

PREFACE

xi

PART 1: FOUNDATIONS

CHAPTER 1		1-2 PHILOSOPHY OF RESEARCH	13
FOUNDATIONS	3	1-2a Structure of Research	14
1-1 THE LANGUAGE OF RESEARCH 1-1a Types of Studies 1-1b Time in Research	5 6	1-2b Deduction and Induction 1-2c Positivism and Post-Positivism 1-2d Introduction to Validity 1-3 ETHICS IN RESEARCH	16 18 20
1-1c Types of Relationships 1-1d Variables	6	1-3a The Language of Ethics	23
1-1e Hypotheses 1-1f Types of Data 1-1g The Unit of Analysis 1-1h Research Fallacies	9 11 12 13	1-4 CONCEPTUALIZING 1-4a Problem Formulation 1-4b Concept Mapping 1-4c Logic Models	24 25 27 29

PART 2: SAMPLING

CHAPTER 2		2-4 PROBABILITY SAMPLING	42
SAMPLING	33	2-4a Some Definitions	43
2-1 EXTERNAL VALIDITY 2-1a Threats to External Validity 2-1b Improving External Validity	34 36 36	2-4b Simple Random Sampling2-4c Stratified Random Sampling2-4d Systematic Random Sampling2-4e Cluster (Area) Random Sampling	43 44 45 47
2-2 SAMPLING TERMINOLOGY	36	2-4f Multi-Stage Sampling	47
2-3 STATISTICAL TERMS IN SAMPLING 2-3a The Sampling Distribution 2-3b Sampling Error	38 38 40	2-5 NONPROBABILITY SAMPLING2-5a Accidental, Haphazard, or Convenience Sampling2-5b Purposive Sampling	48 49 49
2-3c The 65, 95, 99 Percent Rule	40	SUMMARY	51

PART 3: OBSERVATION AND MEASUREMENT

CHAPTER 3		4-3 SURVEYS	118
THE THEORY OF MEASUREMENT	55	4-3a Types of Surveys	118
2.4 CONSTRUCT VALIDITY		4-3b Selecting the Survey Method	120
3-1 CONSTRUCT VALIDITY	56	4-3c Advantages and Disadvantages of Survey Methods	124
3-1a Measurement Validity Types	58	SUMMARY	124
3-1b Idea of Construct Validity	61	SOMMAN	124
3-1c Convergent and Discriminant Validity	63		
3-1d The Nomological Network	67	CHAPTER 5	
3-1e The Multitrait-Multimethod Matrix	68	SCALES AND INDEXES	125
3-1f Pattern Matching for Construct Validity	73		400
3-1g Structural Equation Modeling	76	5-1 INDEXES	126
3-1h Threats to Construct Validity	78	5-1a Some Common Indexes	126
3-2 RELIABILITY	80	5-1b Constructing an Index	127
3-2a True Score Theory	80	5-2 SCALING	129
3-2b Measurement Error	81	5-2a General Issues in Scaling	130
3-2c Theory of Reliability	83	5-2b Thurstone Scaling	133
3-2d Types of Reliability	87	5-2c Likert Scaling	136
3-2e Reliability and Validity	93	5-2d Guttman Scaling	138
3-3 LEVELS OF MEASUREMENT	95	5-3 INDEXES AND SCALES	140
3-3a Why Is Level of Measurement Important?	95	SUMMARY	140
SUMMARY	97	SUIVIIVIANT	140
		CHAPTER 6	
CHAPTER 4 SURVEY RESEARCH	99	QUALITATIVE AND UNOBTRUSIVE MEASURES	141
4-1 CONSTRUCTING THE SURVEY	100	6-1 QUALITATIVE MEASURES	142
4-1a Types of Questions	100	6-1a When to Use Qualitative Research	142
4-1b Question Content	104	6-1b Qualitative and Quantitative Data	144
4-1c Response Format	106	6-1c Qualitative Data	146
4-1d Question Wording	109	6-1d Qualitative Measures and Observations	147
4-1e Question Placement	111	6-1e The Quality of Qualitative Research	148
4-1f The Golden Rule	112	6-2 UNOBTRUSIVE MEASURES	150
4-2 INTERVIEWS	112	6-2a Indirect Measures	150
4-2a The Role of the Interviewer	112	6-2b Content Analysis	151
4-2b Training the Interviewers	113	6-2c Secondary Analysis of Data	152
4-2c The Interviewe's Kit	114		
4-2d Conducting the Interview	114	SUMMARY	152

