**PSYC\*6060 Lab Exam Practice**

Below are exercises I strongly advise conducting before the next lab exam.

Be aware that when you are starting to use R there are many hurdles as you learn to get all the small details correct – so be sure to allocate sufficient time over several days to work on this practice exercise.

*You can get help via office hours (indicated in my email). As well, you can use the general 6060 Slack discussion group to ask questions to the class in general. It’s important to learn how to solve R issues together – Slack is an excellent way to do that. I will direct any email questions I receive to the Slack group or office hours.*

You should be able to do all of these tasks (and do so quickly) in order to obtain a satisfactory grade on the lab quiz. The actual lab quiz will of course be shorter, but it will assume mastery of this material. Additionally, the lab quiz will be based on the premise that you should have scripts from this exercise that you can quickly adapt (rather than creating them from scratch).

**1. Creating an analytic data file**

You have been sent a data file called “raw\_data.csv”; based on this data create a data   
file called “analytic\_data.csv”

This data file should have the following final variable names:

sex

pos\_affect  
neg\_affect  
Neuroticism  
Extraversion

The sex variable is scored such that 1 indicates Male and 2 indicates Female.

Create a negative affect scale (na\_affect) based on the adjectives afraid, angry, anxious, and ashamed.

Create a positive affect scale (pa\_affect) based on the adjectives delighted, elated, enthusiastic, and excited.

Adjectives range in score from 0 to 3.

Neuroticism and Extraversion range in score from 0 to 24.

Be sure to check for out of range values, etc. when creating your scales.

Recall the command below for obtaining descriptive statistics.

psych::describe(my\_items)

**2. Creating an analysis script**

You will need to create results for the overall data, just males, and just females. Therefore you will need to create three data sets with the names below. Note that when you create the data sets for males and females, those data sets should not include the sex column (since it would be the same for everyone in the data set).

analytic\_data

analytic\_data\_male

analytic\_data\_female

Create an APA style correlation table (based on analytic\_data) for MS Word (i.e., .doc) for each of the three data sets (i.e., overall, males, females). The files for these tables should be called:

Table\_1\_Overall.doc

Table\_2\_Male.doc

Table\_3\_Female.doc

Create a graph (based on analytic\_data) that corresponds to each of these table using the psych::pairs.panels command. The files for these graphs should be called:

Figure\_1\_Overall.tiff

Figure\_2\_Male.tiff

Figure\_3\_Female.tiff

For analytic\_data\_female, use ggplot2 (i.e., tidyverse) to create an APA style histogram of Neuroticism scores. Save this file with the name: "Figure\_4\_Neuroticism\_Histogram\_Female.tiff". The image should be 6 inches by 6 inches. Make sure this histogram touches the x-axis (i.e., it is not floating).

For analytic\_data\_female, use ggplot2 (i.e., tidyverse) to create an APA style histogram of negative affect scores. Save this file with the name: "Figure\_5\_Neuroticism\_Histogram\_Female.tiff". The image should be 6 inches by 6 inches. Make sure this histogram touches the x-axis (i.e., it is not floating).

For analytic\_data\_female, use ggplot2 (i.e., tidyverse) to create an APA scatter plot of negative affect scores against Neuroticism scores. Negative affect should be on the x-axis. Ensure there is a regression line on the graph (without the confidence interval). Save this file with the name: "Figure\_6\_NA\_Neuroticism\_Scatter.tiff ". The image should be 6 inches by 6 inches.

**3. Bonus: Creating an rmarkdown document**

Examine the file “rmarkdown\_required\_output.pdf”. You need to recreate this document using rmarkdown.

Normally you would use File > New File > RMarkdown to make an rmarkdown document. However, to make things easier, I have started the file for you. I have attached the file “rmarkdown\_starter.Rmd”. You can simply load this file in RStudio and modify it to create output that matches “rmarkdown\_required\_output.pdf”.

You can copy and paste the code you used above to make the needed modifications to “rmarkdown\_starter.Rmd”.

Note that once you create a graph with ggplot or qplot (e.g., called my.hist) you make make it appear in rmarkdown by simply using the command: print(my.hist)

Once complete, create a copy the output and name it: “rmarkdown\_practice\_1.pdf”