

the Survey Statistician

The Newsletter of the International Association of Survey Statisticians

No. 85

January 2022



INTERNATIONAL ASSOCIATION
OF SURVEY STATISTICIANS



INTERNATIONAL ASSOCIATION
OF SURVEY STATISTICIANS





The Survey Statistician No. 85, January 2022

Editors:

Danutė Krapavickaitė (*Vilnius Gediminas Technical University, Lithuania*) and Eric Rancourt (*Statistics Canada*)

Section Editors:

Peter Wright	Country Reports
Ton de Waal	Ask the Experts
Maria Giovanna Ranalli	New and Emerging Methods
Alina Matei	Book & Software Review

Production and Circulation:

Maciej Beręsewicz (*Poznań University of Economics and Business*), Natalie Shlomo (*The University of Manchester*)

The Survey Statistician is published twice a year by the International Association of Survey Statisticians and distributed to all its members. The Survey Statistician is also available on the IASS website at <http://isi-iass.org/home/services/the-survey-statistician/>

Enquiries for membership in the Association or change of address for current members should be addressed to:

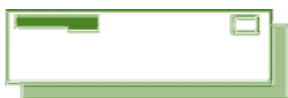
IASS Secretariat Membership Officer
Margaret de Ruiter-Molloy
International Statistical Institute, P.O. Box 24070,
2490 AB the Hague, The Netherlands

Comments on the contents or suggestions for articles in the Survey Statistician should be sent via e-mail to the editors Danutė Krapavickaitė (danute.krapavickaite@vilniustech.lt) or Eric Rancourt (eric.rancourt@canada.ca).

ISSN 2521-991X

In this Issue

- 3 Letter from the Editors**
- 4 Letter from the President**
- 6 Report from the Scientific Secretary**
- 7 News and Announcements**
 - Jean-Claude Deville obituary
 - Report on the BNU Summer School on Survey Statistics 2021
- 10 Ask the Experts**
 - Data Sources for Business Statistics: What has Changed? By Stefan Bender and Joe Sakshaug. *Reviewed paper*
- 19 New and Emerging Methods**
 - A gentle introduction to data integration in survey sampling, by Jae Kwang Kim . *Reviewed paper*
- 30 Book & Software Review**
 - Big Data Meets Survey Science. A Collection of Innovative Methods, by Alina Matei
- 32 Country Reports**
 - Argentina
 - Brazil
 - Canada
 - Japan
 - New Zealand
 - United States
- 38 Upcoming Conferences and Workshops**
- 40 In Other Journals**
- 48 Welcome New Members!**
- 49 IASS Executive Committee Members**
- 50 Institutional Members**



Letter from the Editors

Dear readers,

Happy New Year 2022. We are glad to present the January 2022 issue of TSS, another strong issue.

As usual, we start with the *Letter from the President* by Monica Pratesi. It is followed by the *Report from the Scientific Secretary*, Giovanna Ranalli. We welcome both of them and have already started to enjoy cooperating with them.

In the News and Announcement section, this issue then pays tribute to Jean-Claude Deville who passed away at the end of 2021. The section also contains a report on the 2021 Baltic-Nordic-Ukraine Summer School on Survey Statistics.

In the Ask-the-Experts section, Stefan Bender from the Deutsche Bundesbank & University of Mannheim and Joseph W. Saskhaug from the German Institute for Employment Research & Ludwig Maximilian University of Munich discuss the very much changed context of the use of data sources in business statistics. They explain how this field went from using almost exclusively surveys to incorporating and/or using a variety of administrative and commercial data, as well as text, image and other data from devices and internet.

Then, in the New and Emerging Methods section, Jae-Kwang Kim from Iowa State University, presents an interesting introduction to the ways to integrate data in the context of survey sampling when there are both a probability and a non-probability sample. He considers a number of approaches such as mass imputation, the propensity score method, calibration weighting, and doubly robust estimation methods.

To complete this issue, you will find the country reports (from six countries). As the President explains, we need to confirm and/or renew representatives but in the meantime, we would like to remind all members that this section could benefit from more submissions. This is followed by information on upcoming conferences and workshops and the tables of contents of a number of journals related to survey statistics.

We would like to thank each and everyone of those who devoted their time in organizing and preparing materials for this issue. If you have any information about conferences, events or just ideas you would like to share with other statisticians – please do go ahead and contact any member of the editorial board of the newsletter.

The Survey Statistician is available for downloading from the IASS website at <http://isi-iass.org/home/services/the-survey-statistician/>.

Danutė Krapavickaitė (danute.krapavickaite@vilniustech.lt)

Eric Rancourt (eric.rancourt@canada.ca)



Letter from the President

Dear IASS Members,

I hope you are doing well, especially in this unsettling and stress-full time of the coronavirus.