PART 4: DESIGN AND STRUCTURE

CHAPTER 7	7-1c Multiple-Group Threats		168
DESIGN	157	7-1d Social Interaction Threats	170
7-1 INTERNAL VALIDITY	158	7-2 INTRODUCTION TO DESIGN	172
7-1a Establishing Cause and Effect	159	7-3 TYPES OF DESIGNS	173
7-1b Single-Group Threats	161	SUMMARY	175

Con	tents	vi

		10-1a The Basic Design	211
CHAPTER 8		10-1b The Busic Design	211
QUALITATIVE AND MIXED METHODS DESIGNS	177		
METHODS DESIGNS	177	10-2 THE REGRESSION-DISCONTINUITY DESIGN	215
8-1 ETHNOGRAPHY	180	10-2a The Basic RD Design	216
0.3 DUENOMENOLOGY	100	10-2b The RD Design and Accountability	222
8-2 PHENOMENOLOGY	180	10-2c Statistical Power and the RD Design	222
8-3 FIELD RESEARCH	181	10-2d Ethics and the RD Design	222
8-4 GROUNDED THEORY	181	10-3 OTHER QUASI-EXPERIMENTAL DESIGNS	222
8-5 CONTENT ANALYSIS	182	10-3a The Proxy Pretest Design	222
	102	10-3b The Separate Pre-Post Samples Design	223
8-6 MIXED METHODS	182	10-3c The Double-Pretest Design	224
		10-3d The Switching-Replications Design	225
CHAPTER 9	405	10-3e The Nonequivalent Dependent Variables (NEDV) Design	225
EXPERIMENTAL DESIGN	185	10-3f The Regression Point Displacement (RPD) Design	228
9-1 INTRODUCTION TO EXPERIMENTAL DESIGN	186	SUMMARY	229
9-1a Experimental Designs and Internal Validity	186	SOMMAN	223
9-1b Two-Group Experimental Designs	188		
9-1c Probabilistic Equivalence	189	CHAPTER 11	
9-1d Random Selection and Assignment	190	ADVANCED DESIGN TOPICS	231
		11-1 DESIGNING DESIGNS FOR RESEARCH	232
9-2 CLASSIFYING EXPERIMENTAL DESIGNS	191	11-1a Minimizing Threats to Validity	233
9-3 FACTORIAL DESIGNS	192	11-1b Building a Design	234
9-3a The Basic 2 × 2 Factorial Design	192	11-1c A Simple Strategy for Design Construction	239
9-3b Factorial Design Variations	195	11-1d An Example of a Hybrid Design	239
9-4 RANDOMIZED BLOCK DESIGNS	100	11-1e The Nature of Good Design	241
9-4a How Blocking Reduces Noise	198	11-2 RELATIONSHIPS AMONG PRE-POST	
5-4a How blocking heduces Noise	199	DESIGNS	242
9-5 COVARIANCE DESIGNS	200		- '-
9-5a How Does a Covariate Reduce Noise?	200	11-3 CONTEMPORARY ISSUES IN RESEARCH	244
9-5b Summary	203	DESIGN	244
9-6 HYBRID EXPERIMENTAL DESIGNS	203	11-3a The Role of Judgment 11-3b The Case for Tailored Designs	244 245
9-6a The Solomon Four-Group Design	203	11-3c The Case for Tallored Designs 11-3c The Crucial Role of Theory	245
9-6b Switching-Replications Design	204	11-3d Attention to Program Implementation	245
		11-3e The Importance of Quality Control	246
SUMMARY	206	11-3f The Advantages of Multiple Perspectives	246
		11-3g Evolution of the Concept of Validity	246
CHAPTER 10		11-3h Development of Increasingly Complex	240
QUASI-EXPERIMENTAL DESIGN	209	Realistic Analytic Models	247
10-1 THE NONEQUIVALENT-GROUPS DESIGN	210	SUMMARY	247

