SEVENTH EDITION

AAKER • KUMAR • DAY



# MARKETING Research

## SEVENTH EDITION

## DAVID A. AAKER

E. T. Grether Professor of Marketing and Public Policy University of California, Berkeley

### V. KUMAR

Marvin Hurley Professor of Business Administration, Melcher Faculty Scholar, and Director of Marketing Research Studies University of Houston

## GEORGE S. DAY

Geoffrey T. Boisi Professor of Marketing, and Director of the Huntsman Center For Global Competition and Innovation Wharton School, University of Pennsylvania



John Wiley & Sons, Inc.

New York • Chichester • Weinheim • Brisbane • Singapore • Toronto

#### Dedicated with love

To my wife, Kay To my parents, Patta and Viswanathan sister, Shanti Prasad and uncle, N. Kannan To my wife, Marilyn

Copyright © 2002 Exclusive rights by John Wiley & Sons (Asia) Pte. Ltd., Singapore for manufacture and export. This book cannot be re-exported from the country to which it is consigned by John Wiley & Sons.

Copyright © 2001 by John Wiley & Sons, Inc. All rights reserved.

No part of this publication may be reproduced, stored in a retreival system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Sections 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (508)750-8400, fax (508)750-4470. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158-0012, (212)850-6011, fax (212)850-6008, E-Mail: PERMREQ@WILEY.COM. To order books or for customer service please call 1(800)225-5945.

Library of Congress Cataloging-in-Publication Data

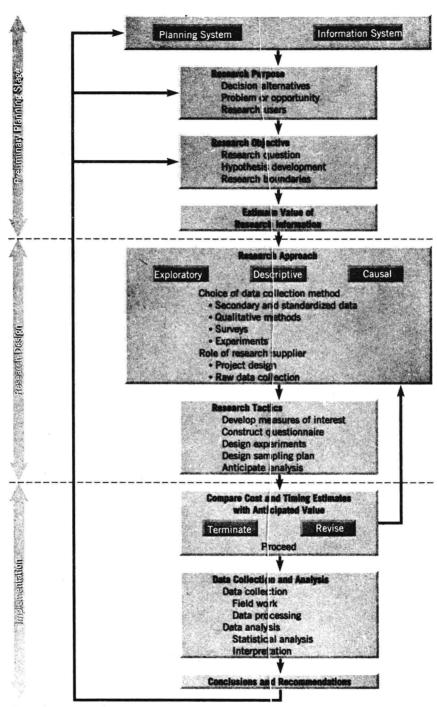
```
Aaker, David A.

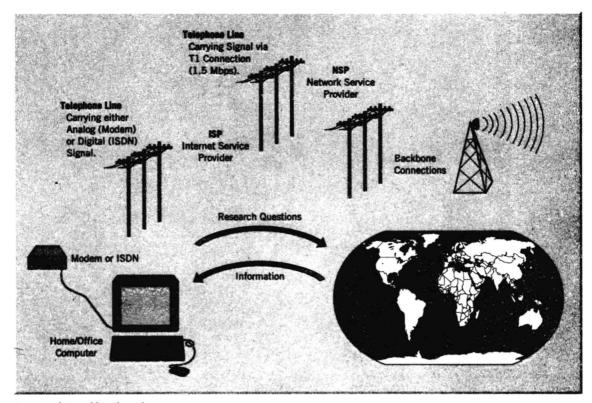
Marketing research / D. Aaker, V. Kumar, G. Day. — 7th ed. p. cm.
Includes index.
ISBN 9971-51-389-7

1. Marketing research. I. Kumar, V. II. Day, George S.
III. Title.
HF5415.2.A14 2000
658.8'3—dc21 00-035933
```

Printed and bound in India by Replika Press Pvt Ltd, 100% EOU, Delhi-110 040

10 9 8 7 6 5 4 3 2 1





Accessing the World Wide Web

f we can compare marketing to a long train with multiple compartments, then marketing research would justly claim the dual roles of the engine that powers the train and the links that connect the individual compartments to form a cohesive functional unit. In other words, marketing research is pervasive—the brain and the brawn of any marketing organization.

Having said this, we realize that marketing research is a complex subject and therefore has to be introduced to the student one compartment at a time before the entire train can be visualized. We also realize the danger in this approach. The student can get overly excited or, even worse, overwhelmed by the individual units so that he or she fails to see the proverbial "big picture"—the overarching framework, the subtle but essential interactions between units, and the ultimate purpose, namely, how marketing research can help organizations achieve their goals. Hence, this text takes a "macro-micro-macro" approach toward communicating the intricacies of marketing research and its usefulness to the marketing organization.

The strengths of the previous edition have been maintained in this revised edition. Topics of less interest and relevance to the practice of marketing and marketing research have been eliminated. New topics have been added to position this book as the necessary tool for successfully marching into the next millennium.

