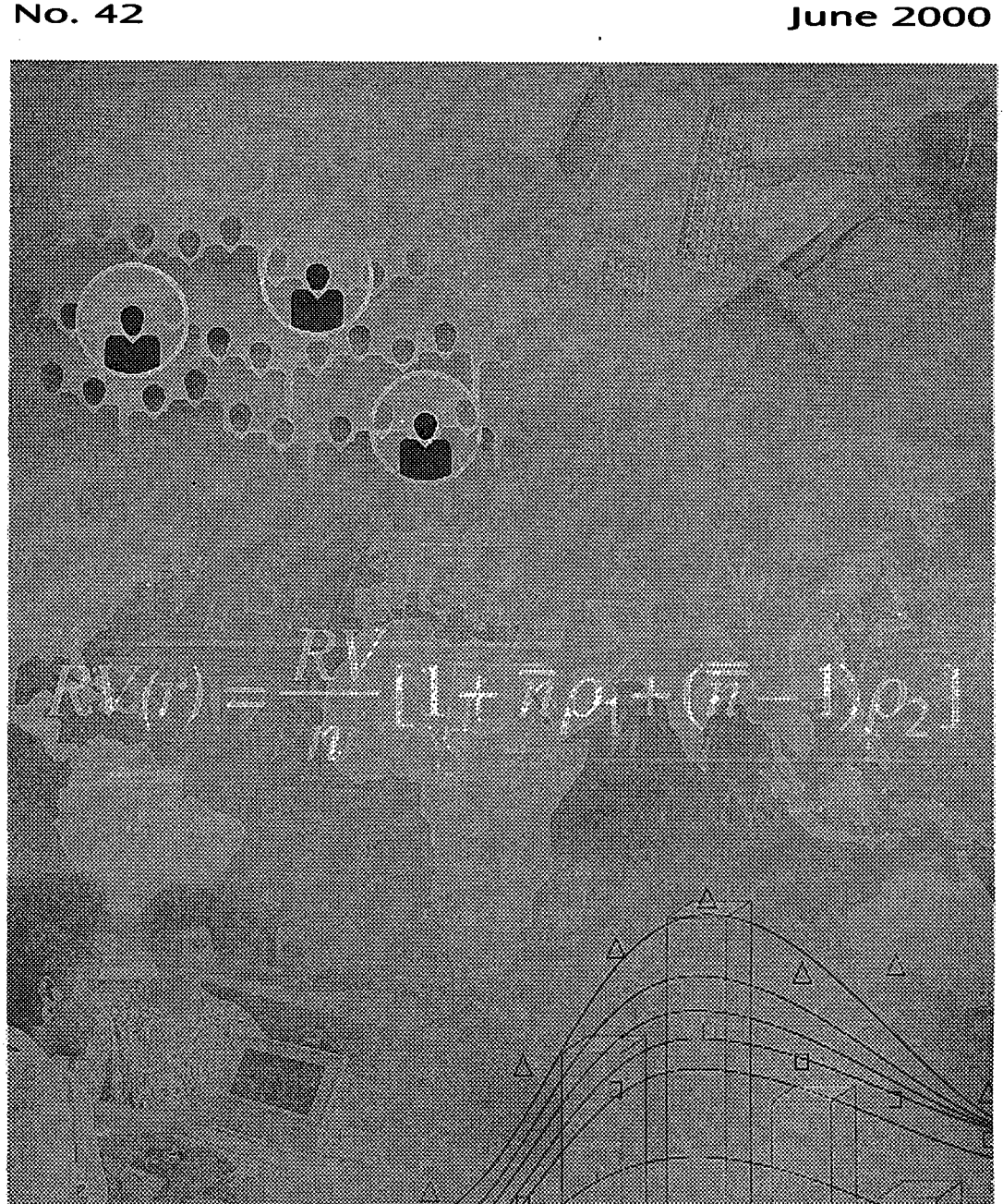
the Survey Statistician

The Newsletter of the International Association of Survey Statisticians

No. 42 June 2000



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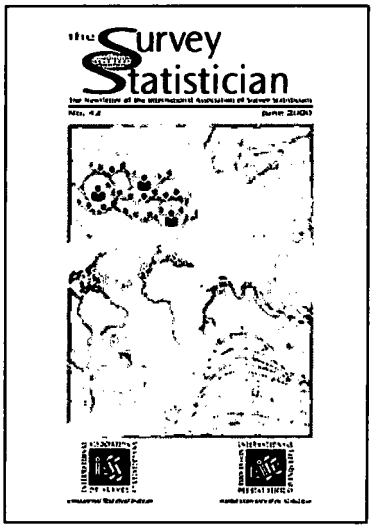

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In This Issue

No. 42, June 2000

Letter from the President

As I write this column, census forms have just been mailed out to over 100 million addresses in the United States. Luckily, I received a short-form that I was able to complete in minutes. About 1-in-6 households received the more extensive long-form.

Census 2000 brings a number of firsts: it is the first fully-automated census in U.S. history, from collecting data to releasing the final results on the Internet; for the first time, it asks respondents to mark one *or more* races; and it may use statistical sampling methods to a greater extent than prior U.S. censuses.

In 1890, it was keypunch cards; in 1950, UNIVAC I, the first civilian-use mainframe electronic computer, made its debut. For 2000, the data capture process will use optical scanners that can read hand-printing to process the millions of questionnaires returned by mail or filled out by enumerators. Scanners, of course, have been used for decades to recognize the marks made on standardized tests. But the marks were restricted to defined ovals or boxes and the markings themselves to standard lead pencils. By contrast, the optical scanners to be used in Census 2000 will recognize and decipher hand-written responses made by pens, as well as pencils.

In the 1990 Census, the form instructed each person to pick only *one* race from the following categories: White, Black or Negro, Indian (Amer.), Eskimo, Aleut, Chinese, Filipino, Hawaiian, Korean, Vietnamese, Japanese, Asian Indian, Samoan, Guamanian, Other Asian or Pacific Islander, Other Race. Following considerable discussion throughout the decade, the Census 2000 form now instructs people to mark *one or more* races from the following categories: White; Black, African Am., or Negro; American Indian or Alaska Native; Asian Indian; Chinese; Filipino; Japanese; Korean; Vietnamese; Native Hawaiian; Guamanian or Chamorro; Samoan; Other Asian; Other Pacific Islander; Some Other Race. Allowing for reporting of multiple races recognizes the growing diversity of the U.S. population. Because persons may mark multiple races, census data can and will be cross-tabulated in a variety of different ways. An interesting, important, and open issue is how the change in the reporting of race will preserve or disrupt historical trends from past surveys and censuses.

Statistical sampling methods have been used in U.S. censuses at least since 1940, when they were used both for designating persons who would receive the long-form and for designating subsets of cases for quality control operations. Sampling has been used in recent censuses to improve the count through special coverage-improvement techniques and through rechecks of vacant housing units. Sampling methods have also been used since 1950 to evaluate the number of persons missed and duplicated in the census. During the past decade, Census 2000 planners proposed expanded uses of sampling, including sampling for followup of households that fail to mail back their forms and sampling for correction of the enumeration for persons missed and duplicated. Their proposals came under a storm of political controversy and legal action. By the launch of census operations in March and April 2000, the plan to followup nonrespondents on a sample basis was abandoned and the method used by prior censuses of following up 100 percent of the nonrespondents was restored. At this writing, census planners still resolve to correct the enumeration on a sample basis for missing and duplicated persons, and to release both corrected and uncorrected population counts. It has been fascinating and a bit alarming to watch our field – survey sampling – come under such scrutiny and criticism.

Now that you know some of the firsts planned for the millennium census in the U.S., let us hear from you. I know many countries are planning censuses in the 2000 period. Send a brief description of

your country's census to the editors of *The Survey Statistician*. We will try to publish your descriptions so that all IASS members can benefit from your successes and challenges. Inside this issue, you will find a special article from the country representative from the Philippines regarding their census and related surveys.

Regarding other IASS business issues, I am pleased to note that President Elect Xavier Charoy and his team have now successfully built a new, modern database of IASS members with up-to-date information on names and addresses. Work is currently in progress to populate the database with information on payment of dues, subscription to reviews, and so on. The accomplishments of Charoy's team should go a long way towards addressing the criticisms of the membership database raised in August by the ISI permanent office.

Our Scientific Secretary, Dan Kasprzyk, is planning an excellent program of five short courses for the 2001 session in Seoul, including Workshop on Survey Sampling, Variance Estimation in Complex Surveys, Introduction to Small Area Estimation, Nonsampling Error Research, and Editing and Imputation of Survey Data. Please see his article elsewhere in this issue for details.

Dan Kasprzyk is also working on an exciting and informative program of conferences for IASS members. IASS will cosponsor the International Conference on Establishment Surveys (June 2000 in Buffalo, New York). Further information may be accessed at www.eia.doe.gov/ices2/index.html. A 2-week summer school course is under development by the IASC and the IASS. A summer school curriculum devoted to the methodological, computational, and application aspects related to the integration of questionnaire design, data collection, and data mining techniques in large surveys will be hosted by the Department of Mathematics and Statistics of Naples, Italy in June 2001. A regional sampling workshop will be held in Amman Jordan. Plans are being developed by Faisal Awartani (Birzeit University, Palestine) in collaboration with the IASS. The IASS-CEFIL workshop on labor force surveys is rescheduled for spring 2001 in Libourne, France. Preliminary discussions have been held with Anders Christianson regarding a proposed regional conference in Stockholm. Finally, regional conferences will take place soon in Rio de Janeiro (July 2000, organized by IASS Council Member Pedro do Silva) and in Brussels (June 2000, organized by Jean-Jacques Droesbeke). I hope many of you will find time to attend and participate in these conference opportunities.

As many of you know, Professor Gad Nathan has been chairing the committee to select papers to be published in the IASS Jubilee Volume. He reports that the committee has reached agreement on the list and is starting work on the preface and other details. This volume is a very exciting new development that I eagerly await.

The strength of the IASS is in its members and depends on your involvement in its activities. Please send your suggestions for the 2003 program to Program Chair Danny Pfeffermann (msdanny@mscc.huji.ac.il), who will be forming his committee this summer. Also, please help us recruit new IASS members and formulate ideas for increasing membership in your country. Send your suggestions for recruiting to IASS Executive Director Benoit Riandey (riandey@ined.fr).

This issue of *The Survey Statistician* is the first produced by our new editors Leyla Mohadjer and Jairo Arrow. I welcome them to the IASS team and look forward to working with them in the years ahead.

Finally, I would take this opportunity to remind members of an important change at the top of our business office. Effective August 1, 2000, Christophe Lefranc (INSEE, Paris) will become the new IASS Executive Director, while Benoit Riandey steps aside and becomes Deputy Executive Director. This issue is the last under Benoit's leadership, and I would like to thank him personally and on behalf of all IASS members for his years of excellent, dedicated service to our association. I am confident we will continue to benefit from access to Benoit's experience and expertise through his new role as Deputy.

Best wishes,

Kirk Wolter
President IASS

ALGERIA

from Hammouda Nacer Eddine

Following the 1989 Survey on Child Mortality/Morbidity, the 1990 National Health Survey, the 1992 Survey on Mothers' and Children's Health and the 1995 Survey on Mid-Decade Goals (MDG 95 or MICS1 – Multiple Indicator Cluster Survey), the Health Department will soon be undertaking the Survey on End of Decade Goals (EDG 2000 or MICS2). The survey will be conducted on 150 clusters of 35 households, distributed into 18 health sectors. For comparability purposes, the surveyed health sectors and the number of clusters per sector will be the same as in 1995. However, the sample districts will not be selected as in previous years. Since the National Office of Statistics carried out a general census of population and housing in 1998, a relatively recent sample frame is available. The automatic classification of the set of districts for each sample health sector is based on 6 criteria: 3 on household environment (water distribution system, wastewater facilities, toilets) and 3 on demography (children from 0 to 5 years of age, children from 6 to 14 years of age and women of child-bearing age). The number of classes is equal to the number of clusters to be selected within a sector. Two districts per class have been selected (the main one and a possible replacement).

