## **Detailed Table of Contents**

Preface	
1. On the Performance of Multiple Imputation for Multivariate Data With Small Sample Size John W. Graham and Joseph L. Schafer	
A Brief History of Missing-Data Procedures Application to Small Samples:	1
The Present Chapter	4
Overview of Multiple Imputation With NORM	5
Using the NORM Program	8
Preparing the Data Set	8
Describing the Data	9
Running the EM Algorithm Running Data Augmentation and Generating	9
Multiple Imputations	10

Diagnostics	10
Analyzing the Data	10
Combining the Results	11
A Simulation With Small $N$	11
The Population	12
Sampling Method	15
Rates and Patterns of Missingness	15
Imputation and Analysis	16
Running the Simulation	18
Criteria of Performance	18
Bias	18
Efficiency	18
Coverage	19
Rejection Rates	19
Simulation Results	20
Performance of Multiple Imputation	20
Performance of Complete Cases Analysis	25
Discussion and Conclusions	26
References	27
2. Maximizing Power in Randomized Designs	
When N Is Small	
Anre Venter and Scott E. Maxwell	
Within- Versus Between-Subjects Designs	33
Introduction	33
The Statistical Model and Assumptions	34
Relative Power and Precision of the Designs	35
Numerical Example	41
Qualifications	44
Between-Subjects Designs	45
The Statistical Model and Assumptions	45
Posttest-Only Versus Pretest-Posttest Design	46
Unequal Allocation of Assessment Units Between	
The Pretest and Posttest	52
The Intensive Design	55
General Conclusion	56
References	57

3.	Effect Sizes and Significance Levels in Small-Sample Research	
	Sharon H. Kramer and Robert Rosenthal	
	Effect Sizes: An Introduction	60
	Relationship Between Effect Sizes and	
	Significance Tests	60
	Types of Effect Size Estimates	62
	Effect Sizes in Small-Sample Studies	64
	Counternull Value of an Effect Size	66
	Effect Sizes in Contrasts Within a Study:	
	Three Types of $r_{\rm S}$	67
	Effect Sizes Across Studies	70
	The Nature of Replication	70
	Meta-Analysis	72
	Meta-Analysis With a Small Number of Studies	74
	Conclusion	75
	References	76
	Appendix	79
4.	Statistical Analyses Using Bootstrapping: Concepts and Implementation	
	Yiu-Fai Yung and Wai Chan	
	A Monte Carlo Experiment on Reaction Time	82
	What if the Population Distribution	
	Is Not Known? The Bootstrap Method	87
	What Makes the Bootstrap Work?	90
	A Study of Factor Replicability	
	Using the Bootstrap	92
	Implementing a Bootstrap Procedure:	
	Some Suggested Guidelines	99
	Further Readings	101
	References	102
5.	Meta-Analysis of Single-Case Designs Scott L. Hershberger, Dennis D. Wallace, Samuel B. Green, and Janet G. Marquis	
	Treatment Effect Sizes for Single-Case Designs	
	and Their Replicability	109

Choice of Scores to Represent A and B Phases for Computing Effect Sizes	109
Choice of Divisors for an Effect Size Index	116
for AB Phases	110
Treatment and Replication Effects for Multiple	117
AB Phases for a Study	11.
Combining Effect Size Measures and	118
Evaluating Moderator Variables	123
An Example Meta-Analysis	120
Computation of Effect Sizes and Replicability	123
Effects for a Single Study	125
Computation of Effect Sizes and Replicability	106
Effects for Six Studies	126
Combining Effect Sizes and Assessing	100
Moderator Variables	128
Conclusions	130
References	130
6. Exact Permutational Inference for Categoric and Nonparametric Data  Cyrus R. Mehta and Nitin R. Patel	<b>va</b> i
Exact Permutation Tests for $r \times c$	
Contingency Tables	134
Unconditional Sampling Distributions	135
Conditional Sampling Distribution	137
Exact $p$ Values	140
Application to a Variety of $r \times c$ Problems	142
Exact Inference for Stratified Contingency	
	152
	152
Stratified $2 \times 2$ Contingency Tables	157
Computational Issues	161
Software and Related Resources for Exact	
	163
Inference	163
References	