One of the most exciting of these new tools is the Internet. The Internet is a multimedia playground for data-intensive tasks and fortunately marketing research is blessed with the advances in this technological wonder. Online marketing research is experiencing a phenomenal growth due to a larger number of people accessing the Internet and the increased speed of surfing the Internet. The computer revolution has facilitated the increase in the power of marketing research with respect to sophisticated data collection and decision-making opportunities. Together, these advances have taken marketing research to the forefront of business strategies that involve trying to win customers' share of purchases.

We begin with a macro-level treatment of what marketing research is, where it fits within an organization, and how it helps in managerial decision making. Here, we also discuss the marketing research industry, with a brief treatment of both suppliers and users.

The body of the text takes a micro-level approach, detailing each and every step of the marketing research process. In describing the marketing research process, a decision-oriented perspective has been adopted to help students, who are future managers and researchers, make better decisions. Detailed discussions of the process, with numerous examples from the industry, characterize this micro phase.

Finally, we wrap up with a macro-level treatment of the applications of marketing research. Here we address the traditional 4P research, as well as contemporary issues such as brand equity, customer satisfaction research, and emerging issues that continue to fascinate marketers, such as e-commerce, direct marketing, database marketing, and relationship marketing.

#### **OBJECTIVES OF THIS TEXT**

Our overall objectives in writing this text continue to be

- To communicate in an interesting and informative manner the essence of marketing research to "future managers" and "future researchers." Both groups need to know when marketing research can and should be used, what research alternatives exist, how to recognize effective and ineffective research, and how to interpret and apply the results.
- To illustrate the usefulness of the Internet, online marketing research, and other advances in technology.
- 3. To emphasize the current developments in marketing research, such as the distinction between domestic and international market research.
- 4. To use examples, applications, and illustrations throughout the book, in an effort to tie the material to the real world and thus provide interest and better understanding to the student.
- To discuss the fastest growing applications of marketing research—e-commerce, direct marketing, and database marketing research, and their impact on businesses.
- To provide a clear and comprehensive treatment of modern data analysis topics. Each chapter includes simple numerical examples to help students get a hands-on feel for the material.
- 7. To provide thorough coverage of the most advanced and current marketing research methodologies, pointing out their limitations as well as their potential for enhancing research results.

#### **NEW TO THIS EDITION**

In line with these objectives, the seventh edition has undergone some critical changes. The more prominent of these changes are:

- 1. The chapter on the Emerging Applications of Marketing Research has been expanded to include e-commerce coverage. The chapter now focuses on e-commerce, database marketing, and relationship marketing. The growth in e-commerce is phenomenal and a firm's ability to identify individuals and market to them is an important task. Database marketing is on the verge of being the most important tool for businesses tacing the challenges of the 21st century.
- The text has been made current by the addition of discussions on new topics of interest and methods of practice in marketing research. For example, Projective Techniques have been updated to reflect how emphatic interviewing yields insightful results.
- 3. The new section on Marketing Research in Business in each chapter focuses on the real world applications of Marketing Research. Several current real-world examples such as, how a Meatless Burger Marketer Reaches to "Crossover" Consumers, Beautifying the Japanese Male, From Perception to Delivery of Customer Satisfaction are new to this edition. These additions reflect the current and future trends in the marketing research industry.
- 4. A number of new cases like Philip Morris Enters Turkey and Dell in Latin America have been added to this edition. These cases reflect the current and future trends in marketing research.
- Firm-specific and data-specific URL's are provided in the book so that the users can access the most recent information:
- Spreadsheet illustrations, using SPSS®, for many statistical techniques discussed in this book are provided as Appendices Five and Six at the end of the

book. Also, the use of other statistical packages like SAS is illustrated on the text Website.

SPSS® Student Version 9.0 for Windows is available to package with the text.
 Data sets on the SPSS CD accompany Tables 19–3 and 19–4 (Export Data Set),
 NewFood Inc. Case, Vancouver Symphony Orchestra Case, and the Pacific Gas and Electric Case are available.

#### **FEATURES OF THE BOOK**

- The text communicates in an interesting and informative manner the essence
  of marketing research to future managers and future researchers. Both groups
  need to know when marketing research can and should be used, what research
  alternatives exist, how to recognize effective and ineffective research, and how
  to interpret and apply the results.
- The Cases and Part Cases are positioned appropriately at the end of chapters and text parts to stimulate interest, add realism to the marketing research curriculum, and help develop decisionmaking skills. These cases cover a wide range of products and organizations.
- The chapter on Marketing Research on the Internet links the reader with the world of marketing research to keep abreast with the emerging trends and changes in the marketplace.
- 4. The *International Element of Marketing Research* has been continued. Particularly, an effort has been made to provide a clear distinction between the domestic and international marketing research process and prepare the users of this text to face the challenges of multinational research.
- 5. The chapter on the Emerging Applications of Marketing Research focuses on e-commerce, database marketing, and relationship marketing. The growth in e-commerce is phenomenal and the firm's ability to identify individuals and market to them is an important task. Database marketing is on the verge of being the most important tool for businesses facing the challenges at the dawn of the 21st century. As firms shift their resources more towards targeted marketing, the discussion in this chapter becomes valuable.
- 6. The section on Applications of Marketing Research has been revised. It included a chapter on the traditional 4P applications, a chapter on more recent developments such as competitive advantage, brand equity, total quality management, customer satisfaction, and a chapter on emerging issues such as e-commerce, database marketing, and relationship marketing.
- 7. The section on *Marketing Research in Business* in each chapter focuses on the real world applications of Marketing Research.
- 8. Each chapter also includes *Learning Objectives*, a *Chapter Summary*, and *Questions and Problems*.