For additional information, please e-mail Malika Ardoun at ardoun@onssiege.ons.dz.

CANADA

from Gordon Brackstone

The **Canadian Vehicle Survey** (CVS) is designed to collect information about the usage of motor vehicles registered in Canada. The CVS frame is created from vehicle registration files provided by the Provincial and Territorial Governments. Every quarter a sample of vehicles, which have not been surveyed during the past year, is drawn and each of the drawn vehicles is randomly assigned a cluster of seven days to report on.

Data collection, which started in January 1999, is a mix of Computer Assisted Telephone Interviews (CATI) and mail-out/mail-back questionnaires. The interview is used to verify and obtain various characteristics of the vehicle. A seven-day trip log, specific to each vehicle type, is used to gather detailed vehicle usage patterns. Initial survey results will be published in June 2000.

For more information, contact Adam Wro ski by mail at: Business Surveys Method Division, Statistics Canada, Ottawa, Ontario, K1A 0T6; by e-mail at: wronada@statcan.ca or by telephone at 613-951-1474.

The **Youth in Transition Survey** (YITS) is a longitudinal survey designed to provide information about school-work transitions and factors that influence education and career pathways. The survey content comprises educational and labour market experiences, as well as factors such as family background, achievement, aspirations, and social and academic identification with school, which are expected to influence transitions. YITS has been developed by Statistics Canada in partnership with Human Resources Development Canada.

The current implementation plan of YITS encompasses a separate longitudinal survey for each of two age cohorts, to be surveyed every two years. Data from a cohort entering at age 15 will permit analysis of long-term school-work transition patterns, whereas data from a cohort entering at ages 18-20 will provide immediate information on young adults in the labour market. A national pilot survey for each cohort was conducted in 1999. Data for the first cycle of the 18-20 cohort were collected from January to March 2000. Cycle 1 collection for the 15-year-old cohort will occur from April to June 2000. Data from both cohorts are expected to be available in 2001. Current plans assume five cycles will be conducted for the 15-

year-old cohort and up to three cycles of data will be collected for the 18-20 cohort.

For Cycle 1 of the 15-year-old cohort, YITS has been integrated with the OECD Programme for International Student Assessment (PISA), a new project designed to measure students' skill levels in reading, mathematics and science. The target population of PISA/YITS comprises persons who were born in 1984 and are attending any form of schooling in Canada. The sample design entails two-stage probability sampling, with a stratified sample of 1200 schools selected at the first stage and a sample of eligible students selected within each sampled school. The expected student sample size is 38,000.

The target population for the 18-20 cohort includes persons born in the years 1979 to 1981. Factors such as the high mobility rate of the 18-20 age group and its relatively low incidence at the household level led to a sample design based on the use of the Labour Force Survey sample, comprising about 29,000 currently active and rotate-out households. Within each household, one person in the target population was pre-selected for YITS and was traced, if necessary, during data collection. The data for this cohort were collected by computer-assisted telephone interview.

For more information, contact Marc Lachance (613-951-2902, e-mail: marc.lachance@statcan.ca), Special Surveys Division or Johanne Denis (613-951-0402, e-mail: johanne.denis@statcan.ca), Social Survey Methods Division, Statistics Canada, Ottawa, Ontario K1A 0T6.

Following many years of research, **composite estimation for the Labour Force Survey** (LFS) was implemented in January 2000. Estimates published by the LFS now take advantage of the sample overlap that exists due to the six-month rotation pattern used by the survey. The labour force data series under composite estimation exhibit more stability than the previous series, especially for month to month change. LFS data series have been revised back to 1976 using the new approach. The revision of the series incorporated other changes as well: population control totals used to benchmark the LFS are now based on the 1996 Census instead of the 1991 Census, and new control totals have been added to adjust sample weights to reflect the number of households and economic families of various sizes in the population. The latter change harmonizes the LFS with other surveys conducted by Statistics Canada.

For further information on the Labour Force Survey, please contact Eric Rancourt, Household Survey Methods Division, Statistics Canada, Ottawa, Ontario, K1A 0T6. Tel (613) 951-5046. E-mail: rancour@statcan.ca.

CHINA

from Chen Xiaojie

Nation-wide sample surveys have made great progress in China in 1999.

In order to get more detailed information on urban households, to evaluate survey bias in the regular survey, to provide a sampling frame for sample rotation, and to enable research on household consumption, the National Bureau of Statistics (NBS) conducted an urban household survey in 226 sampled cities of varying sizes. The multistage survey covered 170,000 households and measured more than 200 indicators on the topics of income, consumption, family business, welfare, education, housing, and the main durable goods possessed and in demand.

In the rural areas a multipurpose survey with sample rotation has produced satisfactory results. The sampling method used combines simple random sampling, stratified random sampling, symmetric equidistance random sampling with three phases and three stages. A total of 30,900 villages, and 68,090 households, were selected. Among these, 5,100 villages and 50,400 households were involved in the pigs survey, 3,800 villages and 37,500 households in the cow and sheep survey, 5,200 villages and 52,000 households in the poultry survey, 19,888 villages in the grain survey, and 1,200 villages and 9,300 fields in the cotton survey.

For more information on these topics please contact Xiaojie Chen at chenxj@stats.gov.cn.

ITALY

from Claudio Quintano

Several methodological innovations are taking place in the surveys of Italy's Instituto Centrale di Statistica (Istat).

In the **Household Budget Survey**, a minimum basket definition is being developed as a basis for an absolute poverty line. The basket represents the set of goods and services considered essential for a household and is made up of a food and drink component, a housing component and a component related to the depreciation quotas for the main durable goods. Such components don't complete the picture of individual and household needs (health, education, transport and clothing expenses are excluded). Expenditure on health and education was not included in the basket in the (strong) hypothesis that, for poor households, such expenses are to be paid by local or central government structures. As for the remaining items, very complex and hard to calculate items, a lump-sum was defined (residual expenditure). The total of the three components and the residual expenditure, in particular their monetary definition, is a "standard" reference expenditure on consumption that guarantees an adequate nourishment, a decent dwelling and the fulfilment of other main needs of Italian households - in other words, a modest but sufficient "standard" of living is to be assured in order to avoid any kind of social exclusion.

The **Labour Force Survey** is undergoing a significant redesign. European National Institutes of Statistics are required to carry out their labour force surveys according to specific methodological and information rules defined by the European Regulation 577/98. For example, National Institutes of Statistics must collect labour force data weekly (continuous surveys). Because of Regulation 577/98, Istat has to redesign its current labour force survey. Therefore it has developed a new organisational approach for the future labour force survey. An experimental design has been planned in order to verify the feasibility of the new approach and to measure the effects on estimates caused by the methodological and information changes being considered for the future survey.

In the **Multipurpose System of Social Surveys** initiatives to sensitize respondents and expand training are underway. A new approach to gaining the cooperation of respondents has been developed with the aim of reassuring and motivating contacted individuals. Advance letters and free toll telephone numbers are the main instruments used to sensitize and convince selected individuals to cooperate. The traditional approach to training concentrated on interviewers. Recently, training has been expanded to cover others involved in survey operations: training of training personnel themselves, motivation of intermediate personnel for field work (local officers, regional Istat personnel, etc.). Overall, a more careful training activity has been carried out. In particular, for CATI surveys this activity lasts throughout the data collection period, and includes repeated debriefings and discussion groups that integrate and continuously refresh the initial training of interviewers.

Both for PAPI and CATI surveys a **daily monitoring system of field work** has been developed, through a predefined set of indicators, collected daily and checked to verify the behaviour of people involved (interviewers, coordinators, local responsibles, coders, etc.) and the performance of data collection process (non response, refusals, interruptions, etc.). For CATI surveys, a centralised and automated system has already been defined, after several editions of the two surveys involved (on tourism and on citizens' safety). For PAPI surveys, spread all over the country and based on local authorities for data collection, a system of daily monitoring is being tested using Intranet technologies and increasing cooperation with regional Istat offices. This allows us to keep field work processes under control and to intervene immediately when a problem arises.

In the year 2000 a new **survey on leisure time and culture** will be conducted. It will analyse in depth the relationship between citizens and new technologies.

For the **Intermediate Industry Census,** after a first phase survey was completed to define the universe of enterprises, a second phase, or "long form" survey, has been carried out to collect structural information on the enterprises. ASIA archive (permanent archive of enterprises) has been used as the frame, and sample units have been selected for each industrial district in order to obtain significant information at least for the main

productive segment in each district. Mixed modes of collection have been used to reach units (post, telephone, visit by interviewer). Only one questionnaire has been used both for industrial and service enterprises, and questionnaires have been personalised including identification data for each contacted enterprise. Daily monitoring has been adopted during field work using web technologies.

For further information please contact: L. L. Sabbadini, Servizio Struttura e Dinamica Sociale SDS, ISTAT, Via Ravà 150, 00142 Roma, tel. ++39 06 59524606, e-mail sabbadin@istat.it.

PHILIPPINES

from Gervacio G. Selda, Jr.

Note: For a description of a wide range of surveys underway in the Philippines, please see the separate article in this edition.

The Statistical Survey Review and Clearance System (SSRCS) has been implemented since 1988 by the National Statistical Coordination Board, the highest policy-making and coordinating body on statistical matters in the Philippines. The system primarily aims to ensure the reliability, comparability and accuracy of data generated from censuses and surveys. Its specific objectives are: (1) to ensure sound design; (2) to minimize response burden; (3) to effect economy in statistical data collection; (4) to eliminate unnecessary duplication of data collection; and (5) to achieve better coordination. The system involves the process of evaluating the technical aspects of statistical surveys or censuses sponsored and/or to be conducted by government agencies at the national and sub-national levels. The aspects of the survey/census reviewed include: (1) the need for the survey/census; (2) possible duplication with existing surveys; (3) sampling design; (4) forms content and table formats; (5) operational plan; and (6) outputs. A Technical Committee on Survey Design, which was created by the NSCB consisting of professionals with expertise on survey design, provides technical advice to the NSCB technical staff in the review of surveys/censuses. Statistical surveys or censuses that pass the clearance system are assigned a clearance number with an expiry date. These are printed on the upper right hand corner of the first page of the questionnaire.

The Manila Group Meeting is being organized by the NSCB to provide the Asia-Pacific regional forum on environmental accounting. It is patterned after the successful London Group on Environmental Accounting which was created in 1993 to serve as the forum for practitioners to share their experiences in the development and implementation of the environmental accounts as satellite account of the system of national accounts. In the Manila Group forum, discussion meetings will be conducted to facilitate and enhance learning and sharing of the concepts, processes and procedures of environmental accounting using the United Nations System of Integrated Economic and Environmental Accounting (SEEA). The formal creation of the Manila Group will take place in the Philippines in September 2000. At the same time, the Workshop on the SEEA 2000 will be conducted. In this workshop, the revised Integrated Environmental and Economic Accounting system drafted by the London Group will be presented to solicit comments and suggestions prior to its joint publication by the United Nations, the World Bank, the Organisation for Economic Co-operation and Development, and the European Union.

The three-day First Technical Meeting of the ASEAN Working Group on Foreign Direct Investments Data Reporting and Collection will be held in May 2000 and hosted by the Philippine Government. The meeting will serve as a forum for the exchange of experiences on the compilation of foreign direct investments (FDI) statistics among the ASEAN countries. Specifically, the meeting aims to: (1) identify specific approaches for resolving data collection problems arising from different FDI data system and measurement in use among the ASEAN countries and moving towards convergence; (2) discuss a minimum set of comparable FDI statistics; and (3) develop a common methodology that could be used as benchmark for guiding the future work of the Task Force on FDI Data Collection and Reporting in ASEAN. The meeting will feature papers dwelling on conceptual, concrete and practical issues on the collection, analysis and reporting of FDI data. The papers will be presented by representatives of some member countries in the ASEAN region.

For more details on the NSCB activities, contact Dr. Romulo A. Virola, Secretary General, National Statistical Coordination Board, 104 Sen. Puyat Avenue, Makati City, Philippines. Fax: 632-896-

1778, tel.: 632-890-9397, or e-mail at info@nscb.gov.ph.