7. Tests of an Identity Correlation Structure Rachel T. Fouladi and James H. Steiger	
Why Test the Identity Correlation Structure	
Model?	168
Available Test Procedures	170
Exact Test Procedure	170
Asymptotic Test Procedures	171
Testing Difference in Fit	175
Choosing a Procedure	175
Relevant Monte Carlo Literature	177
Type I Error Control	179
Power	183
Robustness	183
Conclusion	186
Two Closing Examples	188
Final Note	190
References	191
8. Sample Size, Reliability, and Tests of Statistical Mediation	
Rick H. Hoyle and David A. Kenny	
-	197
Conceptualization of a Mediational Model	197
-	197 198
Conceptualization of a Mediational Model Technical Issues Concerning Tests of Mediation	
Conceptualization of a Mediational Model Technical Issues Concerning Tests of Mediation Sample Size	198
Conceptualization of a Mediational Model Technical Issues Concerning Tests of Mediation	198 199
Conceptualization of a Mediational Model Technical Issues Concerning Tests of Mediation Sample Size Collinearity Between Cause and Mediator Unreliability of the Mediator	198 199 201
Conceptualization of a Mediational Model Technical Issues Concerning Tests of Mediation Sample Size Collinearity Between Cause and Mediator	198 199 201 201
Conceptualization of a Mediational Model Technical Issues Concerning Tests of Mediation Sample Size Collinearity Between Cause and Mediator Unreliability of the Mediator Latent Variable Modeling of Mediation	198 199 201 201 203
Conceptualization of a Mediational Model Technical Issues Concerning Tests of Mediation Sample Size Collinearity Between Cause and Mediator Unreliability of the Mediator Latent Variable Modeling of Mediation Monte Carlo Experiment	198 199 201 201 203 204
Conceptualization of a Mediational Model Technical Issues Concerning Tests of Mediation Sample Size Collinearity Between Cause and Mediator Unreliability of the Mediator Latent Variable Modeling of Mediation Monte Carlo Experiment Design	198 199 201 201 203 204 204
Conceptualization of a Mediational Model Technical Issues Concerning Tests of Mediation Sample Size Collinearity Between Cause and Mediator Unreliability of the Mediator Latent Variable Modeling of Mediation Monte Carlo Experiment Design Technical Details	198 199 201 201 203 204 204 205 205 213
Conceptualization of a Mediational Model Technical Issues Concerning Tests of Mediation Sample Size Collinearity Between Cause and Mediator Unreliability of the Mediator Latent Variable Modeling of Mediation Monte Carlo Experiment Design Technical Details Results	198 199 201 201 203 204 204 205 205

9.	Pooling Lagged Covariance Structures Based on Short, Multivariate Time Series for	
	Dynamic Factor Analysis	
	John R. Nesselroade and Peter C. M. Molenaar	224
	A Focus on Process	22 <del>4</del>
	Idiographic Emphases Within the Pursuit	224
	of Nomothetic Laws	$\frac{224}{225}$
	Multivariate Measurement and Analysis	$\frac{225}{226}$
	Statement of the Problem	$\frac{220}{227}$
	What Is Needed?	
	Earlier Work on the Problem	227
	Pooling Dynamic Structures Rather Than	007
	Individuals' Time Series	227
	Assessing the Poolability of Individual	000
	Covariance Structures: A Test of Ergodicity	228
	Ergodicity	228
	Lagged Relationships	229
	The Statistical Test of "Poolability"	230
	Dynamic Factor Analysis of Pooled, Lagged	00.4
	Covariance Functions	234
	An Empirical Example	236
	Data	236
	Testing the "Poolability" of the Participants'	005
	Covariance Functions	237
	Fitting the Dynamic Factor Model to the Pooled	200
	Covariance Functions	238
	Estimates of Noise Series Parameters	239
	Interpretation of the Lagged Factor Loadings	241
	Discussion and Conclusions	245
	References	247
1(	D. Confirmatory Factor Analysis: Strategies for Small Sample Sizes	
	Herbert W. Marsh and Kit-Tai Hau	
	Proposed Strategies	252
	More Items Is Better	252
	Item Parcels	253
	Item I arcers	

	Equal-Loading Strategy	254
	Convergence, Proper Solutions, and $N$	254
	Marsh, Hau, and Balla (1997) Study	256
	Convergence Behavior	256
	Effects of Number of Indicators and $N$	
	in Confirmatory Factor Analysis	257
	A Comparison of Parcel and Item Solutions	258
	Extensions	259
	Study 1: The Effects of Measured Variable	
	Saturation, Number of Indicators, and $N$	260
	Methods	260
	Results	261
	Study 2: The Effect of Imposing Equality	
	Constraints to Improve the Behavior of	
	Factor Solutions With Small N	262
	Methods	267
	Results	268
	Conclusions, Implications, Limitations, and	
	Directions for Future Research	277
	References	282
<b>11</b> 1.	Small Samples in Structural Equation	(
100,000	State Space Modeling	
	Johan H. L. Oud, Robert A. R. G. Jansen, and	
	Dominique M. A. Haughton	
	State Space Modeling by Means of Structural	
	Equation Modeling	288
	Simulation Study	291
	Results of the Simulation Study	300
	Results for the Simulation on the Basis of	
	True Model I: Observed State Variables	
	(See Table 1)	301
	Results for the Simulation on the Basis of	
	True Model II: Measurement Errors	
	(See Table 2)	302
	Results for the Simulation on the Basis of	
	True Model III: Measurement Errors and Traits	
	(Random Subject Effects)	303

	Conclusion and Discussion References	303 305
12.	Structural Equation Modeling Analysis With Small Samples Using Partial Least Squares	
	Wynne W. Chin and Peter R. Newsted	
	Contrasting Partial Least Squares and	
	Covariance-Based Structural Equation	
	Modeling	308
	The Standard Partial Least Squares Algorithm	315
	Multiblock Example	316
	Formal Specification of the Partial Least	
	Squares Model	321
	Inner Model	321
	Outer Model	322
	Weight Relations	324
	Predictor Specification	324
	Sample Size Requirements Based on the Inside	<b>;</b>
	and Outside Approximations	326
	Model Evaluation	328
	Partial Least Squares Estimates: The Issue	
	of Consistency at Large	328
	Monte Carlo Simulation	331
	Summary	335
	References	337
Auth	or Index	343
Subj	ect Index	349
Abo	ut the Contributors	361