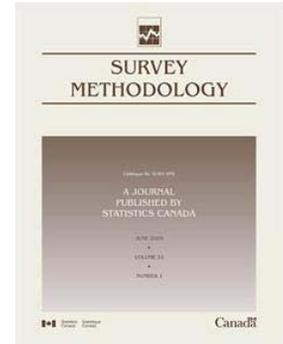


Article

In this issue



December 1999

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This December 1999 issue and upcoming June 2000 issue of the Journal contain papers from some prominent statisticians invited to participate in the celebration of 25 successful years of existence of *Survey Methodology*. As an introduction to this special issue, Richard Platek, the founding Chairman, who remained at the helm of the Journal until 1987, has provided an excellent overview of the gradual evolution of the Journal from a modest divisional to a respected departmental publication and then to an international publication of repute.

I would like to take this opportunity to acknowledge a few important events which helped shape the Journal to the status it currently enjoys internationally. Firstly, during the first 10 years of the Journal, which may be called its formative years, important articles by some of the senior management of the Bureau, such as G.J. Brackstone, I.P. Fellegi, P.G. Kirkham, L.E. Rowebottom, J. Spear, M.B. Wilk and D.A. Worton, as well as by some well known survey statisticians, such as J.G. Bethlehem, R.E. Fay, S.E. Fienberg, W.A. Fuller, L. Kish, G. Nathan, J.N.K. Rao and C.-E. Särndal helped to set the solid foundation of the Journal and defined its role as a forum for publication of innovative articles relevant to a statistical agency.

Secondly, the support and recognition of *Survey Methodology* by the ASA Section on Survey Research Methods, and in particular by some of its past chairs B. Bailar, G. Kalton, F.J. Scheuren and D. Binder, helped to popularize the Journal more widely among survey methods researchers as well as practitioners.

Lastly and perhaps most importantly, a large part of the success the Journal has enjoyed over the years may be attributed to the excellence and dedication of the Editorial Board members and the strong commitment of the referees. The size and composition of the Board has changed significantly over the years. The current membership as usual is given on an earlier page and a complete list of past Associate and Assistant Editors is provided at the end of this issue. There are however a few members, such as D.R. Bellhouse, J.N.K. Rao, and G. Kalton, who joined the Board in 1984, the year when the scope of the Journal was greatly enlarged, and are still strongly committed to its cause.

I now turn to the individual papers in this special issue.

Fellegi considers the challenges facing government statistical agencies and strategies to prepare for these challenges. He first describes the environment of changing information needs and the social, economic and technological developments driving this change. He goes on to describe both internal and external elements of a strategy to meet these evolving needs. Internally, a flexible capacity for survey taking and information gathering must be developed. Externally, contacts must be developed to ensure continuing relevance of statistical programs while maintaining non-political objectivity.

Kish describes the challenges and opportunities of combining data from surveys of different populations. Examples include multinational surveys where the data from surveys of several countries are combined for comparison and analysis, as well as cumulated periodic surveys of the "same" population. He also compares and contrasts the combining of surveys with the combining of experiments.

Brackstone discusses issues of quality in the products of a national statistical agency. He identifies and discusses six different dimensions of data quality: relevance, accuracy, timeliness, accessibility, interpretability and coherence. He then describes the components of a quality management system.

In his paper Scheuren considers the possible uses of administrative records to enhance and improve population censuses. After reviewing previous uses of administrative records in an international context, he puts forward several proposals for research and development towards increased use of administrative records in the American statistical system.

Godambe and Thompson consider the problem of confidence intervals in survey sampling. They first review the use of estimating functions to obtain model robust pivotal quantities and associated confidence intervals, and then discuss the adaptation of this approach to the survey sampling context. Details are worked out for some more specific types of models, and an empirical comparison of this approach with more conventional methods is presented.

J.N.K. Rao gives an overview of the methods and models used for small area estimation. This is an update of his previous overview (Ghosh and Rao 1994, *Statistical Science*). He first presents a general discussion of small area models, making a distinction between areal level models and unit level models. He then describes the development in the three main approaches for inference based on these models: EBLUP, EB and HB, and gives several examples of recent applications. Finally, he presents an interesting discussion identifying the gaps and areas that require further research.

Sirken and Shimizu derive a Horvitz-Thompson estimator for population based establishment sample surveys (PBESs). A PBES is a survey of establishments where the sampling frame consists of establishments with which a preliminary sample of households or individuals has had some contact.

Deville shows how to use simple tools to calculate the variance of a complex estimator using a linearization technique. The process is that of a software used at INSEE for estimation of the variance of a complex estimator. It gives a way of computing the variance of a total estimated by the simple expansion estimator. In the case of a complex statistic, the process uses a derived variable that reduces the computations to those of the simple expansion estimator. Multiple examples are given to illustrate the process.

Brewer proposes a method of weight calibration in survey sampling, called cosmetic calibration, which yields cosmetic estimators of totals, *i.e.* estimators that can be interpreted as both design-based and prediction based. He also discusses variance estimation and shows how the problem of negative weights can be easily and naturally handled using cosmetic calibration. Finally he compares the properties of the weights and the resulting estimators to some alternative approaches using some Australian farm data.

In the final paper of this special issue, Estevao and Särndal consider two types of design-based estimators used for domain estimation. The first, a linear prediction estimator, is built on the principle of model fitting, requires known auxiliary information at the domain level, and results in weights that depend on the domain to be estimated. The second, a uni-weight estimator, has weights which are independent of the domain being estimated and has the clear advantage that it does not require the calculation of different weight systems for each different domain of interest. These estimators are compared and situations under which one is preferred over the other are identified.

I am pleased to add that with this 25th Anniversary issue, we are making Survey Methodology available to you in electronic format. It is easy to access the Journal on our Web site by keying in the following URL address: www.statcan.ca/english/e-pub.

Once you've checked out the electronic version we'd appreciate you completing the brief on-line survey you'll find at the same location. This prototype is being offered as a test to find out what your future format preferences for the Journal might be.

I assure you that any change in delivery format will not affect the high quality you expect and receive from Survey Methodology.

M.P. Singh