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Nota di contenuto	Preface -- Acknowledgements -- 1 An Overview of Sample Design and Weighting -- 2 Project 1: Design a Single-Stage Personnel Survey -- 3 Sample Design and Sample Size for Single-Stage Surveys -- 4 Power Calculations and Sample Size Determination -- 5 Mathematical Programming -- 6 Outcome Rates and Effect on Sample Size -- 7 The Personnel Survey Design Project: One Solution -- 8 Project 2: Designing an Area Sample -- 9 Designing Multistage Samples -- 10 Area Sampling -- 11 The Area Sample Design: One Solution -- 12 Project 3: Weighting a Personnel Survey -- 13 Basic Steps in Weighting -- 14 Calibration and Other Uses of Auxiliary Data in Weighting -- 15 Variance Estimation -- 16 Weighting the Personnel Survey: One Solution -- 17 Multiphase Designs -- 18 Nonprobability Samples -- 19 Process Control and Quality Measures -- Appendix A: Notation Glossary -- Appendix B: Data Sets -- Appendix C: R Functions Used in this Book -- References -- Solutions to Selected Exercises -- Index.
Sommario/riassunto	The goal of this book is to put an array of tools at the fingertips of

students, practitioners, and researchers by explaining approaches long used by survey statisticians, illustrating how existing software can be used to solve survey problems, and developing some specialized software where needed. This volume serves at least three audiences: (1) students of applied sampling techniques; 2) practicing survey statisticians applying concepts learned in theoretical or applied sampling courses; and (3) social scientists and other survey practitioners who design, select, and weight survey samples. The text thoroughly covers fundamental aspects of survey sampling, such as sample size calculation (with examples for both single- and multi-stage sample design) and weight computation, accompanied by software examples to facilitate implementation. Features include step-by-step instructions for calculating survey weights, extensive real-world examples and applications, and representative programming code in R, SAS, and other packages. Since the publication of the first edition in 2013, there have been important developments in making inferences from nonprobability samples, in address-based sampling (ABS), and in the application of machine learning techniques for survey estimation.

New to this revised and expanded edition:

- Details on new functions in the *PracTools* package
- Additional machine learning methods to form weighting classes
- New coverage of nonlinear optimization algorithms for sample allocation
- Reflecting effects of multiple weighting steps (nonresponse and calibration) on standard errors
- A new chapter on nonprobability sampling
- Additional examples, exercises, and updated references

Throughout Richard Valliant, PhD, is Research Professor Emeritus at the Institute for Social Research at the University of Michigan and at the Joint Program in Survey Methodology at the University of Maryland. He is a Fellow of the American Statistical Association, an elected member of the International Statistical Institute, and has been an Associate Editor of the *Journal of the American Statistical Association*, *Journal of Official Statistics*, and *Survey Methodology*. Jill A. Dever, PhD, is Senior Research Statistician at RTI International in Washington, DC. She is a Fellow of the American Statistical Association, Associate Editor for *Survey Methodology* and the *Journal of Official Statistics*, and an Assistant Research Professor in the Joint Program in Survey Methodology at the University of Maryland. She has served on several panels for the National Academy of Sciences and as a task force member for the American Association of Public Opinion Research's report on nonprobability sampling. Frauke Kreuter, PhD, is Professor and Director of the Joint Program in Survey Methodology at the University of Maryland, Professor of Statistics and Methodology at the University of Mannheim, and Head of the Statistical Methods Research Department at the Institute for Employment Research (IAB) in Nürnberg, Germany. She is a Fellow of the American Statistical Association and has been Associate Editor of the *Journal of the Royal Statistical Society*, *Journal of Official Statistics*, *Sociological Methods and Research*, *Survey Research Methods*, *Public Opinion Quarterly*, *American Sociological Review*, and the *Stata Journal*. She is founder of the International Program for Survey and Data Science and co-founder of the Coleridge Initiative.
