

1. Record Nr.	UNINA9910778573303321
Autore	Davey Adam
Titolo	Statistical power analysis with missing data : a structural equation modeling approach / / Adam Davey, Jyoti Savla
Pubbl/distr/stampa	New York : , : Routledge, , 2010
ISBN	1-135-26930-0 1-135-26931-9 1-282-29455-5 9786612294556 0-203-86695-9
Descrizione fisica	1 online resource (370 p.)
Classificazione	QH 234
Altri autori (Persone)	SavlaJyoti
Disciplina	001.422 519.5
Soggetti	Social sciences Social sciences - Statistical methods Social sciences - Mathematical models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Statistical Power Analysis with Missing Data; Copyright Page; Contents; 1. Introduction; Overview and Aims; Statistical Power; Testing Hypotheses; Choosing an Alternative Hypothesis; Central and Noncentral Distributions; Factors Important for Power; Effect Sizes; Determining an Effect Size; Point Estimates and Confidence Intervals; Reasons to Estimate Statistical Power; Conclusions; Further Readings; Section I: Fundamentals; 2. The LISREL Model; Matrices and the LISREL Model; Latent and Manifest Variables; Regression Coefficient Matrices; Variance-Covariance Matrices Vectors of Means and InterceptsModel Parameters; Models and Matrices; Structure of a LISREL Program; Reading and Interpreting LISREL Output; Evaluating Model Fit; Measures of Population Discrepancy; Incremental Fit Indices; Absolute Fit Indices; Conclusions; Further Readings; 3. Missing Data: An Overview; Why Worry About Missing Data?; Types of Missing Data; Missing Completely at Random; Missing at Random; Missing Not at Random; Strategies for Dealing With

Missing Data; Complete Case Methods; List-Wise Deletion; List-Wise Deletion With Weighting; Available Case Methods; Pair-Wise Deletion Expectation Maximization Algorithm Full Information Maximum Likelihood; Imputation Methods; Single Imputation; Multiple Imputation; Estimating Structural Equation Models With Incomplete Data; Conclusions; Further Readings; 4. Estimating Statistical Power With Complete Data; Statistical Power in Structural Equation Modeling; Power for Testing a Single Alternative Hypothesis; Tests of Exact, Close, and Not Close Fit; Tests of Exact, Close, and Not Close Fit Between Two Models; An Alternative Approach to Estimate Statistical Power; Estimating Required Sample Size for Given Power; Conclusions Further Readings Section II: Applications; 5. Effects of Selection on Means, Variances, and Covariances; Defining the Population Model; Defining the Selection Process; An Example of the Effects of Selection; Selecting Data Into More Than Two Groups; Conclusions; Further Readings; 6. Testing Covariances and Mean Differences With Missing Data; Step 1: Specifying the Population Model; Step 2: Specifying the Alternative Model; Step 3: Generate Data Structure Implied by the Population Model; Step 4: Decide on the Incomplete Data Model; Step 5: Apply the Incomplete Data Model to Population Data Step 6: Estimate Population and Alternative Models With Missing Data Step 7: Using the Results to Estimate Power or Required Sample Size; Conclusions; Further Readings; 7. Testing Group Differences in Longitudinal Change; The Application; The Steps; Step 1: Selecting a Population Model; Step 2: Selecting an Alternative Model; Step 3: Generating Data According to the Population Model; Step 4: Selecting a Missing Data Model; Step 5: Applying the Missing Data Model to Population Data; Step 6: Estimating Population and Alternative Models With Incomplete Data Step 7: Using the Results to Calculate Power or Required Sample Size

## Sommario/riassunto

Statistical power analysis has revolutionized the ways in which we conduct and evaluate research. Similar developments in the statistical analysis of incomplete (missing) data are gaining more widespread applications. This volume brings statistical power and incomplete data together under a common framework, in a way that is readily accessible to those with only an introductory familiarity with structural equation modeling. It answers many practical questions such as: How missing data affects the statistical power in a study How much power is likely with different