To-Do List

Complete Readings

The reading in this unit examines the useful, powerful procedures of Factor Analysis (FA) and Principal Component Analysis (PCA). These procedures are exciting as they assist us in examining meaning or underlying constructs in our data. Often, when more than one variable is examined in a study, the particular combination of variables studied may all measure the same underlying psychological construct. For example, employing educational level attained, health status, and type of employment (blue versus white collar) may all tap into the larger construct of socioeconomic status. These procedures allow us to see into the data and evaluate underlying meaning. Read Chapter 18 in your text, Applied Statistics. For a review of the reading, refer to the Chapter 18 PowerPoint in Doc Sharing.

Participate in Discussion Threads

Psychological Test:
In your area of interest, design a brief psychological test that will measure a psychological construct of interest.

a. List 10-20 questions in a consistent format you would use for your instrument.
b. If you ran a factor analysis on a dataset (n=100) where you administered your instrument, what three factors might you expect to appear as a result of your factor analysis?
c. What specific components of the analysis would you employ in interpreting the resulting factors in your instrument?
d. Write a brief verbal description of how you would describe, based on factor loadings, what your test measures.

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. Examine the idea of path models in exploring the fit between data and theory.
2. Explore the idea of factor loadings and how they contribute to the examination of psychological constructs.
3. Why is data reduction important in theory testing?

Project

We will return to Ms. Kim Mooney’s dataset complete_mooney_bp.sav (from Unit 5). You will need to install the PASW Grad Pack 18.0 in order to download the dataset. We are now interested in examining what common underlying factors may exist (what commonalities may be measured) between the Rathus Assertiveness Scale, the Crowne-Marlowe Social Desirability Scale, scores on the “Anger In” scale, and scores on the “Anger Out” scale. We suspect that perhaps one to three underlying factors are all being measured by the instruments.

Open the SPSS dataset complete_mooney_bp.sav. Select "Analyze," then "Dimension Reduction," then "Factor."
Move the variables "crowne-marlow (mar)," "axin" (anger in scale), "axout" (anger out scale), and "rath" into the Variables window.
Select "Descriptives," then "Statistics." In the "Statistics" window, select "Univariate Statistics," and "Initial Solution." In the "Correlation Matrix" window, select "coefficients," and "significance levels." Then select "continue."
Select "Extraction," then select "Scree Plot." "Continue."
Select "OK" to run the analyses.
On the basis of the above, answer the following questions:
1. What are the correlations between the four variables? Are any significant?
2. Examining the Component Matrix, verbally speculate as to what
3. What are the "% of variance" and the "cumulative %" for each of the factors? What does this tell us?