POLAND

from Janusz Wywial

The report on the main survey sampling research in Poland: In Poland, it is mainly the Central Statistical Office (http://www.stat.gov.pl) that carries out repeated sample surveys of business units. Business units are divided into three sub-populations according to size: small firms employing no more than five persons; middle size manufacturing firms employing between 6 and 50 people, and large manufacturing companies which employ more than 50 people. As well, non-manufacturing (e.g. commercial or service) firms may be distinguished: the middle size ones employing from 6 to 20 people, as well as the large ones with over 20 employees.

Basic data on firms may be found in the Register of Economic Activities (REGON). In this register information such as the name of the firm, its address, number of workers, legal status, type of activity according to EKD (Polish version of NACE - Nomenclature Générale des Activités Économiques dans les Communautés Européennes) can be found. All medium size and large firms deliver full reports on their own activities to the Statistical Office. That is to say, in this case the statistical survey is a census. Data on small businesses are obtained through random sampling. Samples are drawn from the stratified population of small businesses, where the strata are created on the basis of both NACE and Poland's administrative division into 16 voivodeships (provinces). The sizes of the samples drawn from various strata are fixed proportionately to the numbers of small businesses in particular strata. The data are collected by means of a suitable questionnaire. If this questionnaire is not answered, a copy is sent again. Finally, if the second questionnaire is not answered, an enumerator is sent to the firm.

Agricultural research is conducted in a similar way. All farms are in the Farm Register which contains such information as the address, number of employees, area of the farm etc. All farms larger than 50 hectares are sampled. The method of sampling depends on the type and purpose of the statistical research. Usually this is a simple stratified sample. The main stratifying variable is the acreage of the farm. The proportional and the optimum variants of determining sample sizes by stratum are taken into consideration.

Among the main socio-economic surveys are those on household budgets. Individual families are the units of observation for this survey, but households are the sampling units. A two-stage scheme of drawing from the strata of households is used. The population is divided into 16 strata, which are equal to the voivodeships. So called local research centres - areas covering at least 250 households - form primary sample units. Households are the secondary sampling units. Primary sampling units are drawn with probabilities proportional to the number of households covered by each local research centre. Within selected research centres, the numbers of households are updated. Finally, individual households are drawn. The selected secondary sample units are enumerated on a rotation basis. The data are collected by enumerators.

More details about the sampling design can be explained by Cz. Bracha or B. Lednicki (e-mail: ZBSE@stat.gov.pl). Some review on databases especially useful in small area statistics inference can be found in the paper by J. Paradysz (e-mail: paradysz@novci1.ae.poznan.pl): "Small Area Statistics in Poland – First Experiences and Application Possibilities". Statistics in Transition vol. 3, 5, 1998. Some Polish socio-economic surveys are based on the master sample. The problem of construction of this sample is considered by J. Kordos (e-mail: J.Kordos@stat.gov.pl).

The data on firms, farms and households which have been collected as described above are sent to the Statistical Office and processed there. Later, some of the studies are published in statistical yearbooks, some of a general type and others concerning specific sections of the country's economy. Selected basic indicators which characterize the country's social and economic life may also be found under the following address: http//www.stat.gov.pl. Special studies on firms are conducted by the Statistical Office on demand. Similarly, on demand, it may draw a sample using the above sampling frame, according to a specified sampling scheme.

The services of the Statistical Office are used by private institutions and firms specialising in survey

sampling. Among these are market research firms and Gallup poll firms. The most important ones are PENTOR (http://www.pentorcom.pl), Public Opinion Polling Centre (O rodek Badania Opinii Publicznej; http://www.obop.com.pl), The Centre of Public Opinion Polls (Centrum Badania Opinii Publicznej; http://www.cbos.com.pl). The above mentioned firms do have, of course, their own databases and sampling systems. These firms carry out studies on, for example, the popularity of politicians or political parties, people's attitudes towards certain facts like the start of the educational reform, the popularity of television channels, and market research (especially the demand for banking services).

For more information, please contact Janusz Wywial, Department of Statistics, University of Economics, Bogucicka 14, 40-226 Katowice, Poland or by e-mail at wywial@ae.katowice.pl

SPAIN

from Rosa Mª . Bermúdez

In Spain, a **continuous population Register** has been implemented, based on information from the 8.090 Spanish municipal registers. The National Institute of Statistics (INE) coordinates and manages this continuous Register.

The collection of information on two million agricultural holdings for the **1999 Agricultural Census** is now finished. Seven thousand people have worked on this operation in collaboration with 3000 municipalities.

To produce **Tourism Statistics**, the Survey on Hotel Occupation measures hotel prices according to the type of clients, the tourist flows between the regions of Spain and the prospects of the sector's enterprises. The Survey has extended its coverage to all collective tourism accommodations including apartments, camp sites and rural tourism.

The new methodology for the Spanish National Accounts (Annual and Quarterly) and Regional Accounts has been implemented.

In the **Continuous Family Budget Survey** an annual longitudinal sample has been created to facilitate analyses over time. The **Fertility Survey** provides information on fertility and on how it is influenced by the level of education, occupational activity and other variables. For the first time, the INE has carried out with private capital a **Survey on Disabilities, Impairments and Health Condition**.

To enable **Research on population ageing** at the request of the Ministry of Economy and Social Security, four different scenarios have been projected to study the evolution of the Spanish population until 2050.

The new **National Classification of Education** represents the first harmonized classification system for level of education. It will facilitate the uniform treatment of information.

Implementation of new technologies: Following the creation of Centralized Statistical Collection Units within INE, the traditional serial working method according to which a new stage was only started when the previous one was finished, has been replaced by innovative parallel procedures.

Data quality was increased, less inconvenience was caused to respondents, data were released sooner (for the Industrial Survey, after 10 months instead of 18) and important budgetary cuts became possible. Laptop computers have also been introduced, thanks to which errors decreased and statistical privacy was enhanced, for example in the case of Fertility Surveys.

A new dissemination policy has been launched to reinforce electronic publications and dissemination on Internet. The INE server is one of the most consulted by Spanish institutions and enterprises, with 5 million consultations in 1999.

For any further information, please contact Rosa Mª Bermúdez, Instituto Nacional de Estadística Paseo de la Castellana 183, 28046 Madrid Spain, e-mail: rbermudez@ine.es.

SYRIA

from Ibrahim Ali

The statistical activities of the Central Bureau of Statistics utilize well-developed methodology that aims to maintain full coverage and up-to-date information.

The annual statistical abstract covers all aspects of the developmental, economic, and social fields.

The information included in this publication meets the needs of the statistical bodies in related ministries as well as researchers and other concerned agencies. Foreign Trade Statistics is another important publication that is issued annually by the Bureau in both Arabic and English. Besides providing consultancy, the Bureau works to develop sources and methods of collecting current statistics and processing them in a timely manner. The program is developed at the national level and the data provided cover various sectors in response to the needs of Government policies and priorities.

Training, both abroad and on the job, has been given special priority. The use of computers and statistical packages for survey design and analysis in all Central Directorates, and in some of the Statistical Directorates in the Governorates, is maintained. In addition, the Bureau continues to benefit from technical cooperation projects with UN Organizations such as UNDP and UNFPA, with the EC, as well as with regional and Arab organizations.

Within the framework of the Bureau's Plan, various field surveys are implemented, some annually and others on an irregular basis. The surveys are conducted by the appropriate sectoral Directorate of the Bureau in cooperation with some line Ministries and International Organizations.

Surveys implemented on a regular basis: the Sample Survey of Completed and Licensed Building; the Index Number Survey of Residential Building; the Average Wages, Working Days and Actual Work Hours Sample Survey; the Public Cars Sample Survey; the Production and Yield of Wheat, Barley, Lentils and Chick Peas Sample Survey in cooperation with the Ministry of Agriculture and Agrarian Reforms and the General Union of Rural Workers; the Industrial Establishment Survey of the Private Sector in cooperation with the Chamber of Industry; and the Index Number of Wholesale and Retail Prices Survey, a monthly survey carried out on a national as well as a regional basis.

Surveys not implemented on a regular basis: the Integrated Demographic Survey in cooperation with the State Planning Commission and UNFPA 1999; the Internal Migration Survey in cooperation with Fafo, Institutè for Applied Social Science in Oslo, Norway and University of Damascus, Faculty of Commerce, 1999; the Cotton Sample Survey; and the Survey on the Demand for Labor in the Agricultural Sector.

For more information, please contact Dr. Ibrahim Ali, Director of Central Bureau of Statistics, Syrian Arab Republic, Central Bureau of Statistics, Damascus or by FAX at 963-11-3322292.

UNITED STATES

from Ron Fecso

The Division of Science Resources Studies (SRS) fulfills the legislative mandate of the U.S. National Science Foundation Act to...

> *provide a central clearinghouse for the collection, interpretation, and analysis of data on scientific and engineering resources, and to provide a source of information for policy formulation by other agencies of the Federal Government. . .*

To carry out this mandate, SRS designs, supports, and directs about 14 periodic surveys as well as a variety of other data collections and research projects. These surveys yield the materials for SRS staff to compile, analyze, and disseminate quantitative information about domestic and international resources devoted to science, engineering, and technology. Each year SRS produces about 30 publications, which can be roughly divided into the following categories:

- *Detailed Statistical Tables reports containing an extensive collection of tabulated data from each of SRS's surveys;*
- *Data Briefs and Issue Briefs highlighting results from recent surveys and analyses;*
- *Periodic "overview" reports, such as Science and Engineering Indicators or National Patterns of R&D Resources;*
- *Periodic reports on focused topics such as Women, Minorities, and Persons With Disabilities in Science and Engineering and International Science and Technology Data Update; and*
- *Special reports, such as Undergraduate Origins of Recent Science and Engineering Doctorate Recipients and International Resources for Science and Technology.*

Some recent releases include:

Federal Academic Science and Engineering Obligations Up More Than 6 Percent in FY 1998 (NSF 00-312): This Data Brief presents Federal academic science and engineering obligations data from 19 agencies participating in the FY 1998 Survey of Federal Science and Engineering Support to Universities, Colleges and Nonprofit Institutions. In this annual survey, data are collected on Federal S&E support by funding agency, type of institution, institutional ranking, and geographic distribution. (March 10, 2000)

Science and Engineering Degrees: 1966-97 (NSF 00-310): This publication provides trend data on bachelor's, master's and doctorate degrees from 1966 to 1997 for many detailed science and engineering fields. The bachelor's and master's degree data were obtained from universe institution surveys of the National Center for Education Statistics (NCES), U.S. Department of Education. Data on doctorates are from the Survey of Earned Doctorates, a universe survey of individual doctorate recipients, sponsored by the National Science Foundation (NSF) and four other Federal agencies. Estimates of population in the various age categories are based on data that were collected and published by the Bureau of the Census, U.S. Department of Commerce. (March 10, 2000)

Characteristics of Doctoral Scientists and Engineers in the United States: 1997 (NSF 00-308): This report provides information on the number of scientists and engineers by demographic characteristics such as citizenship, place of birth, field of degree, and employment-related characteristics such as occupation, sector of employment, median salary, and various labor force rates from the 1997 Survey of Doctorate Recipients. (January 21, 2000)

Graduate Enrollment in Science and Engineering Continued to Decline in 1998 (NSF 00-307): This data brief presents information on trends in enrollment of science and engineering graduate students through 1998. Data are presented on trends in number of graduate students by sex, race/ethnicity, citizenship and field. (December 17, 1999)

Science and Engineering Doctorate Awards: 1998 (NSF 00-304): These tables profile the characteristics of science and engineering research doctorate recipients from U.S. universities, including post-graduation plans. For non-U.S. citizens, it shows the percent planning to stay in the United States after earning the doctorate. (November 15, 1999)

National Patterns of Research and Development Resources 1999: Data Update (NSF 00-306): The Division of Science Resources Studies (SRS) of the National Science Foundation publishes the biennial report, National Patterns of R&D Resources. This report describes and analyzes current patterns of research and development in the United States, in relation to the historical record and the reported R&D levels of other industrialized countries. For years in which the full report is not produced, current, annual statistics on national and international R&D trends are released in data updates like this one. (November 15, 1999)

These and other reports and information related to the associated surveys can be found at http://www.nsf.gov/sbe/srs/stats.htm.

