

# the Survey Statistician

The Newsletter of the International Association of Survey Statisticians

No. 50

July 2004



INTERNATIONAL ASSOCIATION  
OF SURVEY STATISTICIANS



*International Statistical Institute*

INTERNATIONALE  
ASSOCIATION  
D'ENQUETES  
DES STATISTICIENS



*Institut International de Statistique*

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## Editors

**Steven G. Heeringa**

## Section Editors

**John Kovar** — Country Reports

**James Lepkowski** — Software Review

**Anders Christianson** — “Ask the Experts”

## Production Editor

**Gail Arnold**

## Circulation

**Claude Olivier**

**Anne-Marie Vespa-Leyder**

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Secrétariat de l'AISE/IASS  
c/o INSEE-CEFIL  
Att. Mme Claude Olivier  
3, rue de la Cité  
33500 Libourne - FRANCE  
E-mail: [claudes.olivier@insee.fr](mailto:claudes.olivier@insee.fr)

Comments on the contents or suggestions for articles in *The Survey Statistician* should be sent via e-mail to [sheering@isr.umich.edu](mailto:sheering@isr.umich.edu) or mailed to:

Steven Heeringa  
Institute for Social Research  
426 Thompson St., POB 1248  
Ann Arbor, MI 48106-1248 - USA

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# Letter from the President

During the ISI Session in Berlin, 2003, the elected Council members started their mandate. This is the first time that I have the opportunity to greet you as President of the IASS after I took up my duties. I would like to especially thank Mr. Charoy, the previous IASS President, for his commitment to the Association. Special thanks are also due to the Vice-Presidents and the Scientific Secretary as well as all the other Council Members who concluded their term.

The Vice- Presidents elected for 2003-2005 are Beverley Carlson (USA, [bcarlson@eclac.cl](mailto:bcarlson@eclac.cl)) and Alvaro Gonzalez-Villalobos (Argentina, [alvarun@fibertel.com.ar](mailto:alvarun@fibertel.com.ar)) and the Scientific Secretary is Marina Signore (Italy).

The IASS current Council encompasses: Kari Djerf (Finland, [kari.djerf@stat.fi](mailto:kari.djerf@stat.fi)), David Fitch (USA-Guatemala, [dfitch@uvq.edu.gt](mailto:dfitch@uvq.edu.gt)), Lidija Gligorova (Croatia, [lgligor@dzs.hr](mailto:lgligor@dzs.hr)), Huang Langhui (China, [huanglh@stats.gov.cn](mailto:huanglh@stats.gov.cn)), Moshe Sicron (Israel, [sicron@internet-zahav.net](mailto:sicron@internet-zahav.net)), Awa Thiongane (Senegal, [athiongane@uneca.org](mailto:athiongane@uneca.org)). The Council members elected for 2003-2007 are: Pascal Ardilly (France, [pascal.ardilly@insee.fr](mailto:pascal.ardilly@insee.fr)), J-J. Dreesbeke (Belgium, [jjdreesb@ulb.ac.be](mailto:jjdreesb@ulb.ac.be)), Guido Ferrari (Italy, [ferrari@ds.unifi.it](mailto:ferrari@ds.unifi.it)), Linda Hewitt (Trinidad & Tobago, [linhew@trinidad.net](mailto:linhew@trinidad.net)), Naman Keita (Mali, [naman.keita@fao.org](mailto:naman.keita@fao.org)), Hiek Som (Cambodia, [hiek.som@fao.org](mailto:hiek.som@fao.org))

Alain Charraud, Executive Director of IASS, left his functions after the Berlin session. The new Executive Director is Michel Péronnet who manages the CEFIL (Insée) of Libourne where the IASS Secre-

tariat is located. Special thanks to INSEE which, with its strong commitment, permitted the creation of the section in 1973 and continues to host and develop it.

I have decided to start the procedure for the election of the IASS Officers and Council Members. To this purpose, I have appointed Prof. Claudio Quintano ([claudio.quintano@uniparthenope.it](mailto:claudio.quintano@uniparthenope.it)) Chair of the 2005 Election Nominations Committee.

## Local representatives

It is my intention to revitalize and develop the network of IASS Local Representatives. Therefore, I have nominated Mr. Hiek Som ([hiek.som@fao.org](mailto:hiek.som@fao.org)) Coordinator of the IASS Local Representatives network.

As known, the Local Representatives are the relays of the Council in their country. Their main tasks are:

- ◆ Contribute to recruitment of new individual and institutional members with a view to broadening and rejuvenating IASS membership.
- ◆ Update members' addresses in order to keep IASS membership database as current as possible.
- ◆ Draft country reports for The Survey Statistician when outstanding survey activities are carried out in the country.

I believe indeed that the network of Local Representatives is very useful in order to ensure a lively activity of the Association as well as for recruiting new members and for disseminating information concerning the IASS activities.

Please contact Hiek if you are willing to act as a Local Representative or if you have any suggestions in order to improve this activity.

## Ask the experts

At the IASS meeting in Berlin, Anders Christianson

([anders.christianson@telia.com](mailto:anders.christianson@telia.com)) took on the responsibility to revive and give propulsion to the "ask the experts" session. The start of this new task required some efforts and time, but it is now rolling.

The "questions and answers" are published both in the Survey Statistician and in the IASS Web Site. The publication is made in cooperation with Steven Heeringa and Eric Rancourt.

In the January issue of the Survey Statistician, a call for submitting questions was published, and the first responses have already appeared on the IASS Web Site.

It is the intention of the editor to try to cover all the different fields of survey methodology, and in particular issues that are of current special interest. Therefore, with the consensus of Marina Signore (the Scientific Secretary), Anders Christianson has asked the invited papers meetings chairs and short courses lecturers, in Sydney 2005 to provide answers - and even questions. This will also help drawing the members' interest to the IASS sessions and courses, thus creating an interaction between the Newsletter, the Web Site, and the IASS program in Sydney.

I would like to express many thanks and best wishes for his future work to Anders.

#### **IASS Scientific Meetings and Conferences**

Following the request made in Berlin by some IASS members, an IASS meeting for discussing topics concerning survey methodology has been organised during the European Conference on Quality and Methodology in Official Statistics, Mainz, Germany, 24 -26 May, 2004. For further information, please contact Ralf Münnich at the following address: [ralf.muennich@uni-tuebingen.de](mailto:ralf.muennich@uni-tuebingen.de) or visit the webpage <http://publicstatistics.net>. A report of the meeting will be provided in the next issue of the Survey Statistician.

The IAOS/IASS Joint Conference on "Poverty, Social Exclusion and Development: a Statistical Perspective" will be held in Amman, Jordan from 29 November to 1 December 2004. An additional day, on

the same topic, is foreseen for Arab statisticians.

The Conference program includes Keynote Speakers and scientific meetings with invited papers. Meeting leaders have been appointed in order to organise each invited papers session. One meeting per day of contributed papers is foreseen, targeting young statisticians. Further information on the Conference can be found at the following address: <http://www.dos.gov.io>

The IASS Programme Committee for the 55th ISI Session, Sydney 2005 is chaired by Pedro Do Nascimento Silva ([pedrosilva@ibge.gov.br](mailto:pedrosilva@ibge.gov.br)). The topics of the invited paper meetings have been defined and an organiser for each meeting has been nominated. Some meetings are jointly sponsored with other ISI Sections. You may also wish to refer to the official Session website at: <http://www.tourhosts.com.au/isi2005> or to Bulletin I (French and English version): <http://www.tourhosts.com.au/isi2005/ginfo.asp>

I am glad to announce that the IASS is sponsoring the Satellite Conference of the 55<sup>th</sup> ISI Session in honour of Alastair J. Scott. The Conference title is "Complex sampling, retrospective sampling and missing data: A Conference in honour of Alastair J. Scott". The Conference will be held in Auckland, New Zealand, from 13 to 14 April 2005. For further information please contact Chris Wild ([c.wild@auckland.ac.nz](mailto:c.wild@auckland.ac.nz))

The IASS is also sponsoring the "Quatrième Colloque Francophone sur les Sondages," which will be held from 24 to 27 May 2005 in Québec, Canada. This Conference is organised by the Institut de statistique du Québec and the Université Laval with the cooperation of Statistics Canada, the Société de Statistique du Canada (SSC), the Université de Montréal and the Association des statisticiens et statisticiennes du Québec (ASSQ). Additional information can be asked to Benoît Riandey ([riandey@ined.fr](mailto:riandey@ined.fr))

The IASS has accepted a request to sponsor the International Conference on "Methodology of Longitudinal Surveys," which Mr Peter Lynn

([p.lynn@essex.ac.uk](mailto:p.lynn@essex.ac.uk)) is organising at the University of Essex, UK, in July 2006.

### **IASS Short Courses, Sydney 2005**

The IASS Scientific Secretary, Marina Signore ([signore@istat.it](mailto:signore@istat.it)), is organising a very interesting program of Short Courses to be offered just prior to or after the 55<sup>th</sup> ISI Session which will be held in Sydney, Australia, April 5-12, 2005. The detailed program is presented in the section "Report of the IASS Scientific Secretary." However, changes in the program might be possible according to the students' participation. I would like to specially thank Marina for the work performed for the courses' organisation and advertisement.

