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In This Issue

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In This Issue

This issue of *Survey Methodology* opens with the seventh paper in the annual invited paper series in honour of Joseph Waksberg. The editorial board would like to thank the members of the selection committee - Gordon Brackstone, chair, Bob Groves, Sharon Lohr and Wayne Fuller – for having selected Carl-Erik Särndal as the author of this year's Waksberg Award paper. For this occasion, a special Workshop on Calibration and Estimation in Surveys (WCES) was organised on October 31st and November 1st at Statistics Canada. Professor Carl-Erik Särndal was the keynote speaker and presented his Waksberg paper. During the two days, 12 other speakers presented a paper and paid their tribute to Carl-Erik Särndal.

In his paper entitled "The Calibration Approach in Survey Theory and Practice" Särndal discusses the development and application of calibration in survey sampling. He describes the concept of calibration in some detail and contrasts it with generalized regression. He then describes different approaches to calibration including the minimum distance method, instrumental variables, and model calibration. Several examples of calibration and alternatives are considered.

Laaksonen discusses weighting in two phase sampling in which respondents to the first phase are asked if they are willing to participate in the second phase. The weighting thus has to deal with non-response at both phases of the survey, and also account for first-phase respondents who were unwilling to participate in the second phase. Using data from a Finnish survey on leisure-time activities, he empirically evaluates variations on a weighting method that uses response propensity modeling and calibration.

The article by Ardilly and Lavallée discusses the weighting problem for the SILC (Statistics on Income and Living Conditions) survey in France. This survey uses a rotating sample plan with nine panels. To obtain approximate estimators without bias, the authors relied on the weight-share method. Longitudinal weighting is discussed first, and then cross-sectional weighting is also discussed.

The paper by Kim, Li and Valliant deals with the problem of small cells or large weight adjustments when poststratification is used. The authors first describe several standard estimators and then introduce two alternative estimators based on cell collapsing. They study the performance of these estimators in terms of their effectiveness in controlling the coverage bias and the design variance. These properties are evaluated theoretically and also through a simulation study using a population based on the 2003 National Health Interview Survey.

Mecatti proposes a simple multiplicity estimator in the context of multi-frame surveys. She first shows that the proposed estimator is design-unbiased. Then, she proposes an unbiased estimator of the variance of the multiplicity estimator. Using 29 simulated populations, she compares the multiplicity estimator with alternative estimators proposed in the literature.

Haziza studies the problem of variance estimation for a ratio of two totals when marginal random hot deck imputation has been used to fill in missing data. Two approaches to inference are considered, one using an imputation model and a second one using a nonresponse model. Variance estimators are derived under two frameworks: the reverse approach of Shao and Steel (1999) and the traditional two-phase approach.

In their paper, Chipperfield and Preston describe the without replacement scaled bootstrap variance estimator that was implemented in the Australian Bureau of Statistics' generalized estimation system ABSEST. The without replacement scaled bootstrap estimator is shown to be more efficient than the with replacement scaled bootstrap estimator for stratified samples when the stratum sizes are small. In addition, the without replacement scaled bootstrap estimator was shown to require fewer replicates to achieve the same replication error as the with replacement estimator. For the ABSEST system, bootstrap variance estimators were chosen over other variance estimation methods for their computational efficiency and the without replacement bootstrap was selected for the reasons above.

Oleson, He and Sun describe a Bayesian modelling approach for situations where the sampling design is stratified and the estimation procedure requires post-stratification. The method is illustrated with data from the 1998 Missouri Turkey Hunting Survey for which the strata were defined by the hunter's place of residence but estimates were required at the county level.

Fabrizi, Ferrante and Pacei discuss a methodology which is increasingly important in modern sample survey applications. They investigate the effect of borrowing strength from additional panel information for cross sectional household income estimates for small areas in Italy. The proposed methods seem to tackle a problem which may have further relevance for European Official Statistics, and possibly also in the area of small area statistics for indicators which may be used for policy research.

Renaud presents an interesting application of a post-enumeration survey to estimate net undercoverage in the 2000 census in Switzerland. The objective of this survey was slightly different from that of other countries in that it was not designed to adjust the Census counts for net undercoverage, but rather to gather information to improve the quality of subsequent censuses.

In the final paper, Elliot and Haviland consider combining a convenience sample with a probability based sample to obtain an estimate with a smaller MSE. The resulting estimator is a linear combination of the convenience and probability sample estimates with weights that are a function of the bias. By looking at the maximum incremental contribution of the convenience sample, they show that improvement to the MSE may be attainable only in certain circumstances.

Harold Mantel, Deputy Editor