We will celebrate the 50th anniversary of the IASS in 2023. I would like to express my most sincere congratulations to all current and past members and my sincere gratitude to all the Presidents and EC members which brought and will bring the IASS at this important date.

This first formal letter is the occasion to introduce you in the new Executive Committee members and their roles:

- a) Vice President for finance: Jairo Arrow;
- b) Scientific secretary: M. Giovanna Ranalli (with the support of Nikos Tzavidis);
- c) Vice President for liaising with ISI EC and ISI PO plus administrative matters: Natalie Shlomo;
- d) Chair of the 2023 Cochran-Hansen prize committee: Nikos Tzavidis;
- e) IASS representative on the 2023 WSC scientific programme committee: Natalie Shlomo;
- f) IASS representative on the 2023 WSC short course committee: Natalie Shlomo;
- g) IASS representative on the ISI publications committee; M. Giovanna Ranalli;
- h) IASS Webinars Representatives 2021-2023; Andrea Silva (supported by the EC members as the EC has the collective responsibility of the programme).

IASS today is a prominent and well-respected science organization that brings together many hundreds of scholars from a variety of Institutions, spread all over the world.

The wisdom of our leaders in 1973, when the idea of an IASS was born, and in the following decades, when our association was established, paved the way for a rapid and continuing growth of survey methods in the world.

By the seventies, we have taken a prominent role in shifting the focus of research and policy to understanding and addressing the challenges faced by new data collection tools and methods. During the last decades, survey methods have been progressively evolving, following the development of new tools of data collection: smart devices as meters, mobile phones, GPS systems and several new applications. Methods have been continuously advancing to measuring uncertainty and data quality, integrating Big and small data sources and developing methods to make inferences from the data. At the same time new methods for analyzing large volumes of data, as machine learning and artificial intelligence methods, are emerging. The focus of the IASS has become and will remain engaging with scientific communities involved in data collection and socio-economic data analysis and embracing knowledge systems complementary to survey methods, as applied mathematics, computer science and information technologies. The voice of survey methods is now heard at global and regional conferences, from the Baltic-Nordic-Ukrainian network on survey statistics in Europe, where the IASS is a supporter, to the Workshops organized in Africa and Pakistan, where the IASS is one of only few region-based member associations.

Although our successes are many, it is not the time to rest.

Country IASS representatives need to be confirmed or renewed. Our communication plan using social media needs to be developed. The number of individual members and institution members needs to increase. Young generations of professionals and researchers from developed and developing countries need our support.

In the mandate, the EC's and my priorities will be to

- a) engage our members to become even more involved with the IASS both on the Country and Global levels,
- b) help our members to grow professionally, through the tools provided by the IASS (Conferences, Workshops, Prizes and Publications) and disseminated through the IASS's network,
- c) continue to increase this network with solutions and opportunities through the IASS communication plan and social networks.

We hope that these resources will help you to disseminate and develop survey methodology in your job as well as in your community and also to increase the number of IASS members. I shall devote my following formal letters to tell you of what we have achieved and what we have not.

The new challenges are emerging: we are grappling with an increasing "datafication" of all the aspects of our life: this makes Citizen Science and Citizen Generated Data interesting opportunities to design probability and non-probability surveys, with new "smart" data collection methods, opening new issues in designing training sets of data in artificial intelligence and machine learning, data integration and data analysis. In addition, we face the COVID-19 pandemic. As individuals and as an organization, we are affected by them. COVID-19 postponed some of our supported Conferences and Workshops, which will take place in the next months. COVID-19 transformed the life in our communities and forever altered the ways we conduct research. At the same time, it has given us an opportunity to reflect on what, how and why we pursue science in the survey methods research field.

Many important topics and emerging issues among those mentioned before were and will be treated and discussed in the new-born IASS Webinars series. I invite you all to join the IASS webinars series and act as a promoter of this initiative in your own network of researchers.

This new tool and the Covid 'pause' could provide an opportunity for our community to consider what kind of research in survey methods we would like, to make our partnership more fruitful to serve with accurate evidence and reliable data the scientific community and our stakeholders.

Finally, as we are celebrating the 49th anniversary of the IASS at the computer screens or in socially-distanced settings, we all thank the many colleagues and friends of the ISI PO and of the IASS who invested their passion in making it possible. Thanks also to our current members for support, and rejoice in hoping that the path we are on is the road to working together across disciplines, knowledge systems, borders and generations.