### **IASS Web Site**

Thanks to the big efforts spent by the new editor Eric Rancourt ([Eric.Rancourt@statcan.ca](mailto:Eric.Rancourt@statcan.ca)), the IASS Web Site has been completely renewed. Great improvements have been achieved, including the organisation and presentation of information, as is evident to every visitor. The content of the Web Site has been reorganised and updated. The site is now completely mirrored in English and French, and a simple solution allowing the user to toggle between the French and English versions has been applied.

Luigi Biggeri, President



### **Report from the Scientific Secretary**

Marina Signore

#### *IASS Short Courses at the 55<sup>th</sup> ISI Session, Sydney 2005*

One of the IASS activities consists of organising Short Courses in connection with the ISI Session. The organisation of the Short Courses for Sydney 2005 started right after the ISI Session in Berlin 2003. During the period September-December 2003, a consultation with the IASS Council, including also the past Scientific Secretaries, took place in order to find a good balance of topics

covering new issues as well as consolidated aspects of survey methodology. Thus, the preliminary program of IASS Short Courses covers the core issues on sampling and estimation theory by offering two well known short courses. Great attention is also given to non sampling errors, in particular to their prevention and treatment. New topics cover methodological aspects of statistical disclosure control and methodologies for the design, estimation and analysis of repeated surveys. Totally, six Short Courses will be offered as described below. However, the program might be changed according to the students' participation.

I would like to thank the IASS Council and the past Scientific Secretaries for their helpful advice and support in organising the Short Courses so far. I am grateful to the high-level lecturers who have agreed to hold the Short Courses and who have contributed useful suggestions and inputs.

Special thanks are also due to the local organisers of the 55<sup>th</sup> ISI Session, in Sydney, for their very efficient support for the necessary local arrangements.

The Short Courses have already been advertised in the past issues of the ISI newsletter and they will be posted soon in the IASS Web Site. Brochures prepared by Istat (the National Statistical Institute of Italy) with the Short Courses Program have been distributed to all the participants in the European Conference on Quality and Methodology in Official Statistics, Q2004, in Mainz, 24-26 May 2004.

Funding assistance for supporting statisticians from developing and transition countries will be provided by international organizations. Further information concerning the U.N. Statistical Division sponsorship can be found at the following address: <http://www.cbs.nl/isi/05session/UNSD.htm>

### **Program**

The International Association of Survey Statisticians has developed a program of short courses to be offered just prior to or after the 55<sup>th</sup> Session of the International Statistical Institute (ISI), which will be held in Sydney, Australia, April 5-12, 2005. The courses are led by international high-level



experts and are addressed to practitioners, researchers and students in statistics and survey methodology

The official language of the courses is English. The courses will be held at the Australian Bureau of Statistics in Sydney.

Venue: Australian Bureau of Statistics  
St. Andrew's House  
Sydney Square  
Sydney NSW 2000

### **Course A: Workshop on Survey Sampling**

Presented by:

Graham Kalton (Westat)  
Steven Heeringa (Survey Research Center,  
University of Michigan).

The workshop will focus on practical aspects of sampling for household surveys. It will start from basic principles and build up to complex stratified multi-stage sample designs. It will cover the main sampling techniques and also such issues as sampling frames, weighting, and imputation. It will end with an introduction to variance estimation with complex sample designs.

**Duration:** 2.5 days

**Dates:** 1 and 2 April 2005 (full days); 3 April 2005 (morning)

### **Course B: Variance Estimation in Complex Surveys**

Presented by:

Wayne Fuller (Iowa State University)  
Kirk Wolter (University of Chicago)  
F. Jay Breidt (Colorado State University)  
Anthony An (SAS Institute)

The purpose of this course is to provide training in variance estimation in complex surveys for survey statisticians, especially those from developing countries. The course will cover methods of estimating variances for statistics such as means, proportions, ratios, regression coefficients, and statistics arising in the analysis of two-way contingency tables. Both linearization and replication methods will be discussed. The use of computer software for computing variances of statistics from complex sample designs will be demonstrated

and instruction will be given in practical applications. About one-half of the course will be devoted to implementation on the computer.

**Duration:** 2 days

**Dates:** 3 April 2005 (afternoon); 4 April 2005 (full day); 5 April 2005 (morning)

### **Course C: Workshop on Editing and Imputation of Survey Data**

Presented by:

John G. Kovar (Statistics Canada)  
Eric Rancourt (Statistics Canada)

Surveys and censuses conducted by national statistical agencies, research institutes and other survey organizations suffer from various degrees of nonresponse even under ideal conditions. In order to try to alleviate the problems caused by nonresponse, editing and imputation methods are usually applied. Since the process of editing and imputation is time and resource intensive, care must be exercised in controlling the efficiency as well as the effectiveness of the methods. The aim of this short course is to introduce the students to methods of prevention, detection and treatment of nonresponse. Evaluation of such methods and their impact on the survey outputs will be highlighted. Existing edit and imputation software will be compared. Numerous examples will be provided to illustrate the material presented.

**Duration:** 1.5 days

**Dates:** 4 April 2005 (full day) and 5 April 2005 (morning)

### **Course D: Introduction to Survey Quality**

Presented by:

Paul Biemer (RTI International and University of North Carolina)  
Lars Lyberg (Statistics Sweden)

The course is designed for a broad audience that includes experienced survey researchers who would benefit from a better understanding of the survey data quality as well as others with little or no prior experience in survey methods. It will provide a brief introduction to survey quality using total survey error paradigm. The course begins

with a discussion of total survey error and its relationship to survey costs. Then the major sources of survey error are discussed, focusing on four major sources: coverage error, nonresponse, data processing error and measurement error. We also discuss some methods that are most often used in practice for evaluating the effects of the source on total survey error.

**Duration:** 2 days

**Dates:** 3 April 2005 (afternoon), 4 April 2005 (full day) and 5 April 2005 (morning)

### Course E: Statistical Disclosure Control

Presented by:

Anco Hundepool (Statistics Netherlands)  
Eric Schulte Nordholt (Statistics Netherlands)  
Peter-Paul de Wolf (Statistics Netherlands)

The purpose of this course is to provide the participants with an understanding of the methodological aspects of statistical disclosure control, to train them in solving problems on this topic and to demonstrate the ARGUS software. The meaning and impact of statistical disclosure control can only be appreciated in the light of practical problems and policy related issues. Therefore, some attention is also paid to such topics without putting heavy emphasis on them. Topics covered include theory and methods on microdata, exercises on microdata, demonstration of Mu-ARGUS, theory and methods on tabular data, exercises on tabular data, demonstration of Tau-ARGUS, legal issues, on-site facilities and remote access.

**Duration:** 2 days

**Dates:** 13 and 14 April 2005 (full days)

### Course F: Design and Analysis of Repeated Surveys

Presented by:

David Steel (University of Wollongong)  
Craig McLaren (Australian Bureau of Statistics)

This course will consider the interaction between the design of a repeated survey and the methods used for estimation and analysis. The choice of rotation pattern will be considered in terms of the impact on the estimation of levels and changes. Composite and other forms of estimators will be reviewed and the interaction between design and estimation explored. Estimation of seasonally adjusted and trend estimates from repeated surveys will also be considered.

**Duration:** 2 days

**Dates:** 13 and 14 April 2005 (full days)

### Registration

Course participants are required to be members of the IASS in good standing. For not IASS members, membership to the IASS is offered together with the participation to a course.

### Deadline

The deadline for registration is **31 December 2004**. For late registration a penalty of 50 € will be added.

Group discount for several participants from the same Institute are available: 10% discount for 5 people and 20% for 10 people.

The registration form will be posted in the IASS web site <http://www.cbs.nl/isi/iass/> and in the Conference web site <http://www.tourhosts.com.au/isi2005/>.

**For early registration, further information and expression of interest, please contact: Marina Signore, IASS Scientific Secretary at the following address: [ISI2005\\_IASS\\_shortcourses@istat.it](mailto:ISI2005_IASS_shortcourses@istat.it).**



### Course Fees

	1 course	2 courses	3 courses
IASS members from Developed Countries or sponsored by a Developed Country	240 €	360 €	420 €
Not IASS members from Developed Countries or sponsored by a Developed Country	260 €	380 €	440 €
IASS members from Developing or Transition Countries	120 €	180 €	210 €
Not IASS members from Developing or Transition Countries	130 €	190 €	220 €

# Country Reports

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## ALGERIA

Nacer-Eddine Hammouda

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The National Labour Institute (INT) conducted a **Survey of Child Labour** in 2003. The survey focused on children aged 10 to 15, not attending school. Forty-eight survey points were visited, uniformly distributed between urban and rural in twelve different wilayas<sup>1</sup> chosen on the basis of a more or less pronounced school non-attendance. At each point, some twenty households with children aged 10 to 15 were interviewed. 40% of these children said they were employed during the reference week. That proportion was significantly different between boys and girls, who stated they were less employed. Age was a second discriminating factor. Children not attending school only work longer after 15 years of age.