#### ORGANIZATION OF THE TEXT

The book is organized to reflect the "macro-micro-macro" approach towards imparting marketing research training to the student. The text consists of five parts. Parts I and V deal with the "macro" aspects of marketing research; Parts II, III, and IV deal with the micro aspects.

Part I, consisting of four chapters, deals with the nature and scope of marketing research. Here, the overall framework of marketing research is presented, and where and how marketing research fits in with the other aspects of

- marketing is explained. The nature of the research industry and suppliers is also discussed here.
- Part II, consisting of Chapters 5 through 15, deals extensively with the various aspects of data collection. This part is further divided into four sections, one section devoted to each of the three fundamental types of marketing research: exploratory, descriptive, and causal. The final section addresses the issue of sampling.
- Part III, consisting of three chapters, discusses the fundamental aspects and techniques in data analysis. These include preanalysis issues such as data editing, coding, and simple techniques such as hypothesis testing, chisquare analysis, and the analysis of variance.
- **Part IV** is devoted exclusively to advanced and more sophisticated data analysis techniques such as correlation and regression analysis, discriminant analysis, factor analysis, cluster analysis, conjoint analysis, and multidimensional scaling. This part consists of four chapters, the last chapter dealing with the aspects of presenting the research results.
- In **Part V**, the student is exposed to the traditional, contemporary, and emerging applications of marketing research. This section has three chapters and provides the student with a comprehensive picture of marketing research, highlighting where and how the individual units of the research process fit in while solving marketing problems.

#### SUPPLEMENTS TO THE TEXT

- An Instructor's Manual will accompany this text. This manual provides solutions to end-of-chapter Questions and Problems, and discusses all the text cases in greater detail. Exam questions are arranged by chapter, and include multiple-choice and true / false questions. An example of a course syllabus is presented, and many suggestions for the organization of the course are provided.
- PowerPoint presentation of selected material from each chapter is available.
- Data diskettes that contain data for end-of-chapter cases and statistical analysis áre available. SPSS®-interpreted examples are available on the CD.
- Videos that illustrate the practice of marketing research are available.
- A Website is developed to support the text. This Website will periodically update information that is relevant for keeping the text up to date. (www.imc-marketing.com/mr)
- End-of-chapter questions are also available on a diskette.
- A practice test version for the students has been added to the Website, which provides sample test questions in each chapter.

#### **ACKNOWLEDGMENTS**

Many debts have been accumulated during the years in which seven editions of this book have taken shape. We are especially grateful to our students, who gave us feedback from the consumer's perspective and whose field research projects provided many of the illustrations and problems; to our colleagues, who stimulated us and brought new ideas and approaches to our attention; and to our clients, who gave us many opportunities to put ideas into practice and thus broaden our understanding of marketing research as it is currently practiced. It

has been a continuing pleasure to associate with a class publisher, John Wiley & Sons, and to work with five Wiley editors—Rich Esposito, who nurtured the book through three editions, John Woods, who helped so much with the fourth edition, Tim Kent, who worked hard to make the fifth edition a success in the market, Ellen Ford, whose support helped make the sixth edition a powerful tool for gaining competitive advantage toward the end of the twentieth century, and Brent Gordon, who supported the launch of the seventh edition to meet the challenges of the 21st century.

A host of helpful and insightful reviews on the first four editions were received from Scott Armstrong, Ronald Beall, Andrew Brogowicz, Dave Bruzonne, Melvin Crask, William R. Dillon, Chris T. Ford, Gary T. Ford, Michael Hagerty, Chris Lovelock, Barry Mason, Douglas L. Maclachlan, Shelby McIntyre, Thomas Pilon, Peter Riesz, Gary Russell, Eli Seggev, Subrata Sen, Terence A. Shimp, Allan Shocker, Judy Wilkinson, Noel Zabriskie, Curt J. Donmeyer, A. Dwayne Ball, Jeffrey M. Ferguson, Zir Carmon, Anita Desembrana, John H. Summey, Alexandra Campbell, and Sanjit Sengupta.

