity Scale**

Graphical user interface, application, Word

Description automatically generated