The survey brought a number of phenomena to light:

- 1) it is primarily the parents who put their children to work
- 2) illiterates (never enrolled in school) begin working before the age of 10.

On the basis of these first results, the INT commissioned a second study for 2004. This second survey will broaden the field of investigation to all children from 6 to 17 years, including those attending school, and will integrate casual employment.

A strong positive correlation between absence from school and self-employment was identified, using the data from the last census of population and housing of 1998 (which forms the survey frame for both surveys).

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<sup>1</sup>Wilaya: an administrative territorial division

That correlation is all the more important, since it refers to boys 6 to 17 and increases as the level of urbanization declines moving from semi-urban to sparsely-populated areas. The correlation no longer holds true for urban areas. An assumption to be verified during this survey is the impact of the parents' forms of employment on the use of child labour and the relationship with school.

The primary units will be made up of 259 more or less homogenous zones (48 wilayas, 7 levels of urbanization)<sup>1</sup>. These PSUs will be stratified in terms of a number of criteria simultaneously (the average number of children from 6 to 17, rate of school attendance for girls 6 to 17, rate of school attendance for boys 6 to 17, rate of illiteracy for girls 6 to 17, rate of illiteracy for boys 6 to 17, average number of employers or self-employed persons per household), using an automatic classification technique. This will bring out a number of different hypotheses. The distinction between boys and girls has been introduced to take into account the differential (in one direction or the other) that may exist in the areas of school attendance or illiteracy. Since the census did not identify the phenomenon of child labour, this indirect approach will make it possible to target those areas where the probability that the phenomenon exists will be high. A cluster of some 30 households with children aged from 6 to 17 was drawn from each stratum, even though the strata are not identical in size. Illiteracy does not affect more than 5% of children of school age, and the school attendance rate for ages 6 to 14 was 83% in 1998 (80% for girls, 85% for boys). This will allow a comparative analysis to be made.

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<sup>1</sup> Some crossovers are empty; Upper urban, suburban, urban, semi-urban, semi-rural, agglomerated rural, sparsely populated area.



The survey methodology provides for four types of questioning:

- 1) those never enrolled,
- 2) school leavers,
- 3) school attendees, for children declaring themselves employed during the year, even on a casual basis, and
- 4) the use made of time by children who are not attending school but who declare that they are not employed.

For more information, please contact Nacer-Eddine Hammouda  
([nasreddine\\_hammouda@yahoo.fr](mailto:nasreddine_hammouda@yahoo.fr)).

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**AUSTRALIA**  
Geoff Lee

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The Australian Bureau of Statistics (ABS) has developed an **Input Data Warehouse (IDW)** which is aimed at improving data access, management and integration. The IDW is a key enabler of a range of methodological, technological and organisational changes being implemented in the ABS. The IDW is an integrated unit record data store, designed to contain both administrative by-product data and directly collected survey data. Currently the scope is business based (economic) data, but this could be extended in the future to household based (social) data. It services collection activities (such as editing and estimation), as well as analytical needs. It stores the data as captured, and records all changes to the data as it undergoes processing. It provides a rich source of information for supporting evaluation of methodological options for survey design.

The IDW data model is based on a dimensional model (star schema) consisting of a central fact table that holds the observations, which are each linked to dimensional tables that contain metadata about the observations. The star schema supports both near real time updating, and very fast post processing analysis of unit record data (the ABS already has a separate warehouse for aggregate data that are published).

The IDW will help the ABS to improve data integration, and management of unit record data, and the ability to support new analytical products, including a longitudinal database for businesses. Implementing the IDW is expected to result in substantial savings of survey process costs and improved data quality. Version 1 of the IDW contains administrative by-product data from the Australian Taxation Office. This will be supplemented in mid 2004 with the first survey data. Progressively more survey and administrative by-product data will be loaded over the next few years. The IDW will replace the 70-80 separate collection repositories and data files stored across a diverse range of platforms and systems.

For more information on the ABS IDW, please contact the Project Manager, Judy Henson at ([judy.henson@abs.gov.au](mailto:judy.henson@abs.gov.au))

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**CANADA**  
John Kovar

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The use of **Goods and Services Tax (GST) data** in monthly economic surveys is becoming significant at Statistics Canada. The cost and response burden associated with survey activities have always been a major concern at Statistics Canada, and they are especially significant for monthly surveys. The GST is a value-added tax. After processing, GST data are a source of monthly administrative data offering a good alternative to traditional collection methods.

The Canada Customs and Revenue Agency (CCRA) gathers information on the GST from businesses and individuals. Since 1997, the CCRA has shared this information on a monthly basis with Statistics Canada. In the GST database, each unit (or reporter) has a set of transactions. For each transaction, sales and tax paid are reported over a given reference period. Depending on their income, reporters are required to submit their report monthly, quarterly or annually, after a specified lapse of time. Approximately seven weeks after the end of a given reference month, Statistics Canada receives the data,

and at that point, some of the data relating to that month are still missing.

Once the data are received, Statistics Canada processes the GST data file. First, the data are checked and outliers are detected. These, along with the missing data, are then imputed in order to obtain complete data for all the transactions expected. Since these data do not necessarily relate to a calendar month, a calendarization process is carried out to convert the data to a monthly basis, taking seasonality into account. Then, since some quarterly and annual transactions were not expected, part of the data remain missing. These data are extrapolated to provide a complete database for a given calendar month.

An initial feasibility study on the use of GST data in surveys was set up, focusing on the Monthly Restaurants, Caterers and Taverns Survey (MRCTS). The primary objective of the study was to reduce the response burden on small businesses with a simple structure by trying to reduce the number of businesses surveyed. The GST data showed a strong correlation with the MRCTS data, thus offering the potential to reduce the sample size by taking advantage of the auxiliary information available to us. To do this, we could choose between two approaches: reduce the sample and adjust weights by calibration, using the entire population of GST data, or impute the units withdrawn from the sample using the GST data relating to these units. Considering the short lead times for the monthly release of the survey in relation to the time required to obtain GST data in either approach, the use of GST data from the month preceding the survey's reference month proved to be the most appropriate. Particularly in order to minimize changes to current systems, we opted for the second approach in preference to the first. We therefore impute approximately the data withdrawn from the survey (roughly half), employing a simple ratio model that uses, as auxiliary variables, the GST data for the previous month.

This initial study yielded conclusive results, and the approach will be implemented in the spring of 2004 for the MRCTS. A similar study was launched for the Monthly Survey of Manufacturing, and the initial results are so conclusive and the approach will be

implemented in September 2004. The next survey to be studied will be the Monthly Wholesale/Retail Trade Survey.

For more information on this project, contact Marie Brodeur (613-951-3027 or [marie.brodeur@statcan.ca](mailto:marie.brodeur@statcan.ca)), Tax Data Division, or Pierre Lavallée (613-951-2892 or [pierre.lavallee@statcan.ca](mailto:pierre.lavallee@statcan.ca)), Business Survey Methods Division.

The plans for the **2006 Canadian Census** involve many changes to the data collection and processing methodology previously used. The 2006 Census will be the first Canadian Census to be done predominantly by mailing-out questionnaires. The quality of the census results will thus be heavily dependent on the use of the Address Register, derived from telephone and other administrative sources, which will be updated by a Block Canvass operation, just prior to the Census. Completed questionnaires will be mailed back to a central Data Processing Centre where they will be scanned and captured using automated character recognition technology and subjected to automated edits for completeness. Non-response will be followed-up in the field and questionnaires that fail edit will be followed-up from the Data Processing Centre using a Computer Assisted Telephone Interviewing system. Also, for the first time, the public will have the option of responding over the Internet. Some modifications have also been made to the questions asked and to the formatting of the Census questionnaires. In total these all constitute quite radical changes to the procedures used in previous Canadian censuses and so, to fine tune them, a Census Test is being conducted in May 2004 with a sample of 300 000 dwellings grouped in three areas of Canada in order to make sure in practice that these procedures work well individually and together.

For more information related to the Census of Population Test, please contact Jean-Pierre Morin ([morinjp@statcan.ca](mailto:morinjp@statcan.ca)).

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**Italy**  
Claudio Quintano

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The **Structural Business Statistics (SBS)** surveys are conducted by ISTAT in order to comply with European Union SBS Regulation (Council Regulation N 58/97). The surveys collect economic data concerning all the principal variables of the profit-and-loss account and of the balance sheet, the amount of investment, labour force usage as well as other aspects. In particular, there are two SBS surveys.

The SCI survey is a total survey, used to collect data on enterprises with at least 100 employees. More than 9 thousand enterprises are contacted. The survey questionnaire is quite complex and requires information on the complete set of profit-and-loss account and balance sheet data. From the reference year 2000, ISTAT has introduced important innovations concerning the treatment of nonresponse, through the use of data obtained from administrative sources. These data are delivered to ISTAT by Italian Chambers of Commerce and concern the entire profit-and-loss account and balance sheet of the more than 600 thousand limited enterprises. The treatment of total nonresponse has thus been sharply improved and longitudinal comparisons are more effective. The person responsible for the survey is Alessandro Zeli ( [zeli@istat.it](mailto:zeli@istat.it) ).

