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estimation under the calibration approach; 6.5 Calibration estimators for domains; 6.6 Comments on the calibration approach 6.7 Alternative sets of calibrated weights 6.8 Properties of the calibrated weights; Chapter 7 Examples of Calibration Estimators; 7.1 Examples of familiar estimators for data with nonresponse; 7.2 The simplest auxiliary vector; 7.3 One-way classification; 7.4 A single quantitative auxiliary variable; 7.5 One-way classification combined with a quantitative variable; 7.6 Two-way classification; 7.7 A Monte Carlo simulation study; Chapter 8 The Combined Use of Sample Information and Population Information; 8.1 Options for the combined use of information 8.2 An example of calibration with information at both levels 8.3 A Monte Carlo simulation study of alternative calibration procedures; 8.4 Two-step procedures in practice; Chapter 9 Analysing the Bias due to Nonresponse; 9.1 Simple estimators and their nonresponse bias; 9.2 Finding an efficient grouping; 9.3 Further illustrations of the nonresponse; 9.4 A general expression for the bias of the calibration estimator; 9.5 Conditions for near-unbiasedness; 9.6 A review of concepts, terms and ideas; Appendix: Proof of Proposition 9.1; Chapter 10 Selecting the Most Relevant Auxiliary Information 10.1 Discussion 10.2 Guidelines for the construction of an auxiliary vector; 10.3 The prospects for near-zero bias with traditional estimators; 10.4 Further avenues towards a zero bias; 10.5 A further tool for reducing the bias; 10.6 The search for a powerful auxiliary vector; 10.7 Empirical illustrations of the indicators; 10.8 Literature review; Chapter 11 Variance and Variance Estimation; 11.1 Variance estimation for the calibration estimator; 11.2 An estimator for ideal conditions; 11.3 A useful relationship; 11.4 Variance estimation for the two-step A and two-step B procedures 11.5 A simulation study of the variance estimation technique

Sommario/riassunto

Around the world a multitude of surveys are conducted every day, on a variety of subjects, and consequently surveys have become an accepted part of modern life. However, in recent years survey estimates have been increasingly affected by rising trends in nonresponse, with loss of accuracy as an undesirable result. Whilst it is possible to reduce nonresponse to some degree, it cannot be completely eliminated. Estimation techniques that account systematically for nonresponse and at the same time succeed in delivering acceptable accuracy are much needed. Estimation in Surveys with Nonresponses