Wishing you a peaceful and serene 2022 with the IASS,

Yours

Monica Pratesi

IASS President



Report from the Scientific Secretary

I have been appointed Scientific Secretary of IASS during the first meeting of the newly elected IASS EC in September. I am very grateful to the members of the EC for their trust, and I am indebted to James Chipperfield for his legacy on this role. As my first duty, I had to choose a topic for the “**New and emerging methods**” section of *The Survey Statistician*. I wanted to give space to methods for data integration as, in my opinion, this is the new framework for survey estimation. In this regard, I didn't have to give it a lot of thought and immediately asked Prof. Jae Kwang Kim (Iowa State University) who has kindly agreed to give *The Survey Statistician* “**A gentle introduction to data integration in survey sampling**”. His paper provides a systematic review of data integration techniques for combining, in particular, a probability sample with a non-probability sample when the study variable is observed in the non-probability sample only. In this setting, information bias affects the probability sample, whereas selection bias affects the non-probability sample. Prof. Kim reviews statistical procedures for handling missing data, such as mass imputation, propensity score, calibration weighting, and doubly robust methods to adjust for selection bias in the non-probability sample or adjust for information bias in the probability sample. Please, contact me if you are interested in writing an article for the “New and emerging methods” of future editions of *The Survey Statistician*.

Another activity that has held the EC members busy, and Andrea Diniz da Silva in particular, is continuing with the organization of the **Webinar series** that was inaugurated at the beginning of the Covid Pandemic. The Webinars held after the last Report have covered issues in constructing frames using cost-saving website databases, new sampling approaches to estimate graph related parameters, advances and applications of adaptive survey designs, new challenges for survey methods in the next decade, and robust methods to analyze data coming from sources linked with error. Please, visit the webinar section of our website <http://isi-iass.org/home/webinars/> for slides and that of ISI <https://www.isi-web.org/events/webinars> for upcoming and recorded webinars. At the end of 2021, IASS had reached Webinar number 12 and the EC aims at making it a monthly appointment as this has been a very successful activity that has attracted an audience of up to one hundred attendees. Please, contact Andrea andrea.silva@ibge.gov.br if you have suggestions for topics and/or speakers for the upcoming Webinars.

Writing our **monthly Newsletter** has allowed me to realize how rich the scientific life of survey statisticians is! In the Newsletter we provide news on the life of the IASS, details on Webinars, information on conferences, on the recipients of awards and on call for nominations. Please, feel free to contact me for news and info to be added in the Newsletter by the 15th of each month.

As I am at the beginning of my term, I would like to ask for ideas and suggestions to make my appointment fruitful for the members of the Association.

Maria Giovanna Ranalli

maria.ranalli@unipg.it

IASS Scientific Secretary

News and Announcements

Awards



The Small Area Estimation (SAE) Award Committee selected Prof. Partha Lahiri for the 2020 SAE Award for Outstanding Contribution to Small Area Estimation and Prof. Wayne A. Fuller for the 2021 Award for Outstanding Contribution to Small Area Estimation. Since SAE2020 was cancelled due to the Covid-19 pandemic, both awards were given to the professors in the award ceremony of the SAE2021 conference held virtually from Naples, Italy, during September 20-24, 2021. Congratulations!



Obituary to Jean-Claude Deville

Jean-Claude Deville passed away on November 2021, at the age of 77. A former Inspector General of the French National Institute of Statistics (INSEE), he served as head of the department on statistical methodology. He then arrived at the French National School for Statistics and Information Analysis (ENSAI) in 1998, and stayed there until his retirement in 2010 served as the director of the Laboratory in Survey Statistics in the Center for Research in Economy and Statistics (CREST).



Jean-Claude Deville devoted a large part of his career to statistical research. He made seminal contributions to functional data analysis and factorial analysis. He is also known worldwide for his research in survey sampling, which had a huge impact internationally. His work focused in particular on the theory of calibration

estimators, on the generalized share weight method and on balanced sampling. These techniques are nowadays of routine use in statistical offices. Jean-Claude Deville also co-created the famous cube sampling method.

He was elected a member of the International Statistical Institute in 1979 and was involved in the activities of the International Association of Survey Statisticians, of which he was a member of the Board from 1993 to 1997. He also created the conference known as INSEE Statistical Methodology Days, organized since 1991, in which he made more than 20 contributions.

At the head of the Laboratory in Survey Statistics, Jean-Claude Deville supervised numerous PhDs in the field. In 2018, he received the Waksberg Prize, which recognizes prominent statisticians for their innovative work combining theory and practice in the field of survey methodology.

A brilliant and passionate statistician, Jean-Claude Deville was an extremely curious, attentive, and highly educated man. Those who had the privilege of meeting him and interacting with him know how endearing he was. A tribute will be paid to him on the occasion of the next INSEE Statistical Methodology Days (Paris, March 2022).