The PMI survey is a sample survey used to collect data on enterprises with less than 100 employees. More than 120 thousand enterprises are sampled. The survey questionnaire is simpler than the SCI one, since it requires only the profit-and-loss account, investments and labour force usage. From the reference year 2001 the same administrative source used in SCI survey has been adopted for treatment of total nonresponse in the size class of 50-99 employees. The person responsible for the survey is Giampiero Siesto ( [siesto@istat.it](mailto:siesto@istat.it) ).

Starting with the reference year 2000, the scope of the PMI questionnaire has been enlarged. Qualitative information on the behaviour of the enterprises is now also collected. Through this additional

questionnaire, called Multiscopo, ISTAT collects information on ICT usage, R&D activities, innovations, use of external labour, inter-enterprise relations, and a breakdown of turnover by type of customer. This information is used widely in ISTAT's Annual Report. The person responsible for the treatment of the Multiscopo questionnaire is Carlo De Gregorio ( [cadegreg@istat.it](mailto:cadegreg@istat.it) ).

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**LITHUANIA**  
Danutė Krapavickaitė

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Co-operation of the Baltic-Nordic countries in the field of survey sampling theory and methodology has long traditions. It started with the summer school in Tartu, Estonia, 1997 (The Survey Statistician, No. 37), continued with the visits of students, researchers and university teachers to the University of Umeå to use facilities of the rich library of this university for studies and research, and with the Workshops in Jurmala, Latvia in 1998 (The Survey Statistician, No. 39), Palanga, Lithuania in 1999 (The Survey Statistician, No. 41), Pärnu, Estonia in 2000 (The Survey Statistician, No. 43), Jurmala, Latvia in 2001, and the first Baltic-Nordic Conference on Survey Sampling held in Ammarnäs, Sweden in 2002 (Statistics in Transition, 2002, **5**(6); 2003, **6**(1)).

The seventh in a series of annual meetings was a **Workshop on Survey Sampling Theory and Methodology** in Palanga, Lithuania on May 28-June 3, 2003. Palanga is the largest resort of Lithuania by the Baltic Sea. There were 37 participants from Estonia (7), Finland (5), Latvia (9), Lithuania (11), Sweden (4), and United Kingdom (1).

The organizing committee of the workshop consisted of the contact persons of the co-operation group: Gunnar Kulldorff (Sweden), Jānis Lapiņš (Latvia), Imbi Traat (Estonia), Aleksandras Plikusas and Danutė Krapavickaitė (Lithuania).

The program of the workshop concentrated around four topics:

- use of auxiliary information in sample surveys,

- analysis of survey data,
- survey quality, and
- harmonization of official statistics in the EU.

The key topics were analysed during the invited lectures, contributions of the participants, and round-table discussions. The invited lectures were given by

- Prof. Mindaugas Bloznelis: Bias and consistency of jackknife variance estimator in finite populations,
- Dr. Eva Elvers: Survey quality – definitions, assessments and measurements,
- Dr. Danutė Krapavickaitė and Dr. Aleksandras Plikusas: Some estimates of the ratio,
- Dr. Seppo Laaksonen: Methodological approach to harmonization of multi-national surveys,
- Prof. Risto Lehtonen: Analysis of complex survey data,
- Dr. Imbi Traat: Matrix tools for finite population inference, and
- Prof. Jan Wretman: Using auxiliary information in survey sampling.

Almost all participants made contributed presentations on problems related to one of the main topics or their own research. The contributed papers were discussed by other participants. The Workshop was conclude with an excursion to Nida, a UNESCO World Heritage Site of extreme beauty and fragility.

The Workshop, as well as the Baltic-Nordic co-operation in general, was supported by the Swedish Institute and the Umeå University. The additional sponsors of the Workshop were Statistics Lithuania and the Institute of Mathematics and Informatics (Lithuania). Plans are already underway for the next Baltic-Nordic Workshop in 2004.

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## PHILIPPINES

Gervacio G. Selda, Jr.

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The Philippines National Statistics Office (PNSO) has started releasing an **official measure of core inflation in the**

**Philippines.** This indicator is published alongside with the headline inflation rate on a monthly basis starting January 2004. Headline inflation refers to the year-on-year change in overall Consumer Price Index (CPI). On the other hand, core inflation is the rate of change in the headline CPI after excluding selected food and energy items. Headline inflation is often considered to be vulnerable to factors beyond the control of economic policy. Historically, it has the tendency to be volatile because of temporary shocks or disturbances in a particular area of the economy. The concept of “core” or underlying inflation aims to filter out the effects of temporary disturbances or shocks on the CPI. Information about the general or underlying trend in consumer prices is a valuable input to economic policy, particularly monetary policy, which seeks to respond only to long term or permanent movements in prices and aggregate demand. Thus, it provides a better gauge of the overall state of the Philippine economy.

The PNSO measures core inflation by excluding selected volatile items (i.e., rice, corn, fruits and vegetables, LPG, kerosene, oil, gasoline and diesel) in the overall CPI index whose price movements are generally characterized by short-term fluctuations. The mentioned excluded items account for 18.4 percent of the CPI.

This development is in line with the statistical practice of many industrialized and developing counties. The official methodology for computing core inflation also follows the common international practice of excluding food and energy-related components of the CPI. Primer on Core Inflation in portable data format (PDF) can be downloaded at the Philippines National Statistics Office website (<http://www.census.gov.ph>).

Aside from coming up with the official measure of core inflation, the PNSO had also been involved with International Comparison Program (ICP) for Asia and the Pacific. Currently, the office had started the identification process and product specifications of commodities to be included in the program. For more information, contact Administrator Carmelita N. Ericta, Philippine



National Statistics Office, at [C.Ericta@mail.census.gov.ph](mailto:C.Ericta@mail.census.gov.ph).

The Bureau of Agricultural Statistics (BAS) has recently completed the field operation for the “**Census of Fisheries Evaluation Survey (CFES)**”. The survey was undertaken to:

- (i) evaluate and measure the completeness of the fishery portion of the Census of Agriculture and Fisheries (CAF);
- (ii) evaluate the accuracy of selected indicators like fishing gear usage, tonnage, ownership, etc.;
- (iii) and generate information on the usefulness of the census as a frame (and source of auxiliary variables) for future survey of fisheries.

Aside from completing the nationwide field operations, the project has accomplished the following:

- (i) conducted the training-workshop on Statistical Analysis and Report Generation;
- (ii) completed a special training course on Statistical Data Analysis and Data Management in STATA for 2002 CFES;
- (iii) conducted training on Manual Editing/Coding and Data Entry of 2002 CFES; and
- (iv) finished the manual editing and coding of survey returns.

The final report, electronic files and procedural/administrative report of the project are expected to be made available by end of March 2004. For more details, contact: Mr. Romeo S. Recide, Director of BAS at [rsrecide@mozcom.com](mailto:rsrecide@mozcom.com) or <http://www.bas.gov.ph>.

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#### Poland

Janusz Wywiał

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The problem of **estimating the mean in rotation designs** is considered in the Polish Study of the Working Population (BAEL). The surveys are developed by Central Statistical Office. On the basis of empirical experience, some new rotation designs were proposed.

Moreover, analytical formulas for optimum mean estimators in their iterative form were found. Their properties were studied by means of simulation studies on the basis of actual data gathered in previous surveys. Some algorithms were implemented in the SAS system. The studies confirmed that proposed estimators are better than the appropriate classical ones. More details can be explained by J. Wesolowski: [wesolo@mini.pw.edu.pl](mailto:wesolo@mini.pw.edu.pl).

The Second conference on “**Survey Sampling in Economical and Social Research**” was held in Lodz, Poland. It was organised by the Department of Statistics of University of Economics in Katowice, Department of Statistical Methods of University of Lodz. and the Polish Statistical Association. It was a meeting of Polish statisticians who deal with survey sampling. The scope of the conference covered theory and application of survey sampling methods. The topics of the conference were as follows: application of discrimination methods to mean value estimation, survey sampling in auditing problems, small area estimation, survey sampling on more than one occasion, optimisation of sample size in the case of estimation of more than one mean value, prediction of total value, estimation in the case of non-response. The summaries of the conference proceedings are available at the web site of the Department of Statistics: <http://www.ae.katowice.pl>. The next conference will be held on October 11-12, 2004 in Katowice, Poland. More details can be obtained from J. Wywiał: [wywial@ae.katowice.pl](mailto:wywial@ae.katowice.pl).

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#### United Kingdom

Peter Lynn

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The Office for National Statistics has recently published “**Guidelines for Measuring Statistical Quality v 1.0.**” The guidelines provide a checklist of quality measures and indicators for consideration when reporting on the quality of statistical outputs. They replace both the Government Statistical Service Quality Checklist and the draft guidelines, “Quality Measurement and Reporting Framework,” which were the subject of



consultation during 2003. The guidelines focus on quality measurement for survey outputs. Future releases will deal with administrative data and outputs derived from other sources. The guidelines are available at [http://www.statistics.gov.uk/about/consultations/ons\\_consultations/](http://www.statistics.gov.uk/about/consultations/ons_consultations/) or from [quality.measurement@ons.gov.uk](mailto:quality.measurement@ons.gov.uk).

