

## Preface

### Introduction to the Special Issue on Establishment Surveys

Welcome to this special issue of the Journal of Official Statistics containing articles emanating from the fourth International Conference on Establishment Surveys (ICES IV). We hope that it will present some interesting insights into the world of establishment surveys. If it's somewhere you don't normally tread, do come in and have a look around.

### International Conference on Establishment Surveys

The first International Conference on Establishment Surveys (ICES) was held in 1993 in Buffalo, New York, filling a gap in the conference schedule for those working on surveys of businesses (or establishments), farms, institutions and other non-household populations. Many of these surveys are run in the public sector by National Statistical Institutes, although in North American countries such surveys are occasionally undertaken under contract. ICES II and III followed at seven-year intervals, in Buffalo in 2000 and Montreal in 2007.

By 2007, there was a general feeling that the pace of development in establishment surveys had quickened so that seven year conferences were too far apart, and ICES IV followed after five years. These conferences have been well attended: approximately 400, 450, 400 and 250 people respectively, and at least four people have managed to attend all four (the participation and registration lists on which this information is based have various quality issues, so there may be more). They have been likewise prolific, with more than 700 papers given over the conference series. Plans are in place for a four-yearly cycle in the future to fit around the World Statistics Congress. ICES V will take place in Geneva 20-23 June 2016, the first time that ICES has taken place outside North America (for more details of ICES V see [www.ices-v.ch](http://www.ices-v.ch)).

In her keynote address for ICES II, Susan Linacre ([Linacre 2000](#)) wrote that ICES I and ICES II had a striking amount in common, with incremental progress in many areas, but also further development in ICES II in some areas that were experimental or first put forward in ICES I, including additional countries applying ideas originating in other countries or agencies. She noted that this was a clear benefit of the ICES series. Looking through the range of papers presented at subsequent conferences, her comments are still relevant, and many people have had valuable experiences and insights to add to their own work and research through ICES. We hope that the papers presented in this issue will also spark some ideas and further developments, and look forward to seeing the fruits of that at future ICES conferences.

### Organisation

The first conferences were put together by interested groups of people one conference at a time. But after ICES III, it became clear that more structure was needed. A Continuation Committee was formed, and the American Statistical Association, which had been strongly associated with ICES from the beginning, was selected as a permanent host organisation. One happy consequence is that the proceedings of all the ICES, previously somewhat difficult to find if you didn't actually attend one, are all available on the ASA's website at [www.amstat.org/meetings/ices.cfm](http://www.amstat.org/meetings/ices.cfm)

## Trends in Topics

The original ICES highlighted topics that were specific to establishment surveys, including industrial classification, business register development and maintenance, dealing with outliers, sample coordination using permanent random numbers, disclosure avoidance practices in tabulations, and so on. Rivière (2002) would later summarise the characteristics of business statistics that make their methods rather different from those used by social surveys. On the data collection side, a lot of the techniques were similar to those used for social surveys, but the context was completely different, with challenges around reaching the right people to provide the information, evaluating the availability and quality of information in records systems, and developing collection modes that matched rapidly changing office technology. Many of the approaches specific to business surveys were not widely known and the book of invited papers (Cox et al. 1995) was an important reference for a long time.

Topics in ICES II and III reflected the main drivers of developments in survey-taking over the last 20 years, such as:

- electronic data collection and dissemination,
- generalized and integrated processing systems, and
- dealing with nonresponse.

The first two are often motivated by cost considerations. However, the general focus in the presented papers was on the development of quality instruments and processing systems, and the last driver is entirely about understanding and maintaining quality. None of these drivers is unique to establishment surveys, but the approaches needed to address them often are. ICES II featured sessions on improving response rates, including nonresponse management and priority follow-up of nonrespondents. Several countries shared their cutting-edge research on how to collect information with computer-assisted interviewing and through the web for business surveys. Two sessions presented ideas on the use of administrative data to supplement or replace data collection. ICES II was also notable for a number of papers dealing with data editing, a topic which was then a big focus for saving money by reducing editing resources.

ICES III continued several of these trends, with more sessions on electronic data collection, including Web and design interfaces, nonresponse and nonresponse bias, and unified statistical systems and architecture. It also saw a strong representation from the questionnaire testing community, with a wider range of countries using cognitive methods for developing business survey questionnaires and trying to get an understanding of the survey response process within establishments. On this topic, ICES III directly benefited from the first International Workshop on Business Data Collection Methodology in 2006, which brought together questionnaire design researchers and motivated ICES sessions and papers.

## ICES IV

The fourth ICES saw the influence of greater use of administrative data to keep costs down and reduce response burden, along with a big push on model-based approaches to inference, traditionally regarded as challenging for establishment survey because of the nonignorability of the sampling, but finding a ready home in some applications in agriculture and retail where there are many smaller establishments. There was continued emphasis on generalized systems, and on alleviating nonresponse and assessing and mitigating non-response bias. More work on cognitive methods to understand survey responses and improve their quality was included, and there were several papers on respondent burden and motivation driven by the BLUE-ETS project in Europe ([www.blue-ets.istat.it/](http://www.blue-ets.istat.it/)).

This special issue highlights interesting developments and innovative research presented at ICES IV. The collection of articles covers the range of statistical processes across the Generic Statistical Business Process Model (GSBPM, [www1.unece.org/stat/platform/display/GSBPM/Generic+Statistical+Business+Process+Model](http://www1.unece.org/stat/platform/display/GSBPM/Generic+Statistical+Business+Process+Model)). The issue includes some approaches which are quite new for business statistics, such as the adaptive design methods presented in the articles by Beaumont et al. and by Earp et al. The article by Münnich et al. connects different parts of the GSBPM by examining the impact of sample design choices on small area estimation.

Other approaches have been implemented in different types of surveys or provide new “twists” on accepted practices, such as the application of R-indicators to business survey data in the Ouwehand and Schouten article, the ongoing research on mean square estimation with seasonally adjusted data in Sverchkov and Pfeffermann’s article, and Cho et al. look at what can be used to predict the variability of surveys using generalized variance functions. Torres van Grinsven et al. examine what motivates people within establishments to respond to surveys, and how their participation can be encouraged, and Sigman et al. look at the influence of the timing of people’s participation on the conclusions from a staff survey, a type of survey which has received little attention at ICES to date.

Several articles continue the development of topics which have been a long-running part of ICES. One is the assessment of sampling using coordinated permanent random numbers described in Lindstrom’s article. Robbins continues the theme of compensating for non-response with an examination of the use of nonparametric transformations for imputation. Outliers are generally most important in establishment surveys and Mulry et al. compare M-estimation with Winsorization, continuing a line of ICES invited paper sessions on outliers. And Toth presents a new approach to disclosure limitation based on local averaging which has potential to make more establishment survey data available. All of the articles give an idea of the range of interesting topics in establishment surveys, and we hope that they will serve as an introduction and an incentive to learn more.

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