

Preface

1. Overview

| | |
|--------------|----|
| Content | 2 |
| Organization | 11 |
| Orientation | 12 |

1

PART 1: MEASUREMENT

2. Measurement and Scientific Inquiry

| | |
|--|----|
| Definition and Benefits of Measurement | 16 |
| Scales of Measurement | 17 |
| Measurement & Statistics | 24 |
| Concluding Remarks | 28 |

15

3. Criterion-Related Validation

| | |
|--------------------|----|
| Criterion | 32 |
| Prediction | 37 |
| Concluding Remarks | 50 |

30

4. Construct Validation

| | |
|---------------------------------|----|
| Constructs and Indicators | 52 |
| Construct Validation Approaches | 59 |
| A Note on Content Validity | 79 |
| Concluding Remarks | 80 |

52

| | | |
|--|-----|------------|
| 5. Reliability | | 81 |
| Classical Test Theory | 83 | |
| Approaches to the Estimation of Reliability | 88 | |
| Internal Consistency: Theoretical Orientations and Assumptions | 100 | |
| Computer Programs for Reliability | 104 | |
| Selected Topics | 109 | |
| Study Suggestions | 115 | |
| | | |
| 6. Selected Approaches to Measurement in Sociobehavioral Research | | 118 |
| Rating Scales | 119 | |
| Semantic Differential | 125 | |
| Interviews | 131 | |
| Task Effects | 136 | |
| Respondent Effects | 140 | |
| Observation | 142 | |
| Concluding Remarks | 146 | |
| | | |
| PART 2: DESIGN | | |
| | | |
| 7. Science and Scientific Inquiry | | 147 |
| Scientific Inquiry | 148 | |
| Basic and Applied Research | 152 | |
| Natural and Sociobehavioral Sciences | 154 | |
| Concluding Remarks | 163 | |
| | | |
| 8. Definitions and Variables | | 164 |
| Definitions | 166 | |
| Variables | 173 | |
| Concluding Remarks | 179 | |
| | | |
| 9. Theories, Problems, and Hypotheses | | 180 |
| Definitions and Role of Theory | 180 | |
| Theory Testing | 183 | |
| Problems | 187 | |
| Hypotheses | 194 | |
| Hypothesis Testing | 197 | |
| Concluding Remarks | 210 | |

| | |
|---|------------|
| 10. Research Design: Basic Principles and Concepts | 211 |
| Control | 211 |
| Validity | 223 |
| Concluding Remarks | 233 |
| | |
| 11. Artifacts and Pitfalls in Research | 234 |
| Subject | 235 |
| Researcher | 241 |
| Concluding Remarks | 249 |
| | |
| 12. Experimental Designs | 250 |
| Elements of Experimental Research | 251 |
| Some Elementary Designs | 265 |
| Concluding Remarks | 275 |
| | |
| 13. Quasi-Experimental Designs | 277 |
| Three Quasi-Experimental Designs | 281 |
| Concluding Remarks | 302 |
| | |
| 14. Nonexperimental Designs | 304 |
| Predictive Versus Explanatory Research | 305 |
| Categorical Independent Variables | 308 |
| Continuous Independent Variables | 310 |
| Categorical and Continuous Independent Variables | 314 |
| Longitudinal Research: A Comment | 315 |
| Concluding Remarks | 317 |
| | |
| 15. Introduction to Sampling | 318 |
| Purposes and Advantages of Sampling | 319 |
| Probability Versus Nonprobability Sampling | 320 |
| Sampling Distributions | 322 |
| Selected Sampling Strategies | 329 |
| Sample Size | 336 |
| Concluding Remarks | 341 |

PART 3: ANALYSIS

| | |
|---|------------|
| 16. Computers and Computer Programs | 342 |
| Advantages of Computer Data Analysis | 342 |
| Misconceptions About and Misuses of Computers | 343 |
| Statistical Software | 346 |
| Some General Considerations | 350 |
| Introduction to Selected Programs | 355 |
| Concluding Remarks | 365 |
| 17. Simple Regression Analysis | 366 |
| Simple Linear Regression | 371 |
| Graphs | 381 |
| Tests of Significance | 384 |
| Assumptions | 389 |
| Diagnostics | 392 |
| Residual Analysis | 396 |
| Influence Analysis | 402 |
| The Correlation Model: A Comment | 408 |
| Concluding Remarks | 409 |
| Study Suggestions | 410 |
| 18. Multiple Regression Analysis | 413 |
| Two Independent Variables | 414 |
| Variance Partitioning | 423 |
| Tests of Significance | 428 |
| Three Independent Variables | 433 |
| Shrinkage | 446 |
| Multicollinearity | 448 |
| Curvilinear Regression Analysis | 451 |
| Concluding Remarks | 459 |
| Study Suggestions | 459 |
| 19. A Categorical Independent Variable | 464 |
| Coding Categorical Variables | 464 |
| Multiple Comparisons Among Means | 481 |
| Multiple Regression and Analysis of Variance: Mechanics and Terminology | 492 |
| Concluding Remarks | 499 |
| Study Suggestions | 501 |

| | |
|--|------------|
| 20. Multiple Categorical Independent Variables: Factorial Designs | 504 |
| The Model | 507 |
| Tests of Significance | 513 |
| Regression Analysis of Factorial Designs | 515 |
| Simple Main Effects | 523 |
| Hypothesis Formulation | 530 |
| Higher-Order Designs | 531 |
| Nonorthogonal Designs | 536 |
| ANOVA and Regression: Similarities and Contrasts | 540 |
| Study Suggestions | 542 |
| | |
| 21. Attribute—Treatments—Interactions; Analysis of Covariance | 545 |
| Attribute—Treatments—Interaction (ATI) | |
| Analysis: Synopsis | 546 |
| Analysis of Covariance | 567 |
| Extensions and Generalizations | 584 |
| Concluding Remarks | 585 |
| Study Suggestions | 586 |
| | |
| 22. Exploratory Factor Analysis | 590 |
| Uncorrelated Factors | 592 |
| Correlated Factors | 607 |
| Selected Issues | 621 |
| Concluding Remarks | 627 |
| Study Suggestions | 627 |
| | |
| 23. Confirmatory Factor Analysis | 631 |
| LISREL: An Orientation | 633 |
| Uncorrelated Factors | 641 |
| Correlated Factors | 658 |
| EQS: An Orientation | 661 |
| Multitrait-Multimethod Matrix | 669 |
| Measurement Models | 684 |
| Concluding Remarks | 690 |
| Study Suggestions | 690 |

| | |
|---|------------|
| 24. Structural Equation Modeling | 695 |
| Causation | 695 |
| LISREL: Orientation to Structural Models | 699 |
| Selected Topics | 733 |
| Study Suggestions | 737 |
| | |
| References | 741 |
| | |
| Appendix | |
| Critical values for F | 790 |
| Percentile Points for χ^2 Distribution | 794 |
| | |
| Author Index | 797 |
| | |
| Subject Index | |