The last three editions were created with the help of comments provided by the following reviewers: Frank Acito, John Gwin, Manoj Agarwal, Arun Jain, Greg Allenby, Deborah Roedder John, David Andrus, Ram Kesavan, Joseph Ballenger, Praveen Kopalle, Kapil Bawa, Jack Lesser, William Bearden, Gary McCain, Liz Blair, Janet Oglethorpe, Norman Bruvold, Catherine Schaffer, Robert Dyer, Bruce Seaton, Richard Easley, Hirokazu Takada, Andrew Forman, Jerry Thomas, Fran Franzak, Srinath Gopalakrishna, Gail Tom, Thomas W. Gruen, Bruce H. Lammers, John A. McCarthy, Rajan Natarajan, and Carlos M. Rodrigues.

We would like to express special thanks to Jaishankar Ganesh, Werner Reinartz, and Velavan Subramaniam for their assistance in the fifth edition, and Raj Echambadi, Suresh Sundaram, and Parul Shah for the sixth edition. Considerable gratitude is expressed to the Marketing Department at the University of Houston, particularly to Dr. Ed Blair and Dr. Keith Cox, for providing the necessary infrastructural support. Great appreciation is extended to Robert P. Leone for acting as a sounding board for all the ideas generated during the creation of this and past editions.

We would like to express thanks to Rajkumar Venkatesan, Thulasi Divya Vijayan, Amitabh Dubey, Anthony Loayza, and Asri F. Margono for the production of the seventh edition.

We also wish to thank the John Wiley group of Brent Gordon, Cynthia Snyder, Robin Factor, Jeff Marshall, and Christine Cervoni for all the excellent service they provided during the creation of this edition.

Finally, we wish to express our sincere appreciation to our families and friends for their constant support, encouragement, and sacrifices during the creation of this book.

David A. Aaker V. Kumar George S. Day

# **BRIEF CONTENTS**

#### PART I

The Nature and Scope of Marketing Research

**Chapter 1** A Decision-Making Perspective on Marketing Research, 1

Chapter 2 Marketing Research in

Practice, 22

Chapter 3 The Marketing Research

Process, 40

**Chapter 4** Research Design and Implementation, 70

# PART II Data Collection

#### SECTION A

#### Secondary and Exploratory Research

**Chapter 5** Secondary Sources of Marketing Data, 102

**Chapter 6** Standardized Sources of Marketing Data, 128

**Chapter 7** Marketing Research on the Internet, 156

**Chapter 8** Information Collection: Qualitative and Observational Methods, 181

#### SECTION B

#### Descriptive Research

**Chapter 9** Information from Respondents: Issues in Data Collection, 217

**Chapter 10** Information from Respondents: Survey Methods, 233

Chapter 11 Attitude Measurement, 272

Chapter 12 Designing the Questionnaire, 303

#### SECTION C Causal Research

Chapter 13 Experimentation, 331

#### SECTION D

#### Sampling

Chapter 14 Sampling Fundamentals, 363

Chapter 15 Sample Size and Statistical

Theory, 392

viii

#### PART III Data Analysis

**Chapter 16** Fundamentals of Data Analysis, 422

**Chapter 17** Hypothesis Testing: Basic Concepts and Tests of Associations, 443

**Chapter 18** Hypothesis Testing: Means and Proportions, 462

#### PART IV

#### Special Topics in Data Analysis

**Chapter 19** Correlation Analysis and Regression Analysis, 500

**Chapter 20** Discriminant and Canonical Analysis, 532

Chapter 21 Factor and Cluster Analysis, 553

**Chapter 22** Multidimensional Scaling and Conjoint Analysis, 583

Chapter 23 Presenting the Results, 610

#### PART V Applications

Chapter 24 Traditional Applications of Marketing Research: Product, Price, Distribution, and Promotion, 627

Chapter 25 Contemporary Applications of Marketing Research: Competitive Advantage, Brand Equity, Customer Satisfaction, and Total Quality Management, 665

**Chapter 26** Emerging Applications of Marketing Research: Direct Marketing, Database Marketing; E-Commerce, and Relationship Marketing, 689

#### Appendix 1: Tables, 711

A-1. Standard Normal Probabilities, 711

A-2.  $\chi^2$  Critical Points, 712

**A-3.** F Critical Points, 714

**A-4.** *t* Critical Points, 717

**A-5.** Procedures for Conducting Univariate and Multivariate Analysis in SPSS, 718

A-6. Output of Select Tables in SPSS, 722

Glossary, 733

Index, 743

## **CONTENTS**

## PART I

# THE NATURE AND SCOPE OF MARKETING RESEARCH

# CHAPTER 1 A Decision-Making Perspective on Marketing Research, 1

Learning Objectives, 1

Introduction, 1

A Push to Probe Buying Habits in Latino Homes, 1 Minute Maid Quits Trying to Free OJ, 2 Future Grocery Store: It's Smaller and a Big Challenge for Brand Marketers, 2

Role of Marketing Research in Managerial Decision Making, 3

Situation Analysis, 4 Strategy Development, 6 Marketing Program Development, 8 Implementation, 10

Factors that Influence Marketing Research Decisions, 11

Relevance, 11 Type and Nature of Information
Sought, 11 Timing, 12 Availability of Resources,
12 Cost-Benefit Analysis, 12