Guillaume Chauvet

ENSAI, France

Report on the BNU Summer School on Survey Statistics 2021

The Summer School on Survey Statistics 2021 was the 25st in the series of annual scientific and educational events of the Baltic–Nordic–Ukrainian (BNU) Network on Survey Statistics. The event was fully virtual, open for all interested and free from registration fee. The summer school was bilingual and involved sessions in English and Russian. There were three broad main themes of interest: Data integration, Machine Learning, and Small area estimation. Sharing ideas about trends and challenges in both the field of survey sampling and data science was thus made possible. These features together proved successful: a total of 219 registered attendees is by far the highest figure in the series of our events. The main audience consisted of survey statisticians and students from partner universities and national statistical agencies in the Baltic and Nordic countries and Belarus, Ukraine and Poland. There were also a large number of participants from developed and developing countries elsewhere in Europe and also worldwide. Many of them had never before attended the events of the BNU network.

Widely recognized speakers were invited as the keynote lecturers for the series of sessions in English. In her talk, Shu Yang of North Carolina State University, USA, proposed data integration as a new paradigm for survey statistics and presented a systematic review of data integration techniques for combining probability and non-probability samples and for combining probability and big data samples. Many recent data integration methods were covered, including calibration weighting, inverse probability weighting, mass imputation, and doubly robust methods. Piet Daas of Eindhoven University of Technology and Statistics Netherlands, Netherlands, discussed the results of a study on Machine Learning-based classifications of web sites texts in the identification of innovative platform economy and Artificial Intelligence (AI) companies in the Netherlands. Marcin Szymkowiak of Poznan University of Economics and Business and Statistical Office in Poznan, Poland, reviewed the main applications of current SAE methods in official statistics, including labour market, agriculture and business statistics and poverty mapping, and considered possible new developments of SAE, such as the use of big data sources in domain and small area estimation.

Four experts were invited to give lectures on current topics in survey statistics for the series of sessions in Russian: Tetiana Ianevych and Iryna Rozora, both of Taras Shevchenko National University of Kyiv, Ukraine, Tetiana Manzhos of Kyiv National Economic University, Ukraine, and Olga Vasylyk of National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”. Their lectures covered topics on the main estimation methods for sample surveys, calibration estimation for nonresponse bias reduction, problems in the use of Big Data for sample surveys, and estimation for domains and small areas. In particular, the lecture “Main estimation methods for sample surveys” was devoted to basic estimators widely applied in survey sampling: Horvitz-Thompson estimator, nonlinear estimator, regression estimators. Results from a sample survey using StatVillage (hypothetical village in Canada, 1991) were presented. In the lecture on calibration estimation in the presence of nonresponse, the basic concepts, auxiliary information, linear calibration estimators and some other issues were discussed. In the lecture “Estimation for domains and small areas” the following topics were considered: classifications of SAE methods (direct and

indirect, design-based and model-based, and others), classical and new approaches to estimation, and a brief overview of SAE software. Finally, in the lecture on big data and machine learning (ML) different types of ML models (LASSO, SVM, CART etc.) and their usage for responsive/adaptive designs, data processing, and weighting were considered. Two types of ML techniques: supervised and unsupervised learning were presented and examples of ML tasks in a survey research were given. Students from Belarusian and Ukrainian universities were the target audience of the Russian Days program.

The scientific program also included invited talks from partner organizations of the network and a selection of contributed papers on topics in modern survey and official statistics. Abstracts of the presentations are available in "Proceedings of the Summer School on Survey Statistics 2021 of the BNU Network on Survey Statistics", published by Statistics Lithuania (2021). The publication is freely available via the web site of the BNU network <https://wiki.helsinki.fi/display/bnu/events>.

The summer school was partially funded by the International Association on Survey Statistics (IASS). The support was crucial for organizing the event and made it possible to arrange the lecture sessions in Russian. The event was sponsored by the University of Helsinki, via the organizing and hosting of the virtual Zoom sessions, and the other partner universities and national statistical agencies. Keynote talks and sessions in Russian were recorded and made available to the participants.

The BNU Summer School 2021 was dedicated to the memory of Professor Seppo Laaksonen, who passed away in December 2020. Several generations of students and statisticians have had the opportunity to enjoy his experience and expertise in survey methodology in lectures he has given at the network's numerous educational and scientific events over the years.

Cooperation in education in the field of survey statistics between universities in the Baltic and Nordic countries began in 1992 via the initiative of Professor Gunnar Kulldorff (University of Umeå, Sweden) and has been developed since 1996 as the Baltic-Nordic-Ukrainian Network on Survey Statistics. Today, the network includes partner organizations (universities and national statistical agencies) of eight countries: Belarus, Estonia, Finland, Latvia, Lithuania, Poland, Sweden and Ukraine. More information about the BNU Summer School 2021 and the other activities of the network can be found on the BNU website at <https://wiki.helsinki.fi/display/BNU/> .

Maria Valaste, University of Helsinki, Finland

Natalia Bokun, Belarus State Economic University (BSEU), Belarus

Natallia Bandarenka, School of Business of Belarusian State University, Belarus

Olga Vasylyk, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine

Risto Lehtonen, University of Helsinki, Finland