VIETNAM

from Nguyen Quoc Anh

Preliminary results of sample tabulation of the 1999 Population and Housing Census: Preliminary results from the 3% sample tabulation of the population and housing census, conducted on April 1, 1999, are now available. Compared to the previous Census in 1989, the content of the 1999 Census was more extensive to meet the growing demand for population and housing data. To satisfy this demand, while controlling response burden and staying within budget, the 1999 Census combined complete enumeration with a sample enumeration of 3.1% of the enumeration areas (EA). Besides the main information collected from all households and persons, data on fertility and mortality were gathered only from the sample EAs (comprising about 2.4 million people). This sample is designed to be representative at the provincial level.

According to the preliminary results, as of April 1, 1999 the population of Vietnam totalled 76,327,921 persons, an increase of 11.9 million persons since the 1989 census. Although Vietnam made considerable progress in its population planning strategy, the intercensal increase in the population was equivalent to the population of a country of

medium-size. (It is noted that there are about 120 countries with less than 12 million persons in the World.) The intercensal population growth rate of the period 1989-1999 was 17%, decreasing by 5% compared to the previous 10 years. Up to 1998, the Total Fertility Rate (TFR) of Vietnam was 2.5 children per woman of reproductive age, decreasing by 35% in comparison with the TFR for the previous 10 years.

Between 1989 and 1999, the distribution of population by regions also changed. Population increased in 3 regions: Southeast, Central Highlands and Northwest; and decreased in other regions, declining most in the Red River Delta and MeKong River Delta regions. This is the result of migration and birth reduction in these regions. Due to the population increase of nearly 12 million persons, the population density of Vietnam has increased from 195 persons/km^2 in 1989 to 231 persons\km^2 in 1999. The population density of Vietnam is among the highest in the region as well as the world.

The migration rate for the 5-year period before the census was 74%. Excluding migrants between communes within the same district, the migration rate for 1999 was slightly higher than that of 1989 (52.1% versus 49.5%). The proportion of urban population is 23.5%. In the last 10 years, although the annual growth rate of the urban population similar to that in other Asian countries (3.2%), the proportion of the urban population is low compared to that of other countries in the region.

The proportion of the population aged 15 and over that is single has increased by 3% for both males and females compared to the 1989 Census. For the age groups under 40 for males, and under 24 for females, the proportion of single persons increased considerably in the last 10 years. In both urban and rural areas, the mean age of first marriage for females increased by only half a year, while that of males increased by 1 year.

For more information, contact Nguyen Quoc Anh, Director, Center for Population Studies and Information, 12 Ngo Tat To Str. Dong Da, Ha noi, Vietnam; by telephone at 8237960; or by fax at 7331246.

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Apologies

The transition between new co-editors and producers did not go as smoothly as we could have wished. The December 1999 bound copy of *The Survey Statistician* is incomplete... Please find below the country reports for Australia, Canada, Finland, Lebanon, Madagascar, and the Philippines that were omitted. We wish to express our sincere apologies to the representatives of these countries and to all our readers for this unfortunate and unintentional omission.

AUSTRALIA (from Susan Linacre)

Wage Cost Index: The Wage Cost Index (WCI) is a pure price index designed to measure changes over time in wage and salary rates of pay. Index numbers for the WCI are compiled from hourly wage and salary rates for a representative sample of employee jobs within a sample of employing organizations across both private and public sectors. By following a sample of jobs over time, and by maintaining a fixed weighting pattern, the WCI indexes are unaffected by, for example, shifts in the distribution of employees across occupations and industries, and between full-time and part-time jobs. The WCI is published quarterly (from December quarter 1997) and presents indexes covering total and ordinary time hourly rates of pay by various combinations of state and territory, sector, industry and occupation group.

Although changes in labor costs are primarily determined by wage rate movements, both wage and non-wage components need to be considered when assessing changes in the overall price of labor services. The WCI is the first stage in the development of the Labour Cost Index (LCI). The LCI will measure the combined effect on the price of Labour services of changes in wage costs and selected non-wage Labour costs, such as paid leave, workers' compensation and superannuation. For more information, contact Dina Neiger, ABS, Tel: 61 2 6252 6729.

Household Survey Questionnaire Design Developments in the ABS: ABS has recently reviewed current practices regarding questionnaire design and testing. Two major outcomes from the review are the development of an Attitudinal Questions Manual and the introduction of new
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survey pre-testing techniques to speed up questionnaire development and improve its quality.

1. The Attitudinal Questions Manual

Attitudinal questions refer to questions about a broad range of subjective phenomena, such as respondent attitudes, opinions, beliefs and preferences. These are of increasing interest to clients. The manual presents issues for consideration when using attitudinal measures in a survey, information and recommendations on how to write and test attitudinal questions, as well as how to develop scales for measuring attitudes or subjective phenomena.

2. New Survey Pre-testing Techniques

These include both pre-field techniques such as cognitive interviewing, behavior coding, and use of expert panels as well as field techniques such as the pilot or field test. Cognitive research laboratories have been established, and staff have been trained in cognitive interviewing techniques. Pre-field testing complements the standard field test by focusing on the respondent, particularly their comprehension and retrieval processes as a potential source of error.

For more information, contact Jane Barresi, ABS, tel: 61 6 252 7054, fax: 61 6 252 6530, e-mail: jane.barresi@abs.gov.au.

Adjusting for an Easter Proximity Effect: The movement of the Easter holiday period has a significant effect on the ABS retail sales series. The March 99 seasonally adjusted movement for Australian Total Retail Turnover was 2.3% of this, up to 1.5% was estimated to result from an early Easter, indicating the underlying movement of the seasonally adjusted series was around 0.8%. A new approach has been developed for testing and correcting an Easter proximity effect in the seasonal adjustment process that can be applied to Australian time series data. This approach is based on regression-ARIMA modeling together with regressors capturing the Easter effects in the pre-Easter and Easter holiday periods. The proposed approach is found to effectively correct for the Easter proximity effect. Further investigation on other ABS series is planned before introduction into ABS seasonal adjustment process.

For further information, please contact Mark Zhang, ABS, tel: 61 2 6252 5132 or e-mail: mark.zhang@abs.gov.au.

CANADA (from Gordon Brackstone)

The current source of Canadian data on the relationships between population health determinants, health status and outcomes is the **National Population Health Survey** (NPHS). The NPHS, conducted every two years since 1994, currently provides both cross-sectional and longitudinal estimates at the national and provincial levels. The NPHS is not designed to provide reliable cross-sectional subprovincial estimates, although subprovincial requirements can be met with sample buy-ins.

In response to needs for more detailed and more regular information on health in Canada, a new survey, the **Canadian Community Health Survey** (CCHS), is being developed. Its aim is to provide cross-sectional health data at the health-region level, in a regular and timely manner. (It is expected that CCHS will provide reliable cross-sectional estimates for more than 120 health regions, a level never targeted before). With the implementation of the CCHS, the NPHS will become a solely longitudinal health survey, providing information on the relationships among health determinants and health outcomes over time for a panel of respondents.

The CCHS is designed to begin monthly collection in September 2000. Each two-year collection cycle will comprise two distinct surveys: a subprovincial (or health-region level) survey in the first year with a total sample size of 130,000 respondents, and a provincial-level one in the second year with a total sample size of 30,000. Data collection for each year's sample units will be spread throughout the year. The sample size in any particular month or year may increase due to provincial or subprovincial sample buy-ins. During the first year, the sample will be selected from a dual frame: an area frame (using the Labour Force Survey (LFS) frame) and a Random Digit Dialing frame. For the second year, only the LFS structure will be used. The CCHS interview will include core content, socio-economic and demographic content, and optional content to meet basic health data requirements as determined by the health regions.

The first preliminary release is expected in the spring of 2001.

For more information, contact Lorna Bailie (613-951-0837 or bailie@statcan.ca), Health Statistics Division, or Johane Dufour (613-951-0088 or dufourj@statcan.ca), Household Survey Methods Division, Statistics Canada, Ottawa, Ontario, K1A 0T6.

Science and Technology Program: The Science, Innovation and Electronic Information Program at Statistics Canada is intended to provide statistical information on the status, evolution and socio-economic impacts of science and technology in Canada.

Two surveys are underway to measure innovation in the Construction and Manufacturing industries. The Innovation in Construction Survey has made use of the frame which had been used by the 1997 Construction Survey that collected financial data. The sample was designed to maximize overlap between the two surveys and enable linkage of the information. The Survey of Innovation is based on a sub-sample of existing 1997 surveys on manufacturing and natural resources.

Combined innovation and financial data will be used for research on innovation, to study industry performance and as a basis for development of national and regional policies.

For further methodology information on these surveys contact Mary March (at 1-613-951-1473 or marcmar@statcan.ca) or Yves Morin (at 1-613-951-2242 or moriyve@statcan.ca).

FINLAND (from Kari Djerf)

The ISI 52nd Session in Helsinki with various satellite meetings and conferences was clearly the major event of the Finnish statisticians in 1999. Many survey statisticians gathered first in Jyväskylä to participate in the Workshop on "Recent Trends in the Methodology for Social and Business Surveys" organised jointly by the University of Jyväskylä and Statistics Finland. Invited main lecturers were Prof. J.N.K. Rao, Prof. Chris Skinner and Prof. Harvey Goldstein. An interesting panel discussion was organized by Nanjamma Chinnappa completing the very successful workshop.

Three of the IASS short courses were held at the same time in Jyväskylä which gave the participants good opportunities to learn from many experienced survey statisticians, including Dave Binder, F. Jay Breidt, Nanjamma Chinnappa, Jean-Claude Deville, Wayne Fuller, Mike Hidiroglou, Graham Kalton, Pasi Koikkalainen, Leif Nordberg, Colm O'Muircheartaigh and Kirk Wolter.

As the organizers we would like to use this opportunity to thank all who contributed to the workshop and the short courses, including the participants, for inspiring papers and discussions during the week. Special thanks are due to IASS (especially John Kovar) and the International Advisory Board of the Workshop (Nanjamma Chinnappa, Graham Kalton and Gunnar Kulldorff).

After closing the Jyväskylä workshop many of us turned to the South to participate in the ISI session in Helsinki. The session was a success both from the scientific and the participation point of view. There were numerous meetings on survey sampling at both invited and contributed paper sessions. One highlight of all events was the Silver Jubilee of the IASS (the celebration of which has been described elsewhere).

One of the forthcoming major challenges to survey statisticians in Finland will be the Health 2000 Survey to be implemented in the years 2000 and 2001. The survey is meant to provide researchers with abundant data on various health indicators. There will be health interviews, self-reporting, various clinical examinations and probably some follow-up in the next few years. The Target population consists of adult the population with a sample size of about 10,000 persons.

For more information please contact Mr Kari Djerf (kari.djerf@stat.fi).

LEBANON (from Béchara Hanna)

Lebanon's national statistics bureau, the Central Administration for Statistics (CAS), became active after hostilities ceased in 1994. It is important to note that all statistical information available

between 1975 and 1993 was produced by private consulting firms.

Following is a list of the various surveys and censuses carried out since 1991, either by private consultants, public authorities, or the CAS.

1. The Census of Hotels, carried out in 1991 by Lebanon's national tourism council under my supervision.
2. The Census of Industry. The first phase was conducted in 1994 by the Ministry of Industry. The firm Études et Consultations Économiques (ECE) carried out the census in collaboration with the German GTZ (German Organization for Development).
3. The sample survey of industry, carried out in 1995 using the 1994 census frame to assess industrial production and added value in the industrial sector. This survey was conducted by ECE, with the cooperation of the German Organization for Development.
4. In 1994, the United Nations funded and helped to carry out a sample survey with a 10% sampling in order to identify the different socio-economic characteristics of the Lebanese population. Survey results were partial and did not cover areas such as Palestinian camps. The total number of residents was estimated at 3.1 million, excluding camp residents. The survey was conducted under the supervision of the Ministry of Social Affairs, a team of Lebanese statisticians, and United Nations consultants. Results of this survey were published in 1997.
5. In 1995 the CAS launched an ambitious census to enumerate the total number of buildings, built units, establishments, and principal and secondary residences. This survey was carried out in Lebanon for the first time since its independence.

