

Chapter 6 – Selecting and Interpreting Inferential Statistics Study Guide

OBJECTIVES:

The student will be able to:

1. Identify the general design classification for difference research questions.
2. Explain the distinctions of within subjects design versus between groups design classifications.
3. Utilize a decision tree (Figure 6.1) to guide the selection of appropriate inferential statistics (Tables 6.1-6.4).
 - a. Identify the research problem.
 - b. Identify the variables and their level of measurement.
 - c. Select appropriate inferential statistic.
4. Describe the relationship between difference and associational inferential statistics as a function of the general linear model.
5. Interpret the results of a statistical test.
 - a. Determine whether to reject the null hypothesis.
 - b. Determine the direction of the effect.
 - c. Evaluate the size of the effect.
6. Discuss the relationship between statistical significance and practical significance.

TERMINOLOGY:

- variables
- levels of measurement
- descriptive statistics
- inferential statistics
 - difference inferential statistics
 - associational inferential statistics
- difference question designs
- between group designs
- within subjects design (repeated measures design)
- single factor designs
- between groups factorial designs
- mixed factorial designs
- basic (bivariate) statistics
 - phi or Cramer's V
 - eta
 - Pearson product moment correlation
 - Kendall's tau or Spearman rho
- complex statistics
 - factorial ANOVA
 - multiple regression
 - discriminant analysis
 - logistic regression

- MANOVA
 - ANCOVA
- loglinear
- general linear model
- statistical significance
 - critical value
 - calculated value
 - statistically significant
 - Sig.
- practical significance
- effect size
 - *r* family of effect size measures
 - *d* family of effect size measures
- confidence intervals

ASSIGNMENTS: See additional activities and extra SPSS problems for assignment examples.