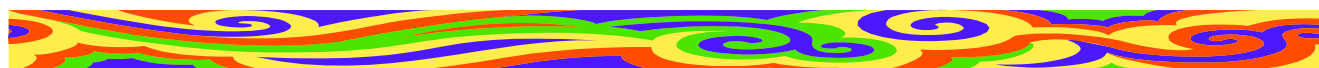
The **National Travel Survey** (NTS) is a household-based survey of travel patterns that has been carried out as a continuous survey since 1988 (and previously as a series of ad hoc surveys between 1965 and 1986). It involves CAPI interviews and a 7-day travel diary kept by each household member. A quality review of the survey in 2000 (report available at [http://www.statistics.gov.uk/methods\\_quality/quality\\_review/transport.asp](http://www.statistics.gov.uk/methods_quality/quality_review/transport.asp)) resulted in a number of changes, most notably a significant increase in the sample size from 5,040 addresses per year to 15,048. A quasi-panel design was also introduced, in order to increase the precision of measures of change. The re-designed survey entered the field in January 2002 and results from 2002 are now available at <http://www.dft.gov.uk/national.travelsurvey@dft.gsi.gov.uk>. A technical report describing the new survey design in detail is also available at the same address.

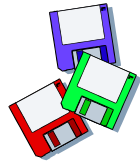
During 2002, a large-scale experiment with respondent incentives was carried out on the NTS. The incentives, a modest cash-equivalent paid conditional upon all household members completing all survey components, significantly improved response rates, by reducing both refusals and partial responses. They also improved the representation of under-represented groups such as large

families and single-parent households. A report on the experiment can be found via [http://www.natcen.ac.uk/natcen/pages/or\\_surveys/methods.htm](http://www.natcen.ac.uk/natcen/pages/or_surveys/methods.htm), or from [g.nicolaas@natcen.ac.uk](mailto:g.nicolaas@natcen.ac.uk).

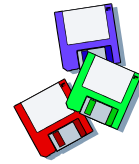
A new development in the UK is the use of **randomised controlled trials** for the evaluation of voluntary labour market programmes. The Department of Work and Pensions launched two such trials in 2003. The first, which started recruiting participants in April 2003, is the Job Retention and Rehabilitation Pilot (JRRP) which is targeted at people in employment who have been off work because of illness or a disability for a period of between 6 weeks and 6 months. Volunteers for the trial are randomly allocated to one of four groups: a health-care group, a workplace intervention group, a combined health and workplace group, or a control group. The trial aims to test whether offering assistance to those off work sick helps them return to work, and, if so, what type of help is most effective.

The second trial is the UK Employment Retention and Advancement (ERA) project which started recruitment in October 2003. This trial is aimed at three low-income groups known to have difficulty retaining a job or advancing to better positions: the long-term unemployed, lone parents on income support, and lone parents working part-time and receiving Working Tax Credit. Participants will be randomised either to receive help and advice from an employment specialist or to a control group. Further information about JRRP can be obtained from Susan Purdon ([s.purdon@natcen.ac.uk](mailto:s.purdon@natcen.ac.uk)) and about ERA from Alan Marsh ([a.marsh@psi.org.uk](mailto:a.marsh@psi.org.uk)).





# SOFTWARE --- REVIEW



Software reviews over the last several years have presented summaries of the features of a number of systems or components of systems that deal directly with survey estimation issues, particularly sampling error and weighting procedures. They have addressed such systems as EpiInfo, Wesvar, SUDAAN, SAS sampling error PROCedures, Stata, IVEware, and software for generalized regression weighting. Some of this software is available for free over the internet, and others require payment of a licensing fee.

We are considering additional reviews, and we would like to get reader advice about

software that has not been reviewed to date, or for updated reviews on some software. We also would like to hear from you about whether there are software systems that address other survey sampling issues that you'd like us to review. Please keep in mind that we review only software that is available for purchase or for free download. We do not review proprietary or other software that our readers cannot purchase or access through a download.

Please send your advice and ideas to Jim Lepkowski, the review editor, at [jimlep@umich.edu](mailto:jimlep@umich.edu).



# ASK THE EXPERTS

Anders Christianson

We are happy to present the first responses to the Ask the Experts column below. The column was introduced in the Survey Statistician January 2004, p 12 as a follow-up to Leslie Kish's column Questions and Answers. Questions posed by members like junior survey statisticians and students are sent for an answer to experts in the particular field they refer to. The names and affiliations of the experts (but not of those who ask the questions) will be published together with their responses under the heading of each question.

The responses will be published on the IASS web site soon after they are completed. You can find them on

<http://www.cbs.nl/isi/iass/>.

Click English or French version, then Ask the Experts. After having read the intro, click Current issues.

We encourage survey statisticians having questions of this kind to send them to us for an expert answer. Please address them to

[anders.christianson@telia.com](mailto:anders.christianson@telia.com)

There are two important differences here as compared to Leslie Kish's previous column:

First, the response will first be published on the web site for as prompt a response as possible.

Second, the questions need not be limited only to statistical inference, sample design and analysis. As you can see from the following responses, they may cover all the different fields of survey methodology and problems encountered in survey practice.



**Q. For autobiographical information, what is the longest reference period one can use in a survey?**

*Nancy Mathiowetz, Associate Professor, Sociology and Urban Studies, University of Wisconsin-Milwaukee*

**A.** Survey research questions concerning behaviors are often dependent upon the retrospective recall ability of respondents. Empirical evidence indicates that the accuracy for temporal information lessens with time; the design tradeoff is often one in which researchers wish to ask about short reference periods so as to reduce response error vs. the need to ask about long reference periods, so as to capture rare events (e.g., hospitalizations; major purchases). Given this, what can survey designers use as guidelines for determining the ideal reference period for capturing accurate autobiographical information? Unfortunately, there is no simple answer to this question, since reference period is but one factor that impacts the quality of data based on retrospective recall. In addition to reference period, questionnaire designers need to consider the distinctiveness of the behavior of interest, the saliency of the behavior, and the nature of the task one is asking the respondent to perform. As the length of the reference period increases, the likelihood of multiple, similar events also increases. Although the occurrence of multiple, similar events may make the task of retrieving information concerning any one event more difficult (lack of distinctiveness), responses to a yes/no or ever/never question may be improved due to the repeated behavior within the reference period. Important or salient events or behaviors tend to be well reported; in part, such events may benefit from more elaborate encoding and more frequent retrieval and reporting of the event (rehearsal).

One of the difficulties facing questionnaire designers is the lack of information concerning the behavior experience of different respondents. The theoretical and empirical literature suggests that simple experience structures are simple to report, even over long periods of time, and that difficult experience structures are quite difficult to report, regardless of the length of the reference period. Hence, questionnaire designers may wish to tailor question sequences, based on questions which sort respondents according to the complexity of his or her behavioral experience.

What are the practical implications for the questionnaire designers with respect to the length of the reference period? Researchers must consider both the characteristics of the behavior or event and the characteristics of the response task. With respect to the characteristics of the behavior, the length of the reference period can vary as a function of the distinctiveness and saliency of the behavior or event of interest. However, one must also consider the nature of the task facing the respondent in making the determination of the reference period. The retrieval of detailed episodic information will most likely require the use of a different reference period than ever/never occurrence questions. For example, the retrieval of detailed dietary information may require the use of a reference period no longer than 24 hours whereas the quality of reports of a purchase of a new automobile may be quite high for reference periods of a year or more. In addition, questionnaire designers can improve the quality of retrospective reports of behavior (regardless of reference period) through the use of multiple cues which take advantage of the way in which memories are organized (including cues which focus on details other than when the event occurred) and by allowing respondents sufficient time to adequately search his or her memory.

For a review of the theoretical and empirical literature related to the effects of the length of reference period, the following volumes provide an excellent review as well as a number of references for additional reading:

S. Sudman, N. Bradburn, and N. Schwarz (1996). *Thinking about Answers: The*

*Application of Cognitive Processes to Survey Methodology* San Francisco: Jossey-Bass. See Chapters 7 and 8.  
Tourangeau, R., Rips, L, and Rasinski, K. (2000) *The Psychology of Survey Response*. Cambridge University Press. See Chapters 3 and 4.



**Q. What purposes can web surveys be used for?**

*Robert D. Tortora, Gallup Europe*

**A.** Web surveys can be used in some cases to make inferences to some populations and in some cases as a qualitative research tool. The design of the web survey is the critical factor. For instance if it is the case that a client can provide a reasonably complete email list of the target population then a web survey is a methodology that can be used to make statistical inferences. Some examples of realistic email lists for web surveys include lists of employees for a employee satisfaction survey and lists of purchasers at a e-commerce website to measure customer loyalty. Another design that can be used for inferential purposes involves two modes of data collection – a Random Digit Dial (RDD) screening survey to identify eligible respondents that are then asked to go to a website to complete the survey. One important part of web surveys that are designed for inferential purposes includes using an access code so respondents can only complete the survey once.