   While the survey was being conducted, the CAS published for the first time a classification of all geographical units that make up the country as a whole. With this, a sample frame was designed that covers: residential apartments; buildings; geographical units; and economic establishments. The aggregate of geographical units was divided into 11,500 geographical blocks.

   Approximately 792,000 principal residences and 195,000 economic establishments were counted. This census was funded by the UNDP and the CAS.
6. In 1997, the CAS, working with the UNDP and INSEE, began a sample survey on household living conditions and household spending. The 1995-1996 census file was used as a sample frame for these two surveys.
   a. The survey on household living conditions covered 16,800 households across Lebanon. The number of residents, including Palestinians living in camps, was estimated at 4 million. The difference from the results of the 1994 survey conducted by the Ministry of Social Affairs is due to a population growth rate of 5.9% in 1995, 1996 and 1997. This high rate can be attributed to the return of Lebanese who had fled during the war and the fact that Palestinian camps were covered by the survey.
   b. The survey on household spending covered Beirut, the capital, and its inner suburbs. The two-stage sampling had a sampling rate of 2%. First-stage units were the blocks counted in the 1995-1996 census.

   Both these surveys were conducted under the supervision of the CAS Director General, Mr. Robert Kasparian.
7. The agriculture census was carried out by the Ministry of Agriculture in collaboration with the FAO. Survey activities were supervised by Mr. Izzedine Azabi, an FAO expert. The survey was divided into two phases, the first designed to count the total number of farm units, the second to establish the size of agricultural production.
8. A sample survey on the industrial sector is in progress. This survey is being carried out by the Ministry of Industry in collaboration with the German Organization for Development. The sample frame used was the 1994 industrial survey, which was updated by adding industrial units reported to the Ministry of Industry between 1995 and 1998.

This preliminary report was intended to list all statistical work completed or in progress between 1991 and 1999. In future reports, if it appears necessary, we may provide limited technical

details. For more information contact Béchara Hanna, e-mail bhanna@dm.net.lb.

MADAGASCAR (from Ravelosoa Julia Rachel)

Rural Monitoring Agencies: Faced with a lack of up-to-date, reliable data on the agriculture sector and with the disruptions in this sector following economic liberalization, the MADIO project (support for economic information and analysis) decided to set up a system to monitor rural Madagascar, where close to 80% of the population lives.

The system's objective is to monitor over time the major indicators used to assess the impacts of economic policies on the rural population. This includes production factors, living conditions of rural households, and prices paid to producers.

Repeated annual surveys are to be conducted with rural households (approximately 500 households by site), not with production units as is the practice with agricultural surveys. Information is based on statements made by the households. The sites were chosen to address key problem areas.

While not representative of the Madagascan agricultural sector, the rural monitoring agencies are now a rare source of information on rural development in Madagascar today. They can in no way replace the agricultural surveys, but they have demonstrated their importance and relevance. In particular, the data they provide are very useful for micro-economic analysis of rural households. Vanilla production is a case in point. The results concerning this cash crop from rural monitoring agencies have shown that the Government's fiscal policy of taxing vanilla has discouraged producers, although vanilla is one of the major export products providing currency to Madagascar.

The rural monitoring agencies have gone beyond the experimental stage. Backers in Madagascar have shown their interest in expanding the four rural monitoring agencies set up by the MADIO project to other sites across the island, selected in terms of problematic situations, to provide indicators to measure the local impact of development projects on rural areas. A network of fourteen agencies has now been created.

Some of the problems analyzed by the rural monitoring agencies are: the problem of land surrounded by an arid zone (studied by agencies in the island's south); large irrigated areas; cash crops; and small, mixed-crop family operations.

For further information, contact Patrick Rasolofo Jaonarison, tel: (261-20)-22-637-78, fax: (261-20)-22-647-19.

PHILIPPINES (from Gervacio G. Selda, Jr.)

The Bureau of Agricultural Statistics (BAS) of the Department of Agriculture of the Philippines recently conducted the 1999 Barangay Screening Survey (BSS), which aims to collect and compile statistics on the basic agricultural structure and other ancillary barangay level information in about 40,000 barangays nationwide. The survey envisioned to initiate the development of a responsive statistical system capable of providing timely, reliable and comprehensive information on the production, marketing and utilization of crops, livestock and fisheries at the subnational levels. Specifically, it aims to generate updated baseline information on area cultivated by type of crop; to assist in the identification of areas for future government food production program; to provide the basis for the construction of new sampling frames for future statistical surveys and to provide a common set of updated basic data for use in agricultural development planning and policy formulation at the subnational levels. Data collection is through personal interview of barangay Key Informants that include barangay officials, farmer leaders and other knowledgeable persons in the locality. To validate gathered information, a post enumeration survey, actual inspection and interview of government technicians are conducted. A computerized processing system called the BSS Macro System is used to facilitate the processing of the BSS data. The system's outputs consist of workfiles, summary worksheet files, and soft/hard copies of required tables, where the Provincial and Municipal Agro-Economic Databases are prepared. (Contact: Director Romeo S. Recide, Bureau of Agricultural Statistics, Ben-lor Bldg., 1184 Quezon Avenue, Quezon City, Philippines. Fax: (632) 371-2086, tel: (632) 371-2050, e-mail: da-bas@gaia.psdn.org).

Responding to the pressing local and international demand for more reliable, timely and accessible information and recognizing the problems of data producers, the Philippine government implemented the Government Statistics Accessibility Program (GSAP). A major activity under this program is the development of the Series of Standards for Statistical Information Dissemination (SSSID), which serves as a primary guide and policy in the dissemination of statistical information generated by the Philippine Statistical System. Specifically, the SSSID seeks to promote adherence to the principles of reliability, integrity, timeliness and accessibility in the dissemination of statistical information; promote greater utilization of statistical information for sound decision-making; foster generally accepted data dissemination practices attuned to the needs of users; recommend measures to address gaps and areas for improvement in disseminating statistical information; and involve active participation of users in making statistics more accessible and useful. (For more details, contact: Dr. Romulo A. Virola, Secretary General, National Statistical Coordination Board, 104 Sen. Puyat Avenue, Makati City, Philippines. Fax: (632) 896-1778, tel: (632) 890-9397, e-mail: info@nscb.gov.ph).

The National Statistics Office will conduct the Pilot Time Use Survey in November 1999 as a component of the project "Improvement of Statistics on Gender Issues" of the National Commission on the Role of Filipino Women of the Philippines. The survey is conducted to determine the appropriate mode of data collection and data capture instruments for conducting a national time use survey. Results would serve as inputs in the development of a framework for measuring women's and men's contribution to the economy as well as in the formulation of estimation procedures and standards for the valuation of time use for unremunerated work of women and men. The survey will cover the household population 10 years old and over in two pilot provinces. It will generate information on how Filipinos allocate their time to activities such as paid work, housework, and other non-market work and free time activities. The survey will apply the Trial Classification for Time Use Activities of the United Nations Statistics Division. Results of the survey are expected to be available by February 2000. (Contact: Administrator Tomas P. Africa, National Statistics Office, Sta. Mesa, Manila, Philippines. Fax: (632) 713-7073, tel: (632) 713-7074, e-mail: T.Africa@mail.census.gov.ph).

The National Statistics Office of the Philippines recently conducted the 1999 Survey on Export Sales and Business Outlook, covering the leading exporters of the country's major export products. It aimed at generating statistics on business performance of exporters in terms of employment, sales, utilization of imported raw materials in production and disposition of foreign exchange. Part of the survey gathers information on the expectations of exporters on the business climate in the coming year and the reasons for these. Preliminary results of the survey are already available to the general public. (Contact: Administrator Tomas P. Africa, National Statistics Office, Sta. Mesa, Manila, Philippines. Fax: (632) 713-7073, tel: (632) 713-7074, e-mail: T.Africa@mail.census.gov.ph).

Question/Answer

As always, we welcome alternative views on the issues raised, comments on the answers provided. In particular, Q42.2 below raises a number of related issues. I have tried to answer only some of those, and invite responses from other members. We hope to deal with them more fully in future issues.

Please send questions and observations to:
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E-mail: vjverma@CompuServe.Com

42.1

Q We have a 'master sample' of PSU's from which a sample of households was drawn some years ago. We now need to draw another sample of households from the same areas, but without overlapping with households in the first sample. The original household lists have been updated. Can we simply eliminate the households appearing in the first sample from the lists for selecting the second sample?

Note: The IASS member submitting this question did not wish its source or context to be identified. Nevertheless, I have included it in this Column because of its general and practical interest – V Verma.

A Let us assume for simplicity that within each sample area, an additional equal probability random sample of households is to be selected, with no households overlapping an existing sample. Let b be the required (target) sample size in the area, the sampling rate being $f=b/B$, where B is the number of households listed in the area. In principle, the household list can be divided into two parts, $B=B'+B''$. Here, B'' is the number of new households in the area, not existing in the population at the time of the first selection; and B' is the number of 'old' households present at the time of both the selections, from which c appeared in the first sample (and hence are not eligible for inclusion in the second sample).

It is clear that to achieve the required sampling rate f, we have to apply the sampling rates

(1.a) $$f' = \left(\frac{B'}{B'-c}\right).f$$

to pre-existing households B', ignoring the c which appeared in the first sample, and

(1.b) f

to new households B''.

By contrast, simply deleting the c previously selected households implies the application of a common sampling rate

(2) $$f'' = \left(\frac{B}{B-c}\right).f\,.$$

This results in some under-sampling of pre-existing households (since $f''<f$), and corresponding over-sampling of new households ($f''>f$). Simply deleting previously selected households from the updated lists is therefore not a strictly correct procedure, and should not be used unless the proportion of new households is trivial or the sampling rate in the earlier survey is very small, say $c/B<0.1$.

On the other hand, the application of the correct scheme (1) has two practical difficulties. (i) It is inconvenient to apply two different procedures in the same area. (ii) More problematic can be the requirement to separate out the new list into B' old and B'' new households. The information collected during household re-listing is often insufficiently precise to achieve completely correct matching between the old and new lists. Combining, splitting and movement of households, changes in household composition, real or apparent changes in the household reference person or head, etc., can result in matching errors.

I have therefore used the following procedure in practice.

(3.a) We begin by selecting a random sample of households from the entire list (B) for the area with the required sampling fraction $f=b/B$, not worrying about any overlap with the existing sample.

(3.b) Then we identify all households in (3.a) which have already appeared in the

previous survey, and devise some suitable randomised procedure to replace them with other households from part *B'* of the list.

The number requiring replacement is of the order of *(f.c)*, which is normally quite small. We can, for instance, select from *B* a replacement sample of size a little larger than *(f.c)*, and retain in it only those households which have (i) not appeared in either of the other samples, and (ii) are verified to have existed at the time of the first selection, i.e., to be a part of *B'*. (Such verification for the small number of households involved is much easier than matching the full lists.) The required substitutions into (3.a) are then provided by a random subset of the replacement sample (3.b).

It is assumed that the number of households available in the area is large enough to yield sufficient numbers in (3.b) for the above purpose; otherwise, some overlap between the two samples has to be accepted.

Note that substitution of the type described above retains the random (probabilistic) nature of the final sample. This is quite different from substitution for non-response, which is often selective and biased and hence, as a rule, is not recommended in good survey practice. Note that the issue here is not whether the replacement is provided from a random sample, but whether the *units being replaced* constitute a random sample. This is the case in replacing units from an earlier random sample, but not in substituting for selective non-response.

