Tillé, Yves

From the cover of the book: “A much-needed reference on survey sampling and its applications that presents the latest advances in the field.

Seeking to show that sampling theory is a living discipline with a very broad scope, this book examines the modern development of the theory of survey sampling and the foundations of survey sampling. It offers readers a critical approach to the subject and discusses putting theory into practice. It also explores the treatment of non-sampling errors featuring a range of topics from the problems of coverage to the treatment of non-response. In addition, the book includes real examples, applications, and a large set of exercises with solutions.

Sampling and Estimation from Finite Populations begins with a look at the history of survey sampling. It then offers chapters on: population, sample, and estimation; simple and systematic designs; stratification; sampling with unequal probabilities; balanced sampling; cluster and two-stage sampling; and other topics on sampling, such as spatial sampling, coordination in repeated surveys, and multiple survey frames. The book also includes sections on: post-stratification and calibration on marginal totals; calibration estimation; estimation of complex parameters; variance estimation by linearization; and much more.

– Provides an up-to-date review of the theory of sampling
– Discusses the foundation of inference in survey sampling, in particular, the model-based and design-based frameworks
– Reviews the problems of application of the theory into practice
– Also deals with the treatment of non-sampling errors

Sampling and Estimation from Finite Populations is an excellent book for methodologists and researchers in survey agencies and advanced undergraduate and graduate students in social science, statistics, and survey courses.”

The book is very large structured in Contents, List of Figures, List of Tables, List of Algorithms, Preface, Preface of the First French Edition (2001), Table of Notations, 17 chapters (with 139 subchapters), bibliography, Author index, Subject index:


11 chapters finish with exercises (Chaps. 2–7, 9–12, 15). The book contains more than 560 references and the subject index about 570 items. It can be recommended to all readers, who are interested in this field.

Reviewer: Ludwig Paditz (Dresden)
MSC:
62-01 Introductory exposition (textbooks, tutorial papers, etc.) pertaining to statistics
62D05 Sampling theory, sample surveys
62J05 Linear regression; mixed models
62H30 Classification and discrimination; cluster analysis (statistical aspects)
62H12 Estimation in multivariate analysis
62G05 Nonparametric estimation

Keywords:
cluster sampling; two stage sampling; Bernoulli sampling; Poisson sampling; stratified design; multiple regression estimation; cumulative distribution function estimation; variance estimation; quantile estimation; calibration estimation

Full Text: DOI