Knowledge Networks

(<http://www.knowledgenetworks.com/>) uses another web survey design. They use a RDD survey to recruit households to join their panel. They provide recruited households with a web device that allows these households to complete web surveys. Their website has various case studies and white papers that discuss the quality of the data collected in their panel.

Harris Interactive has created a large panel of Internet users. This panel is not representative of Internet users. They do this by

conducting parallel surveys, asking their panel members and respondents to an RDD survey the same set of questions. They employ propensity scoring (Rosenbaum and Rubin, 1983) methods to adjust the results of web surveys of their panel members.

Many web surveys involve a non-random selection of respondents. Many are opt-in surveys where the potential for a self-selection bias exists. These surveys may be implemented as "pop up" windows at a web site. In other cases a web site is open for interviewing and potential respondents may receive email invitations or see invitations (with the URL of the website) at various other websites or in other media. In other cases panels of web users can be created and surveyed as the need arises. These types of design provide qualitative data and generally should not be used for inferential purposes.

Reference:

Rosenbaum, P.R. and Rubin, D.B., 1983. "The Central Role of the Propensity Score in Observational Studies for Casual Effects." *Biometrika* 70 (1): 41-55.



**Q. Now, that cell phones are so frequently used: What is the current status of telephone surveys?**

**Editorial note:** *The use of telephone surveys has varied between countries depending on the degree to which households have had access to a telephone in their homes. The progress of the new technology has also progressed differently. We have therefore asked experts from three different parts of the world to respond to this question.*

*Dennis Trewin, Australian Bureau of Statistics*

**A.** An important aspect of all surveys is to have a good sample frame. This has always been problematic with random digit dialling, even more so with the increasing availability of cell phones. For surveys where households are visited more than once (e.g., a monthly labour force survey), area frameworks can be used with the first interview conducted using

face to face interviews. A telephone number can be obtained, perhaps a cell phone, for subsequent interviews. We have found the additional cost associated with the first interview being face to face to be a very worthwhile investment in terms of the improved quality.

For one off surveys, random digit dialling is then a possibility if a telephone framework is not available. This could include cell phone numbers. Of course, "probabilities" would have to be carefully assessed if we include cell phone numbers as it is more likely that households have multiple phones.

I would also caution that all the survey errors and costs be carefully evaluated and compared with the costs of face to face interviewing. The cost of an area frame that is established to support a full range of household surveys, as is often the case for larger survey organisations, can be affordable on a per survey basis as the costs can be amortised over many surveys. It may well be that random digit dialling is a false economy. Certainly in Australia we have not found it an attractive option even though nearly all households have telephones.



*Edith de Leeuw, MethodikA Amsterdam (with thanks to Fred Bronner, Albert Emmering, Ger Snijkers, and André Zijdenbos)*

**A.** The very first telephone surveys were short 10-minute surveys with very simple questions; this was back in 1970. From this simple beginning the telephone survey evolved into a scientific data collection method and became a serious threat to the face-to-face method between 1980-1990. Now in the 21st century, the question is raised if telephone surveys still have a future. Changes in technology and in society are threatening the validity of telephone surveys. The use of answering machines and other screening devices makes it more difficult to contact respondents, the growing telephone SPAM makes it more difficult to convince respondents to cooperate, and the growing number of mobile (cell) phones is a special challenge for coverage and sampling.



At present the number of cell phone-only persons is limited to special groups (e.g., students), who were always difficult to reach in standard consumer research. Most households still have a fixed-line in their main dwelling, and only during weekends and in summer, when people are away does it pay to incorporate cell phones in standard telephone surveys. A good example is the Finish Labour Force survey in the month July. Incorporating cell phones asks an adaptation of the methodology and will increase surveys costs. For instance, a cell phone is personal a fixed line is a household, which has implications for sampling. For business-to-business surveys cell phones are less of a problem.

Telephone surveys still have a future and survey methodologists are working hard to overcome the challenges by adapting old methods and developing new methods. Telephone surveys are necessary because face-to-face surveys are too costly, especially in sparsely populated areas and are only used in special cases where interviewers have to perform extra tasks (e.g., observe behaviour or administer tests as in health surveys). Web surveys are still limited to special groups only. Telephone surveys are flexible and combine the personal extras of interviewers with lower costs. Especially in mixed mode designs, telephone surveys will be indispensable for the coming time. It will be used as major mode in household surveys, but also as a prenotification or reminder in web-surveys of individuals and businesses and in electronic data exchange procedure for establishment surveys. Furthermore, it is an excellent selection or screening tool for internet or access panels.

Recommended reading:

Gad Nathan (2001), Telesurvey methodologies for household surveys-A review and some thoughts for the future. *Survey Methodology*, 27, 1, 7-31



Mike Brick, Westat, USA

**A.** In the United States and Canada researchers use telephones for both sampling households and as a mode for conducting

interviews. The increasing prevalence of cell phones has different but substantial effects on both of these uses that are discussed below.

Since Waksberg (1978) first introduced an efficient and valid probability method for random digit dialing (RDD), all RDD methods sample only landline telephone numbers. Blumberg, Luke, and Cynamon (2004) found that in the first half of 2003 only 3% of U.S. adults lived in households with only cell phones. However, this percentage is likely to grow substantially over time and result in greater noncoverage. A related problem associated with the increased use of cell phones is a recently implemented regulation that allows people to switch from landline service to a cell phone and keep the same telephone number. Although a large number of persons may not choose this option, it could still make RDD sampling even more difficult. Furthermore, with cell phones in over 60% of households already, RDD response rates may already be suffering deleterious effects. If cell phone users in households with landlines primarily use their cell phones, it may be more difficult to contact and interview these persons on their landlines.

The effects of the proliferation of cell phones on the use of the telephone as a mode of data collection are less clear. One possibility is that people may be more available and willing to be interviewed from their cell phones. While cell phones may be perceived by respondents as providing a more convenient or private option, government agencies have concerns about the confidentiality of these interviews because of the ability to intercept these conversations. Since a cell phone interview could be done while the respondent is also doing another activity such as driving a car, the interviewer must pay some attention to the concurrent activities of the respondent beyond what is currently required for interviews over landlines. An ethical issue arises because the person receiving a call on a cell phone is responsible for the charges in the U.S. Cell phone users who do not wish to participate in the survey are still responsible for the cost of calls made by the survey organization to that phone. This issue may be resolved by revisions in the costing structure in the U.S., but until then, alternatives such as monetary incentives may be necessary.

The increase in cell phone usage presents serious challenges to both RDD sampling methods and the use of the telephone as a mode of data collection. Research to address these challenges has begun, but much work and ingenuity are required. One direction of research is the renewed interest in mixed mode data collection. The dynamics of the technological changes in telephony is likely to continue to require frequent modifications in survey methodology.

References:

Blumberg, S., Luke, J., and Cynamon, M. (2004). Has cord-cutting cut into random-digit-dialed health surveys? The prevalence and impact of wireless substitution. *Proceedings of the Eight Conference on Health Survey Research Methods*, Atlanta, GA.

Waksberg, J. (1978). Sampling methods for random digit dialing. *Journal of the American Statistical Association*, 73, 40-46.



**Q. What are the pros and cons of letting users have access to data micro files?**

*Kari Djerf, Statistics Finland*

**A.** It is not very easy to give a short reply to such a broad question because one should consider at least ethical, confidentiality, and usability aspects of the issue.

From the information contents it is quite evident that the basic micro is the only source to investigate all dependencies. Every time the data are aggregated to some higher level, say from enterprises to industries, or individuals/households to some geographical or other domain tables, the researcher will lose some information. Ecological fallacy is a term which describes the aggregation bias: one cannot derive firm conclusions at the basic level when the model was fitted at the aggregated level while the opposite is normally amenable, i.e. conclude at higher levels when basic data were used.

In the context of social surveys it is a tradition to analyse the basic data. Even if there is a

choice whether to use basic data or similar data aggregated to multiway tables the natural choice is in favour of basic data despite the fact one can apply nearly or exactly the same model in analysis. However, in business surveys and studies using, e.g. national accounts data, the situation is slightly different. Early econometric methods were developed to the aggregated data and the modifications to fit micro data appeared much later. It was obvious because enterprise or local unit micro data were not available. But now there are micro data and much of the recent econometric analysis are based on those.

Recently a lot of efforts have been devoted to merging basic data sets with each other and/or administrative and statistical registers by record linkage or statistical matching. The outcome of those data sets provides users (whether statistical agencies or researchers) with much richer data for analysis. But there is a clear drawback: the probability of disclosure will increase.

Ethical, legal and confidentiality issues are the major cons of access to basic data, and they are linked together. The ISI declaration of professional ethics say "Statisticians are frequently furnished with information by the funder or employer who may legitimately require it to be kept confidential. Statistical methods and procedures that have been utilised to produce published data should not, however, be kept confidential." That declaration is to be updated and probably the coming version will contain much clearer ethical guidelines on confidentiality, as do many of the national and international rules.

