

Multivariate Design & Analysis

Claudia J. Stanny
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Multivariate Analyses

- ☞ Multiple dependent measures
- ☞ Options for data analysis
 - ◆ *Separate ANOVAs or ANCOVAs for each dependent measure*
 - ◆ *MANOVA or MANCOVA*
 - ◆ *SPSS will automatically conduct a MANOVA as part of a repeated measures analysis*
 - *Repeated measures appear as multiple dependent measures*

Multiple Dependent Variables in a Factorial Design

- ☞ MANOVA or separate ANOVAs for data analysis?
- ☞ Are you interested in hybrid variables created by combining dependent measures?

Correlational Designs

- ☞ Multiple regression
 - ◆ *Several predictor variables*
 - ◆ *Identify linear model that best predicts the target (criterion) variable*
 - ◆ *Each additional predictor variable should produce a significant increase in variance accounted for (R^2)*
- ☞ Discriminant analysis
 - ◆ *Target variable is categorical*
- ☞ Canonical correlation
 - ◆ *Correlations between a set of predictor variables and a set of criterion variables*

Factor Analysis

- ☞ Patterns of correlations among test items examined
- ☞ Identify clusters of items that correspond to a common element or dimension within the test
- ☞ Construct measured by the test may be found to be composed of several components (factors)
- ☞ Factor Loadings
 - ◆ *Correlation between items and a factor*
- ☞ Exploratory Factor Analysis
- ☞ Confirmatory Factor Analysis

Path Analysis

- ☞ Use of patterns of correlations to model potential causal relations
- ☞ Models to be tested are generally developed independently of the correlational data used to test them with path analysis