Use of Marketing Research, 12

Does Marketing Research Guarantee Success?, 13

Ethics in Marketing Research, 13

The Sponsor's Ethics, 14 The Supplier's Ethics, 15 Abuse of Respondents, 16

The Respondent's Ethics and Rights, 17

International Marketing Research, 17

Summary, 19

Questions and Problems, 19

End Notes, 19

Case 1-1: Ethical Dilemmas in Marketing Research, 20

#### CHAPTER 2 Marketing Research in Practice, 22

Learning Objectives, 22

Information Systems, Decision Support Systems, and Marketing Research, 23

Databases, 23 Decision Support Systems, 23 Applying Information Systems to Marketing Research, 23 Marketing Decision Support Systems, 26

Characteristics of a MDSS, 26 Database, 26 Reports and Displays, 27 Analysis Capabilities, 27 Models, 27 Gaining Insights from a MDSS, 29

Suppliers of Information, 30

Corporate/In-House Marketing Research, 30 External Suppliers of the Research Industry, 32 Type and Nature of Services, 34

Criteria for Selecting External Suppliers, 35 The International Marketing Research Industry, 36 Career Opportunities in Marketing Research, 36 Summary, 37

Questions and Problems, 38

End Notes, 38

Appendix: Marketing Research Jobs, 39

#### CHAPTER 3 The Marketing Research Process, 40

Learning Objectives, 40

Overview of the Marketing Research Process, 40 The Preliminary Stages of the Marketing Research Process, 42

Step 1—Research Purpose, 42 Step 2—Research Objective, 47 Step 3—Estimating the Value of Information, 51

Planning a New HMO, 52

The International Marketing Research Process, 55 Framing Research Questions in an International Environment, 57

Summary, 59

Questions and Problems, 59

End Notes, 60

Appendix: The Value of Research Information Using Bayesian Decision Theory, 61

ix

Case 3-1: A VideOcart Test for Bestway Stores, 63 Case 3-2: Sperry/MacLennan Architects and

Planners, 64

Case 3-3: Phillips Electronics NV, 67

Case 3-4: Philip Morris Enters Turkey, 68

#### CHAPTER 4 Research Design and Implementation, 70

Learning Objectives, 70

Research Approach, 70

Types of Research, 72 Detective Funnel, 74 Data Collection Methods, 77 Choosing a Research

Approach for the HMO Study, 77

Research Tactics and Implementation, 79

Measurement, 79 Sampling Plan, 79

Anticipating the Analysis, 79 Analysis of Value versus Cost and Time Involved, 80 Errors in

Research Design, 80

Budgeting and Scheduling the Research Project, 80 Research Proposal, 82

Basic Contents of a Proposal, 83

Designing International Marketing Research, 85

Issues in International Research Design, 87

Determining Information Requirements, 87 Unit of Analysis, 88 Construct, Measurement, Sample, and

Analysis Equivalence, 88

Summary, 89

Questions and Problems, 89

End Notes, 90

Appendix: Errors in Research Design, 90

Case 4-1: Reynolds Tobacco's Slide-Box

Cigarettes, 91

Case 4-2: California Foods Corporation, 95

#### Cases for Part I. 99

Case I-1: Clover Valley Dairy Company, 99

#### PART II DATA COLLECTION

#### SECTION A: SECONDARY AND EXPLORATORY RESEARCH

#### **CHAPTER 5 Secondary Sources** of Marketing Data, 102

Learning Objectives, 102

Secondary Data, 102

Uses of Secondary Data, 103

Benefits of Secondary Data, 104

Limitations of Secondary Data, 104

Internal Sources of Secondary Data, 105

Internal Records, 105

Using Internal Data

Customer Feedback, 106 Effectively, 106

Customer Database, 107

External Sources of Secondary Data, 107

Published Data Sources, 107 Computer-Retrievable

Databases, 109 Accessing Computer-Retrievable

Databases, 112 Advantages of Computer-Retrievable

Methods, 112 Limitations of Computer-Retrievable

Methods, 112

Census Data, 114

Understanding the Census, 114

Standard Industrial Classification System, 116

Appraising Secondary Sources, 117

Applications of Secondary Data, 118

Demand Estimation, 118 Monitoring the

Segmentation and Targeting, 119 Environment, 119

Developing a Business Intelligence System, 121

Sources of Secondary Data for International Marketing Research, 122

Problems Associated with Secondary Data in International Research, 122

Comparability of Data, 123 Data Accuracy, 122

Applications of Secondary Data in International Research, 123

Summary, 124

Questions and Problems, 124

End Notes, 124

Case 5-1: Barkley Foods, 126

Case 5-2: Dell in Latin America?, 127

#### **CHAPTER 6 Standardized Sources** of Marketing Data, 128

Learning Objectives, 128

Retail Store Audits, 129

Nielsen Retail Index, 129

Consumer Purchase Panels, 130

Advantages of Consumer Panels, 132 Limitations of

Consumer Panels, 132

Scanner Services and Single-Source Systems, 133

Single-Source Scanner-Based Audit Services, 133

Systems, 136

Media-Related Standardized Sources, 141

Nielsen Television Index, 141

Arbitron Diary Panel,

142 Starch Scores, 143 Multimedia Services, 143

Applications of Standardized Sources of Data, 143 Measuring Product Sales and Market Share, 144 Measuring Advertisement Exposure and Effectiveness, Measuring Promotion Effectiveness, 144 Estimation and Evaluation of Models, 145