Many statistical offices can provide researchers with basic data but they set conditions on the use. For example, such that the data are only used for the research purposes (possibly limited by subject and time), researchers are not allowed to try to reveal the informants by any means, the results and publication may be required to be investigated by the data provider, etc. And the basic data sets are many times controlled by the data providers to check that the confidentiality rules fulfilled. Data may also be perturbed, or synthesized, in order to avoid confidentiality violations. But even with those

methods such data sets exist whose disclosure cannot totally be avoided. Especially that is related with very skewed distributions, typical in business data and some other rare events in general.

Currently there is a lot of research on confidentiality control methods which will hopefully give new tools to the data providers. The new data access methods via internet and other electronic networks develop so rapidly that new and strong methods are really needed.

Disclosure control methods have been presented continuously in various conferences and seminars as well as ISI sessions. In the coming ISI session at Sydney there are two invited paper sessions on the issue: "Quantitative methods for balancing data confidentiality and data quality", and "Access to micro data while securing confidentiality protection". The organisers of the sessions will certainly welcome every interested person to participate in either or both of them.



**Q. What is the possible impact of question ordering and of adding questions to the end of a questionnaire?**

*Gary Shapiro, Westat*

**A.** Maurius Cronje provided a very interesting discussion of the effect of questionnaire wording and order in his article in the July 2003 *Survey Statistician* (p. 27-31). Not only can the answer to a question be affected by whether or not some other question precedes it, as discussed in the article, but it can even be affected by whether or not other questions come later in the survey. Shapiro (1987) gave three examples of such an occurrence.

The most dramatic example involved the National Health Interview Survey. This survey is conducted every week by the U. S. Bureau of Census for the National Center for Health Statistics. The survey is conducted face-to-

face by well-trained interviewers who generally work on the survey for several years. Among other things, the survey always asks about acute health conditions noticed by the respondent within the two weeks prior to the week of interview. (An acute health condition is defined as a condition which has lasted less than three months and which has involved either medical attention or restricted activity.) For two years, 1973 and 1974, there were at least 55 additional questions asked about the reported acute health conditions. Table 1 is an abbreviated version of the table provided in the 1987 paper. The table shows that the number of acute conditions per 100 persons declined by 20.3 percent from 1972 to 1973 and increased by 20.7 percent from 1974 to 1975.

**Table 1 Number of Acute Conditions per 100 Persons per Year**

1971	1972	1973	1974	1975
218.5	219.7	175.1	175.7	212.0

The 1987 paper noted that the results were not obtained under controlled experimental conditions, but that it is highly unlikely that health conditions truly changed in 1973 and 1974. It is not possible to determine the cause of the decline in the years when the supplementary questions were asked, but the paper stated that there were two plausible explanations. First, the interviewer did not want to burden him/herself, or to burden the respondent, with more questions and therefore classified some respondents incorrectly. Second, the presence of the long supplement caused interviewers to rush through the questions to complete the interview more quickly, resulting in less complete reporting by respondents.

**References**

Shapiro, G. (1987). Interviewer-Respondent bias resulting from adding supplemental questions. *Journal of Official Statistics*, 3, (2), 155-168.



## Articles

### **A Note on Obtaining Information on Disabled through Population Census and Sample Surveys in the English Speaking Caribbean**

Nittala M. Murthy  
Department of Economics  
University of the West Indies

#### **1. Introduction**

Given the prohibitive cost and time, it is not possible to collect detailed information on population in general and about the subpopulations in particular through periodic population and housing census (henceforth referred to as census). In terms of cost, conducting census is becoming more expensive both in developed and in developing countries even after taking inflation factors into consideration. Thus in the United States, the Census Bureau estimates that there is an increase of 150 percent (in real terms) in census operations between 1960 and 1990. It reports that the average cost of the Census was less than \$10 per housing unit in 1960 (in 1990 constant dollars) and was still only \$11 per housing unit for the 1970 census. The cost went up to \$20 per housing unit in 1985 and further up to \$ 25 in 1990<sup>1</sup>. Similarly, taking the case of Tanzania, a developing country, Kaimu of National Bureau of Statistics indicates that in his country the census cost US \$8 million in 1988 but the estimated expenditure for census operation in August 2002 was US \$ 34.68 million - more than a fourfold increase in a span of about 14 years<sup>2</sup>. Banthia, the Census Commissioner India, another developing country, made similar observations—the expenditure for conducting census in 2001 was projected to be four times over the estimated expenditure for 1991 census<sup>3</sup>.

Specific factors contributed to the increase in successive census operations in these countries.

In the United States, the Bureau of Census notes that response rate to the mailed census questionnaire declined from 78 percent in 1970 to 65 percent in 1990 and this decline has been an important cause of the cost escalation in 1990<sup>4</sup>. Thus, the largest proportion of extra expenditure of census operations in 1990 was to pay the enumerators to follow up with non-responding households<sup>5</sup>.

In Tanzania, reasons for increase in the census operations are not known but Kaimu listed strategies for reducing census costs in 2002<sup>6</sup>. These include such items as establishment of a (permanent) establishment of Geographical Information System (GIS), exclusion of post enumeration survey, reducing the number of enumerators (thus increasing the workload of the retained enumerators) and restricting the number of questions in the census questionnaire<sup>7</sup>.

In India, Banthia attributes such factors as increase in the honorarium paid to the enumerators, cost of buying new material (like LCD projectors, laptop computers and new scanning and ICR technology for processing of raw data) and the introduction of additional items in the census questionnaire to the escalation in the census costs in 2001<sup>8</sup>.

#### **2. Background on collection of data on disabled through census.**

Census had become a vehicle through which information, if superficial, on disabled is gathered in developing countries. Thus, India

<sup>1</sup> U.S. Census Bureau (1994).

<sup>2</sup> Kaimu (2001), p. 2.

<sup>3</sup> Banthia (2001), p. 3.

<sup>4</sup> U.S. Census Bureau (1994), p. 3.

<sup>5</sup> U.S. Census Bureau (2000), p. 2.

<sup>6</sup> Kaimu, op. cit., pp. 3-5.

<sup>7</sup> Kaimu, ibid.

<sup>8</sup> Banthia, op. cit., pp. 4-6.

collected information on disabled (physical and mental) from the inception of Census in 1872 and this collection had been in effect until 1931<sup>9</sup>. Disabled data were again collected in census in 1981. This was largely due to the fact that 1981 also happened to be the international year of the disabled, as proclaimed by the United Nations. Questions on disabled were again left out in 1991 census. However, information on the disabled were collected in India's most recent census in 2001, as noted above<sup>10</sup>. Still in Asia, Hong Kong collected data on the disabilities in 1981, but not in 1991. Nevertheless, authorities thought that it was not appropriate to obtain the disabled data through the population census in 2001<sup>11</sup>. Similarly, Egypt had collected data on this subpopulation through census as far back as in 1907<sup>12</sup>.

Nonetheless, there is an increasing trend to collect prevalence rates of the disability through the census in the world<sup>13</sup>.

Collection of data on sub populations like disabled through census should be looked at in the context of financial constraints noted in an earlier section. In USA, disabled were included in the previous census hence there was no additional financial burden in the subsequent census due to retaining of questions on this subpopulation (the costs were foreseen and were built in the successive census). In India, however, questions on disabled were excluded in 1991 census but inclusion of the same in 2001 census had contributed to the increase of the cost of census operations in 2001<sup>14</sup>. The case of Tanzania is a little ambiguous. The UN database does not provide disability prevalence rates for this country, which implies that no data was gathered on this segment of the population in the 80s or 90s through census or surveys<sup>15</sup>. Mbogoni and Me reported that Tanzania was planning to include a disability question in 2002 census<sup>16</sup>.

<sup>9</sup> Datt (2000).

<sup>10</sup> Ibid.

<sup>11</sup> Government of Hong Kong (2003).

<sup>12</sup> Mbogoni and Me (2002), p. 23.

<sup>13</sup> Mbogoni and Me, *ibid* ; Datt, *op. cit.*

<sup>14</sup> Banthia, *op. cit.*

<sup>15</sup> United Nations.

<sup>16</sup> Mbogoni and Me (2001), p. 54.

However, Kaimu indicated that restricting the number of questions in the census questionnaire to a minimum was one of the strategies adapted by his office to reducing census costs. He cites HIV/AIDS and Agriculture as areas where the questions would be avoided<sup>17</sup>. If the earlier conclusion that no information on the disabled had been collected in the earlier census is correct, it was unlikely that questions on disability were indeed included in the Tanzanian 2002 Census, going by Kaimu's observations.

Nevertheless, census information provides instant bench- mark information on the size of the disabled population in the country. This is especially true of most of the developing countries because not many sample surveys focusing on disabled population are undertaken in these countries during the intercensal period (see below).