42.2

Q Our Labour Force Survey involves a sample of 30,000 households per quarter, selected from a PPS sample of just over 800 PSU's. Each quarter, 25% of the households are rotated out, but retaining the same sample areas. Sample weights are computed in three steps: (i) inversely proportional to household sampling probabilities, which differ significantly across sample areas because of inaccuracies in measures of size used for the PPS sampling, followed by the selection of a fixed number of households per area; (ii) inversely proportional to the response rate within each PSU (the overall non-response rate is around 30%); and (iii) adjustment to external control distributions, involving around 1,500 adjustment cells representing a cross-classification by region (50), type of place (2), gender, and age group (15). We seek advice on a number of problems relating to the weighting procedure:

1. The procedure results in a large variation and some extreme values in the weights. How can these be controlled?
2. How to adjust for changed selection probabilities of households following periodic re-listing of households in the sample areas?
3. How shall we produce annual estimates from the quarterly applications of the survey?
4. How should we produce estimates for small areas, starting with say 50 geographical regions, or around 100 domains by region and type of place?

(Nadia Grygorovych, Ukraine)

A This comprehensive set of questions requires a detailed and careful response. I address only (1) and (2) in this issue, and hope to return to the others in the near future.

42.2(1). Weighting

Let us consider each of the three steps in your basic weighting procedure.

Design weights

The large variation in the household selection probabilities (and hence in design weights) in your design arise from the facts that (i) at the first stage, the measures of size used in the selection of PSU's with PPS are inaccurate, but (ii) at the second stage, a fixed number of households is selected from each sample PSU. In such a 'fixed-take design', the household selection probabilities vary from one area to another to the extent the measures of size are inaccurate. This is contrasted with a 'self-weighting design', in which all households receive the same overall probability of selection, but the number of households selected is allowed to vary across PSU's to the extent the measures of size used in the selection of the areas differ from their actual sizes.

Please see *Survey Statistician* 31 (Q/A31.1) for a discussion of these designs. As noted there, a

fixed-take design has a number of practical disadvantages and it is generally preferable to opt for a self-weighting design. This is particularly true in surveys like the LFS, where the interview is relatively short and considerable variation can be tolerated in the number of interviews per area. In any case, it is desirable to avoid unnecessary and arbitrary variations in household selection probabilities. Q/A31.1 also discusses the possibility of having a compromise between the two types of designs, in which the PSU sample-takes are allowed to vary to reduce (though not completely eliminate) variations in the household selection probabilities.

Obviously, it is only a long-term solution to the issue you raise in the context of an ongoing, continuous survey. But I hope that this will be borne in mind in the next major redesign of the survey, and you will move from a fixed-take towards a self-weighting design.

Weighting for non-response

Let me first note that a number of national Labour Force Surveys are able to achieve better response rates than the 70% you mention. It is important to investigate the causes and specific circumstances resulting in non-response, to identify areas and interviewers with particularly low performance, and to devote more resources and attention to improving the response rate – even if that implies some reduction in the sample size which can be achieved within the available budget.

Weighting to reduce the impact of non-response involves dividing the sample into 'adjustment cells' and weighting all units in a cell in inverse proportion to the response rate in the cell. The risk of introducing extreme weights is increased if the number of units per cells is too small. This appears to be the case in your application, with the non-response weights applied at the level of individual PSU, resulting in over 800 adjustment cells each with only 40 or so sample households. I would prefer to apply the adjustment at the level of groups of, say, 4-5 geographically adjacent PSU's, so as to even out extreme variations in the PSU response rates. In your case, this type of grouping of PSU's will give 150-200 adjustment cells, each with 150-200 sample households.

External controls

The above point applies even more strongly to the weights introduced to adjust the sample to external control distributions. With something like 50 regions, urban-rural classification and 15 sex-age groups in your case, we get around 1,500 adjustment cells. This results in an average of only 20 or so sample households per cell, with many very small or even empty cells. My recommendation would be to greatly reduce the number of adjustments cells. This can, for instance, be done by using the 'raking' or 'iterative proportionate fitting' procedure. The procedure is basically as follows. The required control variables are divided into sets. The sample data are weighted to conform simultaneously to the *marginal distributions* according to the sets, but not to the full cross-classification of all the control variables. For instance, the sets in your example could be (i) 50 regions, and (ii) 30 categories by sex, age group, and type of place. We can first adjust the sample weights so as to make the population distribution by region in the weighted sample agree with that distribution according to the (more reliable) external control. This simply means multiplying all weights by the factor (P_i/p_i), where P_i is the proportion of the national population in region i, and p_i is that proportion in the weighted sample – using weights as determined in all the preceding steps. The same procedure is then applied to further adjust the weights to conform to the marginal distribution according to (ii). These two steps complete one iteration, and the process can be repeated iteratively.

The effect of weighting on variance

With essentially arbitrary or external weights of the type discussed above, sampling variance tends to be inflated by the factor (Kish, *Survey Sampling*, 1965):

$$D_W^2 = \frac{n.\sum_j w_j^2}{(\sum_j w_j)^2} = 1 + cv^2(w_j)$$

where $cv(w_j)$ is the coefficient of variation of the individual weights.

Empirically it has been found that the effect of weighting (D_w) tends to persist rather uniformly across different types of statistics and different subclasses, including individual tabulation cells. This pervasiveness of the effect makes it important

keep it under control. Large values of D_w may mean that too many and too small adjustment cells have been used and/or the presence of extreme weights.

42.2(2). Relisting

The procedure for selecting a new sample of households following re-listing of the sample area has been discussed in 42.1 above. The only additional issue in the rotational design of your LFS concerns the treatment of households retained from earlier selections. Firstly, no action is required in relation to sample units which no longer exist in the population of the area. (A common mistake is to treat them as non-respondents or, still worse, to substitute for them.) Secondly, additional sample should ideally be selected from the stratum of new households (B") which have come into existence since the original selection.

Women in Statistics: the Profession Speaks

Beverley A. Carlson
Chair, ISI Committee on Women in Statistics[1]

1. Introduction

At the dawn of the third millennium, why are women participating in exceedingly low numbers in the statistics profession? Why are women underrepresented in the scientific professions? The current impetus for these questions arises from the ongoing debate among statistics professionals about the low number of women elected to the International Statistical Institute (ISI), and there is a great concern by the ISI leadership, particularly the ISI Committee on Women in Statistics (CWS), to turn this situation around. In part, the low number of women in the ISI led to the establishment of the CWS.

This article analyses the representation of women in the statistics profession, which is low in virtually every country, a pattern of generations. It looks at the diverse realities among countries and regions. It is an outgrowth of the work of the CWS, and a full text of this paper with a discussion of women in science and contributions from a number of leading statisticians was published by the Economic Commission for Latin America and the Caribbean (ECLAC) and presented at the ISI Helsinki Session in August 1999.[2] A revised paper has been submitted for publication to the International Statistical Review.[3]

2. The ISI CWS[4]

The CWS was formally established during the ISI Beijing Session in August 1995 and held its first meetings at the ISI Istanbul Session in August 1997. Initially, what had motivated the CWS's establishment was concern among the ISI leadership over low female representation in the ISI and its Sections.

The CWS's Terms of Reference reflect this concern and deal with a number of factors closely related to it. They are:

- To promote and strengthen the representation of women statisticians in the ISI and its Sections;
- To help in providing opportunities for women members to assume active and visible roles in the ISI and other statistical associations;
- To collect information on women in the statistical professions in different countries and to facilitate the flow of information among women statisticians;
- To stimulate interest in statistics among women and encourage women in schools and colleges to study statistics; and
- To support the compilation of statistics on women, with a view to generating relevant studies concerning women's roles in the various activities in their countries.

3. Women's Representation in the ISI and its Sections

The discussion among the membership of the ISI about women's representation has gone on for some time, with the ISI leadership seeking to implement practical solutions. However, the

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[2] *Women in Statistics: The Profession Speaks*, ECLAC, LC/R.1916 United Nations Economic Commission for Latin America and the Caribbean (ECLAC), Santiago, Chile. Printed copies may be requested from the author or by request to ECLAC publications; also viewable on ECLAC web site: www.eclac.cl/ and the web site of the ISI Committee on Women in Statistics: www.laplace.stat.cwru.edu/~mhr/isi/.

[3] *Women in the Statistics Profession: A Status Report.*

[4] Committee members for 1999-2001 are: Heidi Arboleda (Philippines/Thailand); Barbara Bailar (USA); Lynne Billard (Australia/USA); Beverley Carlson (USA/Chile); Lelia Boeri de Cervetto (Argentina); Nanjamma Chinnappa (Canada/India); Len Cook (New Zealand); Denise Lievesley (UK/France); Mary Regier (Lebanon/USA); and Dennis Trewin (Australia).

solutions are not simple because the problem is not simple. It first requires examining the size and makeup of women's membership, in regional and country terms, and then setting these realities into the context of the distribution of the overall membership.

The difficulty in identifying qualified and interested women appears to result, in part, from the larger problem of the low representation of the developing regions in the ISI and the inadequate network for recruiting outstanding male and female members from these regions on a global scale. In some countries, statistics is a relatively new academic area of study and so has not developed a body of professionals in proportion to their population; in some countries, it is a profession that has not had much demand until the present and so remains a small discipline.

Participation in ISI meetings and membership dues are relatively costly, and potential professionals from developing regions often find it difficult to meet these costs. They may not see the value of gaining membership because the network may not be perceived to be sufficiently useful for local professional purposes or personal self-fulfillment. These factors have come up, for example, in trying to interest more colleagues in Latin America to participate. Recent efforts by the ISI and its Sections to make travel funds and scholarships available to its membership are a very welcome and helpful development that is already encouraging more active participation of younger members and statistics professionals working in developing countries.

In fact, the ISI situation is only the tip of the iceberg in a much larger issue. A major reason for the low representation of women in the ISI from the United States and Canada, for example, is the very low number of women statistics professionals working in the United States and Canada. Hence, the ISI is a reflection of a longstanding larger reality as is seen in Billard's historical analysis of academic careers in the United States.[5] Consequently, to change the ISI situation it is, at least in part, necessary to improve the low participation of women in the statistics profession and to do that it is necessary to understand what underlies the condition of low participation. Answers to these questions can lead to concrete remedies.

How well are women represented in the ISI and its Sections? According to data supplied by the ISI in April 1999, the ISI had only 183 women members out of a total membership of some 2,000, or 9.2%, as shown in Table 1. Low as this figure is, it is still a considerable improvement over the situation 10 years ago when ISI had 95 women members representing 6.4% of a total membership of 1,490. In the intervening 10 years, there were 506 newly elected members of the ISI of whom 88 were women, i.e., 17%, an improvement but not sufficient.

When one looks at the regional distribution of ISI membership, it can be seen that more than four-fifths (84.7%) of the ISI members come from the industrialized regions, a fraction more than for male ISI members. Only 28 women ISI members come from the developing regions of Latin America, Africa, and Asia. The region with the highest proportion of women ISI members is Latin America and the Caribbean where 18.6% of the ISI members in the region are female, double the global average. It is also very interesting to see that the largely Catholic Western Mediterranean countries of Italy, France, Spain, and Portugal have a similarly high proportion of women ISI members (18.3%) compared to only 6.8% for the rest of Europe. The figure for Europe as a whole is 9.9%, the same as for the United States and Canada.

Possible explanations for this "Western Mediterranean phenomenon" appear to be strongly linked to the higher proportion of all-girls schools in these countries where girls are encouraged to pursue mathematics and science and to national education policies (e.g., Italy's) where mathematics and science classes are mandatory, with a policy to teach all science subjects every year. In the United States, by contrast, mathematics and science are not compulsory subjects but optional and peer pressure can easily persuade girls to stay away from them because they are not considered "girls" subjects in many schools.

[5] See Lynne Billard, Academic careers for women. *International Encyclopedia of Education, 3rd Edition*, 1997.