Summary, 145

Questions and Problems, 145

End Notes, 146

Case 6-1: Promotion of Rocket Soups, 147 Case 6-2: Kerry Gold Products, Ltd., 151

Case 6-3: Paradise Foods, 151

#### CHAPTER 7 Marketing Research on the Internet, 156

Learning Objectives, 156

What Is the Internet?, 157

Characteristics of the Internet, 159

WWW Information for Marketing Decisions, 160

The Internet and Marketing Research Today, 163

Primary Research, 164 Secondary Research, 168

Custom Search Service, 169 Agents, 170 Free Information Providers, 171 How to Search for

Information on the Web, 173 International Marketing Research, 173

The Internet and Marketing Research Developments, 176

Intranets, 176 Speed, 176 The Future of the

Internet, 177

Summary, 177

Questions and Problems, 177

End Notes, 178

Appendix: The Components of the Internet, 178

Case 7-1: Caring Children's Hospital, 182

#### CHAPTER 8 Information Collection: Qualitative and Observational Methods, 184

Learning Objectives, 184

Need for Qualitative Research, 184

Qualitative Research Methods, 185

Use of Computers in Qualitative Research, 186 Individual In-Depth Interviews, 187 Focus-Group Discussions, 189 Projective Techniques, 197

Limitations of Qualitative Methods, 202

Observational Methods, 203

207

Contrived Observation, 203 Direct Observation, 203 Physical Trace Content Analysis, 204 Measures, 204 Empathic Interviewing, 205

Humanistic Inquiry, 205 Behavior-Recording Devices, 205 Limitations of Observational Methods,

Recent Applications of Qualitative and Observational Methods, 207

Summary, 208

Ouestions and Problems, 209

End Notes, 210

Appendix: Myths of Qualitative Research: It's Conventional, But Is it Wisdom?, 211

Case 8-1: Mountain Bell Telephone Company, 213

Case 8-2: U.S. Department of Energy (A), 215

Case 8-3: Acura, 216

#### SECTION B: DESCRIPTIVE RESEARCH

#### **CHAPTER 9 Information from Respondents:** Issues in Data Collection, 217

Learning Objectives, 217

Information from Surveys, 217

Sources of Survey Error, 218

Nonresponse Errors Due to Refusals, 219 Inaccuracy in Response, 219 Interviewer Error, 222

Methods of Data Collection, 223

Factors Affecting the Choice of a Survey Method, 225

Sampling, 225 Type of Population, 225 Ouestion Form, 225 Ouestion Content, 226 Response

Rates, 226 Costs, 226 Available Facilities, 227 Duration of Data Collection, 227

Ethical Issues in Data Collection, 228

Summary, 229

Questions and Problems, 229

End Notes, 230

Case 9-1: Essex Markets (A), 231

Case 9-2: More Ethical Dilemmas in Marketing

Research, 232

#### **CHAPTER 10 Information from Respondents:** Survey Methods, 233

Learning Objectives, 233

Collecting Data, 233

Personal Interviewing, 234 Telephone Interviewing,

Mail Surveys, 242 Web Surveys, 249 Trends in

Combinations of Survey Methods, 249 Choice of Survey Methods for Survey Research, 252

HMO Study, 257

Surveys in the International Context, 258

Personal Interviews, 258 Telephone Interviews,

259 Mail Surveys, 259

Summary, 260

Questions and Problems, 261

End Notes, 262

Case 10-1: Project DATA: An Urban Transportation Study, 263

Case 10-2: Roland Development Corp., 269

#### CHAPTER 11 Attitude Measurement, 272

Learning Objectives, 272

What Are Attitudes?, 273

Cognitive or Knowledge Component, 273 Affective or Intention or Action Liking Component, 273 Component, 274

The Concept of Measurement and Scaling, 274

Properties of Measurement Scales, 274

Types of Attitude Rating Scales, 277

Single-Item Scales, 277 Multiple-Item Scales, 284

Continuous-Rating Scales, 287

General Guidelines for Developing a Multi-Item Scale, 289

Interpreting Attitude Scales, 290

Choosing an Attitudinal Scale, 292

Accuracy of Attitude Measurements, 293

Validity, 293 Reliability, 294 Sensitivity, 295

Generalizability, 295 Relevancy, 296

Scales in Cross-National Research, 296

Summary, 296

Questions and Problems, 297

End Notes, 298

Case 11-1: Wine Horizons, 299 Case 11-2: National Kitchens, 301

#### CHAPTER 12 Designing the Questionnaire, 303

Learning Objectives, 303

Planning What to Measure, 303

Translating Research Objectives into Information Requirements, 305

Formatting the Question, 305

Open-Response Questions, 306-Closed-Response Questions, 307 Using Both Open-Response and