### 3. Situation in the Caribbean

Notwithstanding observations made on increasing financial constraints in the census operations worldwide noted above, countries in the English speaking Caribbean have included questions on the disabled in 1990 round for the first time in the history of the census in the region. The statistical body of the Caribbean Community (CARICOM) Secretariat had coordinated the activities of the census in the region. Since the basic questions (based on WHO concept) for identifying the disabled population were similar, we can compare the proportions of the disabled in different countries in the region. Following are the disability prevalence rates for some countries in the 1990 round of the census<sup>18</sup>.

<u>Country</u>	<u>Percentage</u>
Bahamas	1.5
Belize	6.6
Bermuda	7.6
Jamaica	4.8
Saint Vincent & Grenadines	7.2

It is seen that the range of percentages of the population identified as disabled in the

<sup>17</sup> Kaimu, *op. cit.*, pp. 3-5.

<sup>18</sup> Mbogoni and Me (2002).



Caribbean is between 1.5 in Bahamas to 7.6 in Bermuda. These percentages are lower than those in some developed countries. For example, the percentage of the disabled in Canada, a developed neighbor country, is found to be about 16 in 1991 census<sup>19</sup>.

A much wider description used to identify disabled partly explains the higher proportion reported in Canada.

#### **4. Sample surveys during inter-censal period.**

In some developed countries, physical locations of the disabled obtained in census are used as the sampling frame for conducting a more in-depth studies through (sample) surveys during inter-censal period. It appears no such attempt is made to conduct studies exclusively focused on this segment of the population in the Caribbean.

However, some questions on disabled were included in the annual Jamaica Survey of Living Conditions (JSLC) since 2000. The JSLC is conducted as a part of the much wider Labour Force Survey (LFS). The LFS is targeted towards the population of 14 years and over and the household is the sample unit in the survey.

#### **5. Estimation of the size of the disabled in census and sample surveys in Jamaica.**

The size of the disabled population in a country depends on the concept to identify this subpopulation in census and surveys. In Jamaica the following concept was used in the 1991 census<sup>20</sup>.

“...The disability is defined as any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being. Such restriction or lack of ability must be as a result of an impairment. A person has an impairment if he or she has suffered any loss or abnormality of mind or body.” This concept is taken from the World Health Organization (WHO). Since ill health can occur to any member of the population at

any stage or age, this definition has universal application.

However, there is another notion of disabled, based on work, conceptualized by the International Labour Organization (ILO), a sister UN body. At the outset, the ILO concentrates on the labor force and on related issues (like employment) of the population. This has implications for the study of level of disability in the population. First, by its very mandate, ILO is concerned about only a segment of the total population. i.e. working age population, defined in general, as consisting of those who are in the age group of 15-65 years. Second, the concept of the term “disabled” is also different, which is tailored to the situation of the working age population. The concept reads: “...the term disabled person means an individual whose prospects of securing, retaining and advancing in suitable employment are subsequently reduced as a result of a duly recognized physical or mental impairment”<sup>21</sup>. Thus, the estimated size of the disabled population based on this concept automatically eliminates the disabled (child) population of below 15 years, because by definition, this section of the population is not expected to be in the labor force.

Thus the disability prevalence rate estimated on ILO concept is an under-estimate’ from the view point of WHO concept while disabled prevalence rate estimated on WHO concept is an ‘over-estimate’ from the perspective of ILO concept. However, it is to be noted that disabled rate estimated by ILO criterion is a subset of the disabled rate estimated by WHO criterion.

The two data sets based on WHO and ILO concepts are, therefore, not strictly comparable in estimating the size of the disabled population in a country even for the same year because of the differences mentioned above. However, disability prevalence rates estimated based on these two concepts serve two different purposes: The prevalence rate obtained by WHO concept may serve the policy purposes in the health field while the prevalence rate obtained by ILO concept may serve the policy purposes

<sup>19</sup> Neufeldt and Friio (1994), chapter 3.

<sup>20</sup> Statistical Institute of Jamaica (1996).

<sup>21</sup> International Labor Organization (ILO) (1983).

in the employment and related fields of the population.

The ILO concept is being used in official surveys (JSLCs) in Jamaica. The samples in JSLCs are sub samples of labor force surveys. The sample in labor force survey is defined as consisting of population of 14 years and above, a slight deviation from the standard definition noted above. This concept of disabled used in JSLCs is defensible because the parent survey is related to the labor force and employment.

Nevertheless, from the foregoing observations it is clear that some standardization of the concept is required if the sample surveys are to be used to make estimates of the prevalence rates of the disabled population during inter-censal period in Jamaica. This is especially true if the organizing body of both census and sample surveys, is the same (STATIN, the national statistical agency in Jamaica).

## 6. Conclusion.

Periodic census operations are becoming more expensive in both developed and in developing countries. The high non-response rates by the population, the subsequent extra efforts by the Census authorities to collect the missing information in terms of additional manpower needed to collect this missing information, and general increase in the payment to enumerators, etc., are some of the factors contributing to the escalation in the costs of census operations worldwide.

Collection of data on specialized sub-populations like disabled through census should be looked at in the context of per capita increase in the census operations noted above.

Notwithstanding these remarks, it is heartening to note that periodic censuses are used to collect data on disabled population in the English speaking Caribbean since 1990 round of Census. Some effort is also being made in some countries in the region to collect data, especially on the prevalence rates of this subpopulation through surveys during inter-censal period. The present paper made an effort to understand these attempts

in Jamaica. It is suggested that, in order to measure the levels and socio-economic progress of disabled population during inter-censal period through sample surveys, the concept of disability adapted in the surveys should be identical with that adapted in the census.

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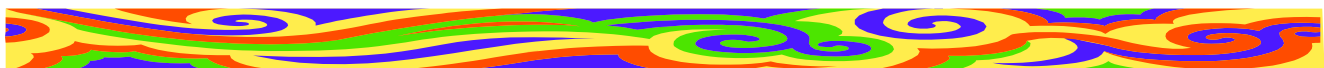
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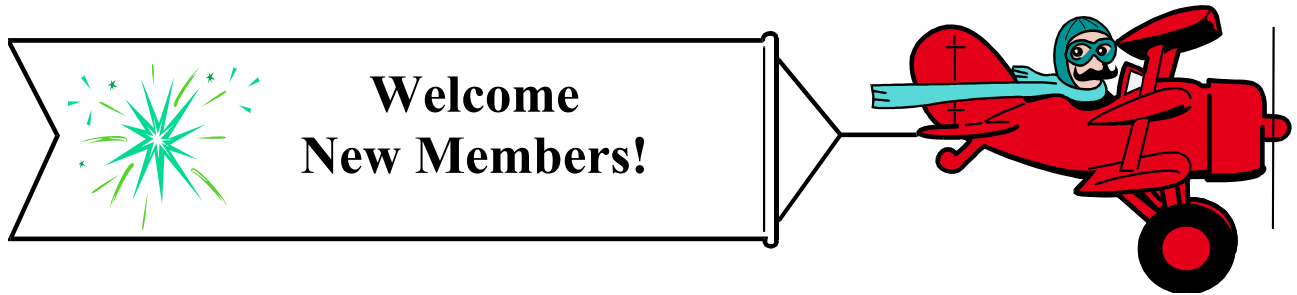
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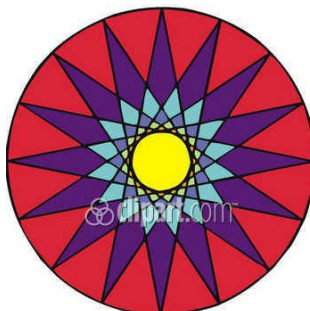




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<b>Executive Secretary:</b>	Anna Maria Vespa-Leyder (France), <a href="mailto:vespa@cepil.fr">vespa@cepil.fr</a>
<b>Secretary:</b>	Claude Olivier (France), <a href="mailto:claudio.olivier@insee.fr">claudio.olivier@insee.fr</a>



# INTERNATIONAL ASSOCIATION OF SURVEY STATISTICIANS

## CHANGE OF ADDRESS FORM



*If your home or business address has changed, please copy, complete, and mail this form to:*

IASS Secretariat  
c/o INSEE-CEFIL  
Att. Ms. Claude Olivier  
3, rue de la Cité  
33500 Libourne – France

Name: Mr./Mrs./Miss/Ms. \_\_\_\_\_ First name: \_\_\_\_\_

E-mail address (please just indicate one): \_\_\_\_\_

*May we list your e-mail address on the IASS web site?*

Yes  No

### Home address

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City: \_\_\_\_\_

State/Province: \_\_\_\_\_ Zip/Postal code: \_\_\_\_\_

Country: \_\_\_\_\_

Telephone number: \_\_\_\_\_

Fax number: \_\_\_\_\_

### Business address

Company: \_\_\_\_\_

Street: \_\_\_\_\_

City: \_\_\_\_\_

State/Province: \_\_\_\_\_ Zip/Postal code: \_\_\_\_\_

Country: \_\_\_\_\_

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Fax number: \_\_\_\_\_

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4 international organizations

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31 bureaus of statistics

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6 universities, research centers, private firms of statistics

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