

Table of Contents

Introduction, 3

Chapter 1. A Description of Sample Data Sets Used in Further Chapters, 9

- 1.1. A Description of Example Data Sets, 9
- References, 25

Chapter 2. Panelist and Panel Performance: A Multivariate Experience, 27

- 2.1. The Multivariate Nature of Sensory Evaluation, 27
- 2.2. Univariate Approaches to Panelist Assessment, 29
- 2.3. Multivariate Techniques for Panelist Performance, 32
- 2.4. Panel Evaluation through Multivariate Techniques, 43
- 2.5. Conclusions, 46
- References, 47

Chapter 3. A Nontechnical Description of Preference Mapping, 49

- 3.1. Introduction, 49
- 3.2. Internal Preference Mapping, 49
- 3.3. External Preference Mapping (PREFMAP), 58
- 3.4. Conclusions, 66
- References, 67

Chapter 4. Deterministic Extensions to Preference Mapping Techniques, 69

- 4.1. Introduction, 69
- 4.2. Application and Models Available, 69
- 4.3. Conclusions, 89
- References, 94

Chapter 5. Multidimensional Scaling and Unfolding and the Application of Probabilistic Unfolding to Model Preference Data, 95

- 5.1. Introduction, 95
- 5.2. Multidimensional Scaling (MDS) and Unfolding, 96
- 5.3. Probabilistic Approach to Unfolding and Identifying the Drivers of Liking, 98
- 5.4. Examples, 100
- References, 109

Chapter 6. Consumer Segmentation Techniques, 111

- 6.1. Introduction, 111
- 6.2. Methods Available, 111
- 6.3. Segmentation Methods Using Hierarchical Cluster Analysis, 113
References, 126

Chapter 7. Ordinal Logistic Regression Models in Consumer Research, 129

- 7.1. Introduction, 129
- 7.2. Limitations of Ordinary Least Square Regression, 129
- 7.3. Odds, Odds Ratio, and Logit, 130
- 7.4. Binary Logistic Regression, 133
- 7.5. Ordinal Logistic Regression Models, 144
- 7.6. Proportional Odds Model (POM), 144
- 7.7. Conclusions, 160
References, 160

Chapter 8. Risk Assessment in Sensory and Consumer Science, 163

- 8.1. Introduction, 163
- 8.2. Concepts of Quantitative Risk Assessment, 164
- 8.3. A Case Study: Cheese Sticks Appetizers, 166
- 8.4. Conclusions, 176
References, 176

Chapter 9. Application of MARS to Preference Mapping, 179

- 9.1. Introduction, 179
- 9.2. MARS Basics, 179
- 9.3. Setting Control Parameters and Refining Models, 187
- 9.4. Example of Application of MARS, 188
- 9.5. A Comparison with PLS Regression, 201
References, 205

Chapter 10. Analysis of Just About Right Data, 207

- 10.1. Introduction, 207
- 10.2. Basics of Penalty Analysis, 208
- 10.3. Boot Strapping Penalty Analysis, 210
- 10.4. Use of MARS to Model JAR Data, 212
- 10.5. A Proportional Odds/Hazards Approach to Diagnostic Data Analysis, 215
- 10.6. Use of Dummy Variables to Model JAR Data, 220
References, 233

Index, 237