Closed-Response Questions, 311

Question Wording: A Problem of Communication, 311

Asking Sensitive Questions, 314

Sequence and Layout Decisions, 316

Order Bias: Does the Question Create the Answer?, 317

Pretesting and Correcting Problems, 319

Pretest Design, 319 Role of the Pretest, 321

Questionnaire Design for International Research, 321

Choosing the Question Format for Cross-National

Research, 321 Problems Faced in Wording Questions

for International Research, 322

Summary, 324

Questions and Problems, 324

End Notes, 327

Case 12-1: Essex Markets (B), 328

Case 12-2: Smith's Clothing (A), 328

Case 12-3: Compact Lemon, 329

#### xii

#### SECTION C: CAUSAL RESEARCH

#### CHAPTER 13 Experimentation, 331

Learning Objectives, 331

Descriptive versus Experimental Research, 332

What Are Causal Relationships?, 332 Limitations of Descriptive Designs, 332

What Constitutes Causality?, 334

Direction of Causation Issue, 334 Conditions for Valid Causal Inferences, 334

Issues in Experimental Research, 335

Basic Symbols and Notations, 335

Types of Experimental Designs, 337

Classical Designs, 337 Statistical Designs, 334

Laboratory and Field Experiments, 352

Threats to Experimental Validity, 352

Threats to Internal Validity, 353 Threats to External Validity, 353

Guidelines for Conducting Experimental Research, 354

Common Misuses of Experimental Research in Marketing, 356

Limitations of Experiments, 356

Cost. 356 Security, 357 Implementation Problems, 357 Uncertain Persistency of Results, 358

Summary, 358

Questions and Problems, 359

End Notes, 360

Case 13-1: Evaluating Experimental Designs, 361

Case 13-2: Barrie Food Corporation, 362

#### SECTION D: SAMPLING

#### CHAPTER 14 Sampling Fundamentals, 363

Learning Objectives, 363

Sample or Census, 363

When Census Is Appropriate, 364 When a Sample Is Appropriate, 364 Error in Sampling, 364

Sampling Process, 365

Determining the Target Population, 365 Determining the Sampling Frame, 367 Selecting a Sampling Procedure, 370

Probability Sampling, 371

Selecting the Probability Sample, 371 Multistage Design, 376

Nonprobability Sampling, 378

Judgmental Sampling, 378 Snowball Sampling, 379 Convenience Sampling, 379 Quota Sampling, 380 Determining the Sample Size, 381 Nonresponse Problems, 381

Shopping Center Sampling, 383

Shopping Center Selection, 383 Sample Locations within a Center, 383 Time Sampling, 384

Sampling People versus Shopping Visits, 384

Sampling in the International Context, 385

Selecting the Sampling Frame, 385 Sampling

Procedure, 386

Summary, 387

Questions and Problems, 387

End Notes, 389

Case 14-1: Exercises in Sample Design, 390

Case 14-2: Talbot Razor Products Company, 390

# CHAPTER 15 Sample Size and Statistical Theory, 392

Learning Objectives, 392

Determining the Sample Size: Ad Hoc Methods, 392

Rules of Thumb, 392 Comparable Studies, 393

Budget Constraints, 393 Factors Determining

Sample Size, 393

Population Characteristics/Parameters, 394
Sample Characteristics/Statistics, 395
Sample Poliability, 396

Sample Reliability, 396

Interval Estimation, 398

Sample Size Question, 399

Determining the Population Standard Deviation, 401

Proportions, 401

Coefficient of Variation, 402

Several Questions, 403

Stratified Sampling, 403

Multistage Design, 405

Sequential Sampling, 406

Summary, 406

Questions and Problems, 406

End Notes, 408

#### Cases for Part II, 409

Case II-1: Pacific Gas & Electric (A), 409

Case II-2: Currency Concepts International, 416

## PART III DATA ANALYSIS

## CHAPTER 16 Fundamentals of Data Analysis, 422

Learning Objectives, 422

Preparing the Data for Analysis, 423

Data Editing, 423 Coding, 424 Statistically Adjusting the Data, 424

Strategy for Data Analysis, 427

Tabulation: Frequency Distribution, 428 Tabulation: Descriptive Statistics, 429 Difference between Means or Percentages, 430

Cross-Tabulations, 431

Factors Influencing the Choice of Statistical Technique, 433

Type of Data, 433 Research Design, 433 Assumptions Underlying Test Statistic, 435

An Overview of Statistical Techniques, 435

Presenting the Results, 439

Summary, 440

Ouestions and Problems, 440

End Notes, 441

Appendix, 442

# CHAPTER 17 Hypothesis Testing: Basic Concepts and Tests of Associations, 443

Learning Objectives, 443
The Logic of Hypothesis Testing, 444
An Illustrative Example, 444