Table 1. Membership of the ISI: 1999

Region	Women ISI members		Men ISI members		Total ISI members	
	No.	%	No.	%	No.	%
World	183	9.2	1,813	90.8	1,996	100
United States & Canada	58	9.9	529	90.1	587	100
Europe	92	9.9	835	90.1	927	100
Western Mediterranean*	46	18.3	206	81.7	252	100
Rest of Europe	46	6.8	629	93.2	675	100
Japan	1	0.9	109	99.1	110	100
Australia & New Zealand	4	7.3	51	92.7	55	100
Latin America & Caribbean	11	18.6	48	81.4	59	100
Africa	6	3.8	46	96.2	52	100
Rest of Asia	11	5.3	195	94.7	206	100
Industrialised regions	155	9.2	1,524	90.8	1,679	100
Developing regions	28	8.8	289	91.2	317	100

* France, Italy, Portugal, and Spain.

Source: B. Carlson, based on data supplied by the ISI.

By far the largest difference in male-female membership occurs in Japan where only 1 member out of the 110 Japanese ISI members is female (0.9%). Surely this cannot reflect the proportion of women working in statistics in Japan? Where are Japanese female statisticians working and how do we find them? In the rest of Asia, the proportion of women members is also very low at only 5.3%. Similarly, the proportion in Africa is very low at only 3.8%.

There are 49 countries represented in the ISI by 1 or more women members. If one adds the membership of the ISI Sections, 85 countries are represented in the ISI or its Sections by 1 or more women members.

The representation of women is much better in some of the Sections of the ISI with a total of over 700 women members in its various Sections, as shown in Table 2. The International Association of Survey Statisticians (IASS) leads in numerical terms with 268 members and the International Association of Statistical Education (IASE) in percentage terms with 26.7% women. By contrast, the International Association of Scientific Computing (IASC) and the Bernoulli Society for Mathematical Statistics and Probability are just marginally above the main ISI position of 9.2%.

These differences in women's participation among the sections show a strong tendency for women to belong to the "applied statistics" Sections with proportionately fewer women in the "hardcore" statistics, mathematics, and computing Sections.

The main difference between the ISI and the Sections is that membership in the ISI is by election by members of the ISI whereas membership in the Sections is by application by interested professionals. It could be that while women are taking the initiative to join the Sections, ISI members need to take more initiative to recruit women particularly as ISI requires five existing members to propose the election of a new member. The recruitment of women needs to be examined in the context of the representation of women in the *statistical profession* as a whole, particularly in the regions and countries where women's representation is often very low and the low ISI membership is to some extent a reflection of this.

The regional and country figures are a good starting point for understanding whether the low number of women members indeed represent a special ISI gap, e.g., the extreme situation in Japan (0.9%) or just the low percentage in Asia as a whole (3.8%). Decision-making members of the ISI tend, more often than not, to come from the industrialised world, and they would have a better

Table 2. Membership of the Sections of the ISI: 1999

ISI sections	Women ISI members		Men ISI members		Total ISI members	
	No.	%	No.	%	No.	%
International Association of Statistical Education (IASE)	112	26.7	307	73.3	419	100
International Association of Survey Statisticians (IASS)	268	21.5	976	78.5	1,244	100
International Association for Official Statistics (IAOS)	89	17.1	432	82.9	521	100
International Association of Scientific Computing (IASC)	73	10.2	644	89.8	717	100
Bernoulli Society for Mathematical Statistics and Probability	164	10.1	1,463	89.9	1,627	100
All ISI sections	706	15.5	3,822	85.5	4,558	100
ISI	183	9.2	1,813	90.8	1,996	100

Source: B. Carlson, based on data supplied by the ISI.

network for recruiting outstanding women into the ISI. The question is how to discover the outstanding women in the regions that have very low representation, e.g., Asia. Furthermore, there is the equally important issue of the overall low representation in the ISI of both men and women from developing countries and the reasons for it and how to change it.

It is not a question of women having to reach the very top of the statistical profession to be nominated for the ISI. Most men members of the ISI come from the upper echelons, and there are certainly many first class women statisticians at that level who could contribute to the ISI. It is a matter of finding them, attracting them, and sponsoring them to join the ISI. Such a campaign would definitely mean a personal commitment on the part of its existing members.

The CWS is committed to working with the ISI and its Committees and Sections, ISI members, and the ISI Permanent Office to strengthening the membership and participation of women in our scientific association. We look forward to working with the membership of IASS, in finding good women statisticians who have been overlooked and taking the necessary steps to get them nominated. One concrete action would be to examine the non-ISI membership of the Sections and search for worthy candidates to propose for nomination to the ISI. The ISI Permanent Office could serve an important monitoring and reporting function through publishing regular reports on the progress of the recruitment of women and publishing statistics on the decision-making roles of women in the association.

4. Women in Statistics Teaching

An important factor in the current limitations of statistics on women and the low participation of women in the statistical profession could well be the inadequate representation of women in the *teaching* of statistics. It is notable that the ISI, with its low representation of women, is still better off in gender terms than tenured statistics faculty in U.S. universities. It is surprising to realise that, in the United States, the teaching of statistics at the university level is almost exclusively a male

Table 3. Faculty in university departments of statistics, United States of America: Autumn 1995

	Ph.D. courses			M.A. courses			Ph.D. and M.A. courses combined			
Category	Tenured	Tenure eligible	Other and part time	Tenured	Tenure eligible	Other and part time	Tenured	Tenure eligible	Other and part time	Total faculty
Women	32	36	50	8	2	9	40	38	59	137
Men	617	135	128	73	18	16	690	153	144	987
Total	649	171	178	81	20	25	730	191	203	1,124
Women as % of total	4.9%	21.1%	28.1%	9.9%	10.0%	36.0%	5.5%	19.9%	29.1%	12.2%

Source: B. Carlson, based on data appearing in Loftsgaarden (1998).

profession.[6] The latest comprehensive data on this situation, as shown in Table 3, reflect the situation in the statistics departments of U.S. colleges and universities in 1995.

It can be seen that in the fall of 1995, there were only 40 tenured women statistics faculty teaching Ph.D. and M.A. courses in U.S. universities and only another 38 who were tenure eligible, out of over 921 possible tenure or tenure eligible positions. Women made up only 5.5% of full-time tenured statistics faculty in the United States, meaning that nearly 95% of tenured faculty who were teaching statistics were men. This condition will not have changed very much in the few years since that inquiry. Even including tenure-eligible and other faculty including part-time teachers, women statistics teachers in universities accounted for only 12.2% of the total faculty.

This serious disparity raises many questions. Why is this so? Why are not more women teaching statistics? Is this a recent phenomenon or a longstanding one? The age distribution of tenured and tenure-eligible women faculty tends to lean toward the younger age cohorts but even then the female representation is still very low. Especially with the evolution of the information age, where statistics and data are central to many professions and appear everywhere in the public dialogue, in newspapers, on television, in magazines, one would assume that more women would be seeking statistical careers.[7] There is nothing inherent in a statistics career that might account for the low participation of women, unlike careers that are very time demanding, take women away from their families, or are labour or travel intensive.

What does the almost nonexistence of women in the teaching of statistics mean for statistical production? Are statistics gender-biased because teachers of statistics are almost exclusively men and so the female perspective is not sufficiently reflected in university statistical research, curriculum design, role models, and statistical production? In addition, do the "statistics in society" that we produce and read about reflect this gross distortion in statistical faculty teaching in colleges and universities? This surprising phenomenon surely warrants a followup study to discover the reasons. The gender gap is just not what we would have logically thought to be the case.

The leading question is what is the impact of the highly skewed gender distribution on the teaching of statistics in colleges and universities in the United States? Additionally, what is the comparable situation in other industrialized and developing countries? Is this a unique U.S. situation or is it common to most universities in the world? We need to undertake further enquiries.

[6] See Loftsgaarden and Watkins, Statistics teaching in colleges and universities: courses, instructors and degrees in fall (1995). *The American Statistician*, 52, No. 4, November 1998.

[7] See Albers and Loftsgaarden, *Statistical Abstract of Undergraduate Programs in the Mathematical Sciences and Computer Science in the United States: 1990-1991 CBMS Survey*, MAA Notes, 23, The Mathematical Association of America.

Census 2000 and Major Current Surveys in the Philippines

Gervadio G. Selda, Jr.

The National Statistics Office (NSO) of the Philippines will conduct a nationwide Census of Population and Housing 2000 (Census 2000) on May 1, 2000. This stocktaking of population and housing generally aims to provide government planners, policy makers, and administrators with data on which to base their social and economic plans and programs. Every year, billions in public funds for roads, schools, health facilities, etc. are awarded to communities and local governments based on census counts. The census serves as an inventory of the country's resources and characteristics at a given point in time. The inventory will relate to the characteristics of people, their housing, their occupation and trade, and almost all physical or non-physical conditions affecting the well being of people in the country. Specifically, Census 2000 will reveal how many people are residing in the country, where they are located, and who are, among others, working or going to school, professional or sales workers, Cebuano, Tagalog, or Maranao, etc. It will take 42,000 teachers-interviewers to list, through house-to-house interview, 75 million persons who are residing in 42 thousand barangays in the country. Ten thousand field supervisors will oversee the census operation in 51 enumeration areas. Preliminary results of Census 2000 will be made available in August 2000 through quick count reporting of data from the field on a weekly basis. Final count of population will be proclaimed by the President of the Republic of the Philippines upon presentation of the NSO in December 2000. On the other hand, final reports of population and housing and their characteristics will be made available about 2 years after the official proclamation of population count by the president.

The Maternal and Child Health Survey 2000 (MCHS) is also slated to be conducted by NSO in April 2000 as a rider survey to the April round of the Labor Force Survey. The survey aims to provide the Department of Health information on the coverage and effectiveness of its maternal and child health programs at the regional level. Specifically, it aims to determine the percentage of fully immunized children at the national level, to monitor the percentage of children protected at birth against neonatal tetanus, to find out the percentage of women breastfeeding, the duration of breastfeeding, and the reason why mothers stop breastfeeding. A four-page MCHS questionnaire composed of 36 questions on pre- and post-natal care, immunization and breastfeeding would be used to enumerate female members of sample households aged 15 to 49, irrespective of marital status, who have surviving children below three years old. Preliminary results are due in August 2000 while the final report is expected in November 2000.

Another rider survey to the April round of the Labor Force Survey is the 2000 Family Planning Survey (FPS) which is aimed at providing information to the Family Planning Service of the Department of Health on contraceptive use in the Philippines. Specifically, the survey will determine the contraceptive prevalence rate in the country, the contraceptive methods women currently use, the sources of modern contraceptive methods, and the percentage of births whose mothers are highly exposed to maternity-related risks. The respondents of the survey, using a three-page 17-item questionnaire, are female members of sample households aged 15 to 49, irrespective of marital status. Preliminary results are expected to be made available by August 2000 while the final report will be ready in September 2000.

The 2000 Pilot Time Use Survey (TUS), a first of its kind in the Philippines, was undertaken also by NSO in the early part of the first quarter. The survey examines the different activities of men and women in relation to how they spend their time in both remunerated and unremunerated activities. Specifically, the survey aims to test and recommend alternative modes of data collection and data capture instruments for time use surveys, to obtain data to serve as bases for valuation studies for paid and unpaid work, and to adopt and test the Trial Classification for Time Use Activities that has been proposed by the United Nations

Statistics Division (UNSD) to the Philippine situation. The enumeration part of the survey was done in February 2000 covering 240 purposively selected sample households in eight barangays—two from the National Capital Region and six from Batangas. Processing of the manual has already started while the generation of tables is scheduled in April 2000.

The NSO also undertook jointly with the UNICEF the 1999 Multiple Indicator Cluster Survey (MICS), a national survey designed to generate national level data on the health of Filipino children below 5 years old and basic education of those 3 to 17 years old. MICS collected data pertinent to health practices of the Filipino women during and after pregnancy, HIV/AIDS awareness, and the extent of birth registration of Filipino children. Specifically, MICS serves as input for the measurement of the attainment of the End-Decade Goals (EDGs) for Filipino children, and ascertains health and social indicator such as vitamin supplementation program, salt and iodization, birth registration, care of cough and weight monitoring, HIV/AIDS awareness, education, rights of children, maternal and infant health, and working children. MICS employs a stratified multistage modified cluster sampling design and adopts the stratification scheme and the two stages of sample selection of the master sample design of the Integrated Survey Household (ISH). The enumeration for this survey consisting of 7,680 households nationwide was conducted November-December 1999. Manual and machine processing of data is ongoing. Report preparation and table generation is on April 2000. Other agencies involved in the survey were Department of Health (DOH), Department of Education, Culture and Sports (DECS), Department of Science and Technology (DOST), National Economic and Development Authority (NEDA), National Statistical Coordination Board (NSCB), Department of Social Welfare and Development (DSWD), and Department of Labor and Employment (DOLE).

