To-Do List

Complete Readings

This week you will read about the "family" of regression analyses. The readings for this unit will introduce us to the remarkably powerful "family" of analyses known as regression analyses. In regression analysis, we explore how our predictor variables may differentially contribute to accurate prediction with our outcome (criterion) variable. We will learn how predictor "weights" are found and interpreted, and how we conduct regression analysis with two predictors. Read Chapters 9 and 11 in your text, Applied Statistics. For a review of the reading, refer to the Chapter 9 and Chapter 11 PowerPoints in Doc Sharing.

Participate in Discussion Threads

Regression Analysis:
1. In your area of interest, generate a research question that would be appropriate for a regression analysis. Consider:
   a. What are your predictor variables?
   b. What are your criterion variables?
   c. Discuss how your predictor variables might be differentially "weighted" and why.
   d. Give examples of hypothetical regression coefficients for your predictor variables and provide a brief summary of how you would interpret them.
2. Describe a hypothetical dataset you might collect. What are some assumptions made by regression analyses that you would need to examine in your data?
   a. How would you "test/examine" whether these assumptions are violated in your data?
   b. What would you expect to find regarding these assumptions in your dataset?

Attend Seminar
Seminar Topic
At the graduate level, seminars serve two purposes: they provide you with an opportunity to discuss the concepts from the reading as well as to apply, synthesize, and evaluate those concepts. The seminars will challenge you to analyze problems and situations that are similar to typical academic and clinical settings. Come to seminar prepared to discuss the following:
1. When is regression analysis appropriate?
2. How is the idea of semi-partial or “part” correlation critical to regression analysis?
3. Discuss partitioning of variance when two predictor variables are employed.

Project
This is a Course Level Assessment assignment.

SPSS dataset complete_mooney_bp.sav, which can be found in Doc Sharing, was collected by Ms. Kim Mooney in 1989 as part of completing her dissertation at UNH. The dataset was collected to assist in exploring the relationship between the “effect of social stress on blood pressure.” This was investigated by collecting data at six different points (i. preliminary baseline, ii. second baseline, iii. rehearsal and preparation for role play, iv. stressful role play exercise, v. first baseline follow-up, vi. second baseline follow-up). You will need to install the PASW Grad Pack 18.0 in order to download the dataset.

Ms. Mooney collected data on the Rathus Assertiveness scale and the Crowne Marlowe Social Desirability Scale, which contained subscales for “anger in” (the tendency to hold anger “in”), and “anger out” (the tendency to “express anger openly”).

Employing this data, we would like to explore the relationship between assertiveness and the tendency to express anger openly. We will examine a Pearson’s r to help us examine this relationship.

Then, we will examine the relationship between assertiveness and whether one holds anger “in.” To explore this question, we will run a bivariate regression procedure.

Open the SPSS dataset complete_mooney_bp.sav into SPSS.
Choose "analyze," then "correlate," then "bivariate." Move the variables "rath" and "axout" into the “Variables” window (these are respectively the measures of assertiveness and the tendency to “express anger openly.”)

Make sure “Pearson” is checked in the Correlation Coefficient window. Choose "options," check "means and standard deviations" in the Statistics window, then check "continue," then "OK" to run the analysis.

Based on this analysis, answer the following questions:

1. What are the means and standard deviations of the two variables, “rath” and “axout”?

2. What is the Pearson r?

3. What is the p value ("significance level")? What does this p value mean?

4. How does the n (sample size) of this sample affect the r and p values?

A. Now, we turn our attention to our bivariate regression question. Is there a relationship between assertiveness and whether one holds anger “in”?

Reopen the SPSS dataset complete_mooney_bp.sav.

Choose "Analyze," then "Regression," then "Linear."

Select the variable "crowne-marlowe (mar)" and move it into the "Dependent" window.

Select the variable "axin," and move it into the "Independent(s)" window.

Select "Statistics," then "Model fit," "Descriptives," then "Confidence Intervals"

Select "OK" to run the analyses.

On the basis of the above, answer the following questions:
1. What is R and what does this particular R mean?

2. What is R2 and what does this particular R2 mean?

3. What is F?
   a. What does this F mean?
   b. What is the p value associated with this F?
   c. What does this p value indicate about the associated F value?

4. What is the Standardized Coefficient (Beta weight) for the variable "axin"?
   a. Is it significant?
   b. What does this “significance” mean?
   c. What do the “standardized” versus “unstandardized” coefficients mean?

5. What is the Confidence Interval for the variable "axin?" What do the Confidence Intervals tell us about this predictor?

6. Verbally summarize what these results “mean” for your reader.