Steps in Hypothesis Testing, 445

Basic Concepts of Hypothesis Testing, 446

The Null and Alternative Hypotheses, 446 Choosing the Relevant Statistical Test and the Appropriate Probability Distribution, 446 Choosing the Critical Value, 446

Cross-Tabulation and Chi-Square, 449

The Concept of Statistical Independence, 450 Chi-Square as a Test of Independence, 451 Measures of Association for Nominal Variables, 454 The Chi-Square Goodness-of-Fit Test, 457

Summary, 458

Questions and Problems, 459

End Notes, 459

Case 17-1: Medical Systems Associates: Measuring Patient Satisfaction, 460

# CHAPTER 18 Hypothesis Testing: Means and Proportions, 462

Learning Objectives, 462

Commonly Used Hypothesis Tests in Marketing Research, 463

Testing Hypothesis about a Single Mean, 463 Hypothesis Testing for Differences between Means, 466 Hypothesis Testing of Proportions, 469 Hypothesis Testing of Difference between Proportions, 470

The Probability-Values (p Values) Approach to Hypothesis Testing, 471

xiii

Effect of Sample Size and Interpretation of Test Results, 472

Relationship between Confidence Interval and Hypothesis Testing, 473

Analysis of Variance (ANOVA), 474

One-Factor Analysis of Variance, 475 ANOVA Table, 478

Expanding the

Summary, 482

Questions and Problems, 482

End Notes, 484

Case 18-1: American Conservatory Theater, 484

Case 18-2: Apple Appliance Stores, 485

#### Cases for Part III, 488

Case III-1: The Vancouver Symphony Orchestra, 488

Case III-2: Pacific Gas & Electric (B), 494

Case III-3: Ralston Development Company, 496

#### PART IV SPECIAL TOPICS IN DATA ANALYSIS

#### **CHAPTER 19 Correlation Analysis** and Regression Analysis, 500

Learning Objectives, 500

Correlation Analysis, 501

Simple Correlation Coefficient, 502 Testing the Significance of the Correlation Coefficient, 504 Partial Correlation Coefficient, 505

Regression Analysis, 505

Simple Linear Regression Model, 506 Multiple

Regression, 514 Parameter Interpretation in Multiple

Regression, 518 Tests of Significance and Their

Interpretations, 519 Interactions, 523 Analyzing Residuals, 523 Predictive Validity, 523

Regression with Dummy Variables, 524

Summary, 525

Questions and Problems, 526

End Notes, 528

Case 19-1: The Seafood Grotto, 529

Case 19-2: Ajax Advertising Agency, 530

Case 19-3: Election Research, Inc., 531

#### End Notes, 551

Case 20-1: Southwest Utility, 551

#### CHAPTER 21 Factor and Cluster Analysis, 553

Learning Objectives, 553

Factor Analysis, 554

Purpose, 554 Methodology, 554 A Geometric Perspective, 554 Principal Component Analysis,

Common Factor Analysis, 565

Summary of Factor Analysis, 565

Cluster Analysis, 566

Problem Definition, 567 Measures of Similarity, 567 Clustering Approach, 568 Number of Clusters, 573

Evaluating and Profiling the Clusters, 575

Statistical Inference, 576

Summary of Cluster Analysis, 576

Ouestions and Problems, 577

End Notes, 578

Case 21-1: Store Image Study, 578

Case 21-2: Behavioral Research, 580

#### CHAPTER 20 Discriminant and Canonical Analysis, 532

Learning Objectives, 532

Discriminant Analysis, 532

Objectives, 532 Basic Concept, 533 Methodology, 533 Comparing

Group Assignment, 535 Regression and Discriminant Analysis, 536

Application, 536 Estimation, 537 Determination

of Significance, 537 Interpretation, 537

Classification and Validation, 540

Multiple Discriminant Analysis, 541

Application, 541 Discussion of Results, 541

Summary of Discriminant Analysis, 544

Canonical Correlation Analysis, 545

Application, 545 Discussion of Results, 546

Summary of Canonical Correlation Analysis, 549

Questions and Problems, 549

xiv

#### CHAPTER 22 Multidimensional Scaling and Conjoint Analysis, 583

Learning Objectives, 583

Multidimensional Scaling, 583

Attribute-based Approaches, 584

Factor Analysis, 584 Discriminant Analysis, 585 Comparing Factor and Discriminant Analysis, 585 Introducing Importance Weights, 586 Correspondence

Analysis, 586 Basic Concepts of MDS, 586

Evaluating the MDS Solution, 587 Application of

MDS with Nonattribute Data, 589 592

Issues in MDS.

Summary of MDS, 593

Conjoint Analysis, 594

Overview of Conjoint Analysis, 595 Interpreting Attribute Importance, 596 Collecting Trade-off Data, 597 Comparing Data Collection Approaches, 598