PART 5: ANALYSIS

CHAPTER 12		12-1b Statistical Power	250
ANALYSIS	251	12-1c Improving Conclusion Validity	260
12-1 CONCLUSION VALIDITY 12-1a Threats to Conclusion Validity	253	12-2 DATA PREPARATION	260
		12-2a Logging the Data	26
	254	12-2b Checking the Data for Accuracy	26

12-2c Developing a Database Structure 12-2d Entering the Data into the Computer	261 262	CHAPTER 15	221
12-2e Data Transformations	262	WRITE-UP	331
12-2f Dealing with Missing Data	263	15-1 ENVISIONING THE WRITE-UP	332
12-3 DESCRIPTIVE STATISTICS	264	15-1a The Type of Report	332
	265	15-1b The Audience	333
12-3a The Distribution		15-1c The Story Line	333
12-3b Central Tendency	266	15-1d The Writing Style	333
12-3c Dispersion or Variability	266	15-1e Quantitative, Qualitative and Mixed Methods	
12-3d Correlation	268	Write-ups	333
12-3e Cross-Tabulations	274	15-1f The Study Schema	334
12-4 EXPLORATORY DATA ANALYSIS AND GRAPHICS	277	15-1g Distribution Media	334
12-4a The Stem and Leaf Plot	279	15-2 KEY ELEMENTS OF THE RESEARCH	224
	279	REPORT	334
12-4b The Boxplot (or Box and Whisker Plot)	280	15-3 FORMATTING	337
12-4c Anscombe's Quartet	200	15-3a Title Page	338
SUMMARY	281	15-3b Abstract	338
		15-3c Body	338
		15-3d Introduction	338
CHAPTER 13		15-3e Methods	339
QUALITATIVE AND MIXED			339
METHODS ANALYSIS	283	15-3f Sample	339
13-1 GROUNDED THEORY	284	15-3g Measures	339
13-1 GROUNDED THEORY	204	15-3h Design	
13-2 CONTENT ANALYSIS	288	15-3i Procedures	339
		15-3j Results	339
13-3 COMPUTERIZED QUALITATIVE DATA ANALYSIS	289	15-3k Conclusions	340
13-4 MIXED METHODS ANALYSIS	290	15-3l References	340
15 4 MIXED METHODS ANALTSIS	250	15-3m Tables	342
SUMMARY	291	15-3n Figures	342
		15-3o Appendices	342
CHAPTER 14		SUMMARY	344
ANALYSIS FOR RESEARCH DESIGN	293		
14-1 INFERENTIAL STATISTICS	294	CHAPTER 16	
14-1a Significance Testing	295	EVALUATION, RESEARCH SYNTHESIS,	
14-1b Confidence Intervals and the Effect Size	296	META-ANALYSIS, AND EVIDENCE-BASED	
	207	PRACTICE	347
14-2 GENERAL LINEAR MODEL	297		
14-2a The Two-Variable Linear Model	297	16-1 BACKGROUND AND CONTEXT	348
14-2b Extending the General Linear Model to the General Case	299	16.2 AN EVOLUTIONARY ECOLOGICAL SYSTEMS	
14-2c Dummy Variables	300	16-2 AN EVOLUTIONARY, ECOLOGICAL, SYSTEMS VIEW OF RESEARCH	348
14-3 EXPERIMENTAL ANALYSIS	301	16-3 A SYSTEMS PERSPECTIVE ON RESEARCH	350
14-3a The <i>t</i> -Test	302		
14-3b Factorial Design Analysis	306	16-4 THE LINK BETWEEN RESEARCH	
14-3c Randomized Block Analysis	307	AND PRACTICE	350
14-3d Analysis of Covariance	307	16-5 HISTORY	351
	308	16-6 AGRICULTURE AND EXTENSION	351
14-4 QUASI-EXPERIMENTAL ANALYSIS		10-0 AGMICOLIGINE AND EXTENSION	331
14-4a Nonequivalent-Groups Analysis	309	16-7 EVALUATION RESEARCH	351
14-4b Regression-Discontinuity Analysis	319	16-7a Definitions of Evaluation	352
14-4c Regression Point Displacement Analysis	327	16-7b The Goals of Evaluation	352
14-4d Propensity Score Analysis	328	16-7c Types of Evaluation	352
SUMMARY	330	16-7d Evaluation Questions and Methods	353

Contents

ix