APPLIED STATISTICS INSTRUCTION SHEET

SAMPLE SIZE ESTIMATES

Instructions

There are several ways to estimate need software package. Feel free to use any of the techniques below.

Method #1: G*Power

G*Power is a free statistical package that can be used to estimate a needed sample size. A link to the software package and instructions for some procedures can be found The software gets a bit complicated depending on what you want to do, but here are some general

Useful Links
- G*Power software
- UCLA Statistical Methods and Data Analytics examples
- Walden University Academic Skills Center. (2015). *G*Power: Calculating sample size in multiple linear regression.* YouTube.
- Davey. (2015). *GPower z-test: Logistic regression (continuous predictor).* YouTube.
- Davey. (2016). *GPower z-test: Logistic regression (dichotomous predictor).* YouTube.
- Davey. (2016). *GPower F-test: Repeated measures, within-between interaction for ANOVA.* YouTube.

Some Comments on Usage
- Set the model to estimate your most complicated model.
  - Linear multiple regression, ANOVA, ANCOVA, MANOVA (including repeated measures) can be found under F tests.
- The type of power analysis should be set to a priori.
- Desired statistical significance: α err prob = .05. This is the standard p-value. If you think you have a larger sample (say 5,000 observations or more, you may wish to use a lower number).
- Desired statistical power: Power (1- B) err prob = .80. The normal assumption for statistical power is .80. This means you are seeking to get a .05 statistical significance level (or another level that you designated) at least 80% of the time.
- Your effect size or odds ratio should be set the the threshold you seek to achieve. If there is a strong relationship present, you can find it with a smaller sample, but keep in mind that many relationships in the behavioral sciences are not strong.

SPSS Power Analysis

SPSS Extensions has a Power Analysis feature that can be installed into Analyze tab in the menu. Instructions for using can be found here.

Sample Size Calculator

A web-based calculator can be found at calculator.net. Enter your assumptions except for Population Size, then Calculate.