The NSO will be launching also the 2000 Census of Philippine Business and Industry (CPBI) which will be the front-runner of the quinquennial Census of Establishments. With 1999 as the reference year, it is designed to generate provincial estimates on level of economic activities of specific businesses and industries. Field operations start in August, with the preliminary results targeted to be available by the end of 2000. The samples for the census shall be selected in two phases. The first phase sample will answer basic questions that will be the basis for provincial statistics. A more detailed questionnaire will be used for the second phase sample from which detailed characteristics of businesses and industries at the regional level will be produced. Screening questions on subcontracting activity of the establishment will be asked in order to generate the frame for the subsequent survey being developed to obtain information on the levels of and characteristics of subcontracting activities in the country. Frame for the census comprises all establishments in the country in the first phase and all establishments with employment size of at least 20 in the second phase. The reporting unit will be the establishment. Domains of the survey are the provinces and highly urbanized cities using the most detailed industrial classification for the first phase and regions with industry subgroups for the second phase (For more details on NSO activities, contact: Administrator Tomas P. Africa, National Statistics Office, Sta. Mesa, Manila, Philippines. Telefax: (632) 713-7073, Phone: (632) 713-7074, Email: T.Africa@mail.census.gov.ph)

The Survey on Environmental Protection Expenditures (SEPE) was undertaken by the National Statistical Coordination Board (NSCB), the agency responsible for the compilation of the country's Environment and Natural Resources Accounting (ENRA). The ENRA integrates environmental concerns into the national economic accounts of the country. The survey was conducted in December 1999 by the NSO as a rider to its 1998 Annual Survey of Establishments. Its objective is to generate data on environmental protection expenditures incurred by different industries to prevent and abate pollution and the practices and technologies used. These data were identified as gaps in the compilation of environmental accounts. The survey covered 800 sample establishments in industries identified to be highly pollutive in the National Capital Region (NCR) and Regions III (Central Luzon) and IV (Southern Tagalog) and the Cordillera Administrative Region. For the manufacturing sector in the NCR, all establishments with average total employment (ATE) of 500 were covered. For the other industries in the NCR as well as the other regions, the establishments covered were those with ATE 200 and over. The major data items collected by the survey include the following: (1)

financial profile in 1998; (2) revenues relating to environmental protection in 1998; (3) current operating costs on environmental protection in 1998; (4) capital expenditures on environmental protection in 1998; (5) inventory of fixed assets for environmental protection as of December 31, 1998; and (6) investment plan on environmental protection.

Another major activity of NSCB is the Leading Economic Indicator System (LEIS) which involves the study of the behavior of indicators that consistently move upward or downward before the actual expansion or contraction in the overall economic activity. The system, which has been institutionalized by the NSCB, is able to generate a composite leading economic index on a quarterly basis. The index provides advance information on the direction of the country's economic performance in the shortrun. As a secondary output, the LEIS is able to provide a forecast of the growth rate of the gross domestic product for the quarter. The estimation of the index uses a combination of twelve indicators comprising eleven leading indicators and a coincident indicator. The eleven leading indicators are total imports, money supply, electric energy consumption, hotel occupancy rate, tourist arrivals, number of new business incorporations, terms of trade index, exchange rate, Wholesale Price Index, Consumer Price Index, and composite stock price index. These indicators were identified as leading indicators for the industry and services sector. Meanwhile, palay and corn forecast is used as the coincident indicator for the agriculture sector. The different indicators undergo seasonal adjustment using X11 ARIMA software and correlation and regression analysis for the computation of the index. The composite index is then computed as the sum of the weighted indexes of industry and services sector and the agriculture sector.

The formulation of a conceptual framework for the development of the Philippine Tourism Satellite Account has been started by the NSCB. The satellite account will be linked with the framework of the Philippine system of national accounts. It is envisioned to facilitate the examination of tourism in the context of macroeconomic accounts and analysis. Specifically, the satellite accounts will provide an indicator of the tourism sector's contribution to the economy. This indicator is deemed a valuable input in the formulation of policies for improving and enhancing the industry's contribution to the country and the people's welfare. The Department of Tourism, as a direct user of the accounts, provided assistance for this project. The activities being undertaken involve defining the scope and coverage of the satellite accounts and refining the concepts and definitions formulated by both the World Travel and Tourism Council and the World Tourism Organization to develop with a framework suitable to Philippine situation. (For more details on the NSCB activities, contact: Dr. Romulo A. Virola, Secretary General, National Statistical Coordination Board, 104 Sen.Puyat Avenue, Makati City, Philippines. Telefax: (632) 896-1778, Phone: (632) 890-9397, Email: info@nscb.gov.ph).

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SPROCET: A Survey Processing System

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1. Introduction

The use of Lotus Notes at Statistics New Zealand (SNZ) has contributed to a significant shift in organizational capability and performance. We have seen continued gains in collaboration and communication, administrative efficiency, access to information, and a more rapid development and deployment of systems through the use of this technology. It has both lead and followed changes in work practices.

Assistance from the Australian Bureau of Statistics (ABS), which shared applications (templates) and expertise, was invaluable in achieving early gains from the introduction of Notes.

Lotus Notes is SNZ's GroupWare product. However, we—along with the ABS—have challenged the traditional boundaries of a GroupWare product and used Notes to streamline many of our business operations.

This paper gives an outline of a key application, the Survey Processing Template (SPROCET), of Notes to our business processes.

2. SPROCET

SPROCET is a re-usable survey processing system built using Lotus Notes. This is SNZ's response to the challenges and costs associated with developing and operating many different business survey systems.

The SPROCET project aims at achieving business benefits for the operational processing of surveys. It is the result of a unique blend of business pressures, technological expertise, and a driving vision for change. This approach is as much a function of SNZ's small size and limited resource base as our unbridled passion for pioneering and "having a go" at new ideas.

With the size and scope of a generalized system thought to be beyond our resourcing ability, and our own experience with complete customization of each survey proving too expensive in terms of time, resources, and lost opportunities, we have found that SPROCET has offered SNZ another solution.

SPROCET is a survey application template that can be copied and modified for each specific survey processing system. The aim has been to retain the best qualities from each survey application template while adding, at a marginal cost, the required survey-specific features.

SPROCET blends standard items, while allowing specific customization and hence flexibility for specific survey circumstances. In doing so SPROCET provides survey managers with the following competitive advantages:

- Allows flexibility at a marginal cost;
- Allows opportunities and new ideas to be tested and improved upon with each iterative release of the latest template;
- Encourages the spread of best practice through the re-use of common and standard templates across different surveys; and
- Enables survey managers to gain leverage from the successes of other areas, while retaining their own flexibility.

SPROCET applications follow an evolutionary prototyping development process. This approach emphasizes the quick delivery of a prototype system to test if it meets user expectations. As the system is developed in increments, it can be readily modified in response to feedback from the survey sections.

SPROCET uses Lotus Notes software as the application development language and data storage environment. SNZ has successfully

expanded the role of this GroupWare software into the area of transaction processing, as required for the operation of business surveys.

The first proof of concept system, limited to low volumes and indicator functionality, was built and evaluated in 1996. This small prototype successfully extended the proof of concept to simulate a medium-sized survey system. Since then each successive implementation of SPROCET has increased the functionality offered and the survey complexity covered, as well as meeting and beating the technological risks associated with the new environment.

Our most ambitious development is for the Annual Enterprise Survey (AES), a multisample economic survey of 300,000 respondents. The AES is the largest and most complex business survey we run. This survey uses approximately 40 different questionnaires and collects 500 separate data items. The AES also makes extensive use of taxation data, as well as direct survey data, and runs two independent samples of questions. It is our most sophisticated and innovative survey in terms of respondent management practices and data capture methodologies. The first stage of this development went live in August 1999. Additional functionality is being delivered progressively over the first quarter of 2000.

The latest SPROCET version is now seen as key to further improving the business performance and contains considerable functionality in the following areas:

- Survey management: sample maintenance, questionnaire dispatch, sample monitoring, survey period rollover, system tuning, and metadata.
- Information about survey units: views (online dynamic reports) of survey units details, views relevant to each survey phase, and response rates.
- Survey answers: online data capture and edit functionality, views (reports) of up-to-date counts throughout the processing life cycle.
- Macro-editing: a drill-down approach for identifying outliers, and contributors to change, and interactive correction of respondent data.
- Survey results: views of weighted or unweighted aggregate survey results and sample errors.
- Data export: data sent to external files for further analysis or dissemination.

SPROCET has met a number of the initial objectives that we considered important in developing new business survey processing systems:

- Exploits new data capture methodologies and technologies;
- Manages an increasing use of administrative data, as well as data from other collections;
- Reflects the shift toward an increased use of macro versus unit record or micro-level editing;
- Reduces development effort by 40-60 percent, thus increasing speed of applications and reducing cost;
- Provides consistent, easy-to-use survey processing systems with the consequent benefit of the easy rotation of processing staff between surveys;
- Provides robust survey processing ;
- Increases functionality offered to survey processing sections;
- Integrates with other statistical infrastructure such as the Business Register;
- Integrates with the analytical functions associated with each survey collection;
- Expands best practice to other surveys;
- Encourages innovation and experimentation.

3. Concluding Remarks

The use of the Lotus Notes software as the applications environment has been a significant technological factor in the success of the SPROCET system. The SPROCET templates have demonstrated the transaction-processing capability of Notes. In addition much of the business functionality provided, such as dynamic updating of results and integration of processes and data, are modules that have been built using Notes.

The following summarizes the benefits that SPROCET has delivered to SNZ:

- Spreads best practice;
- Gains in timeliness;
- Increases co-operation between input and output divisions;
- Provides flexibility in methods of data supply;
- Automates respondent contact management;
- Creates operational efficiencies;
- Reduces the level of staff training and eases the use of the system; and
- Provides innovation and low-cost experimentation.

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Survey Answering Guide Expert (SAGE) System

Wu Wei Lin
Singapore Department of Statistics
100 High Street #05-01, The Treasury, Singapore 179434

Background

The Survey Answering Guide Expert (SAGE) is a generalized survey system that allows end users to design, develop, and maintain survey systems. The SAGE system uses intelligence systems technology, form processing technology, and Intelligent Character Recognition technology in the system design. It also supports multiple modes of data collection via mail (paper), fax, and the Internet.

Major Components/Modules of SAGE

The following are the major components/modules of the SAGE system:

1. Smart Form Designer (SFD)—designs smart forms with embedded validation knowledge that can be distributed by the various delivery modes defined by SAGE.
2. Multi-Mode Data Collection System—allows survey returns to be received via
   - Mail
   - Fax
   - Internet
3. Database Support Module (DSM)—defines and sets up survey databases. This module also allows for data transfers into and out of the survey databases.
4. Security Manager (SM)—defines access controls and ensures the integrity of the system.
5. Active Survey Management System (ASMS)—manages and co-ordinates the execution of the entire survey process. The main function of the ASMS is to link-up the various components of the SAGE System to facilitate a collaborative and an efficient work flow for users to perform survey and management operations.
6. Verification Repair Module (VRM)—embeds within it the Intelligent Character Recognition (ICR) technology. This allows it to automatically recognize the analogue contents of scanned or faxed forms, thereby reducing the need to enter data manually. During the data capturing process, the module also provides for the verification and repair of recognised results.

Setting up Survey Systems under SAGE

Survey areas use the SFD to assist them in designing questionnaires. The SFD will then generate paper questionnaires suitable for ICR, HTML, and Java scripts for the Internet. It also generates scripts for setting up the working databases. These databases then feed into the DSM, SM, and ASMS for setting up the survey databases on the different servers. Figure 1 summarizes the work flow of the survey process.

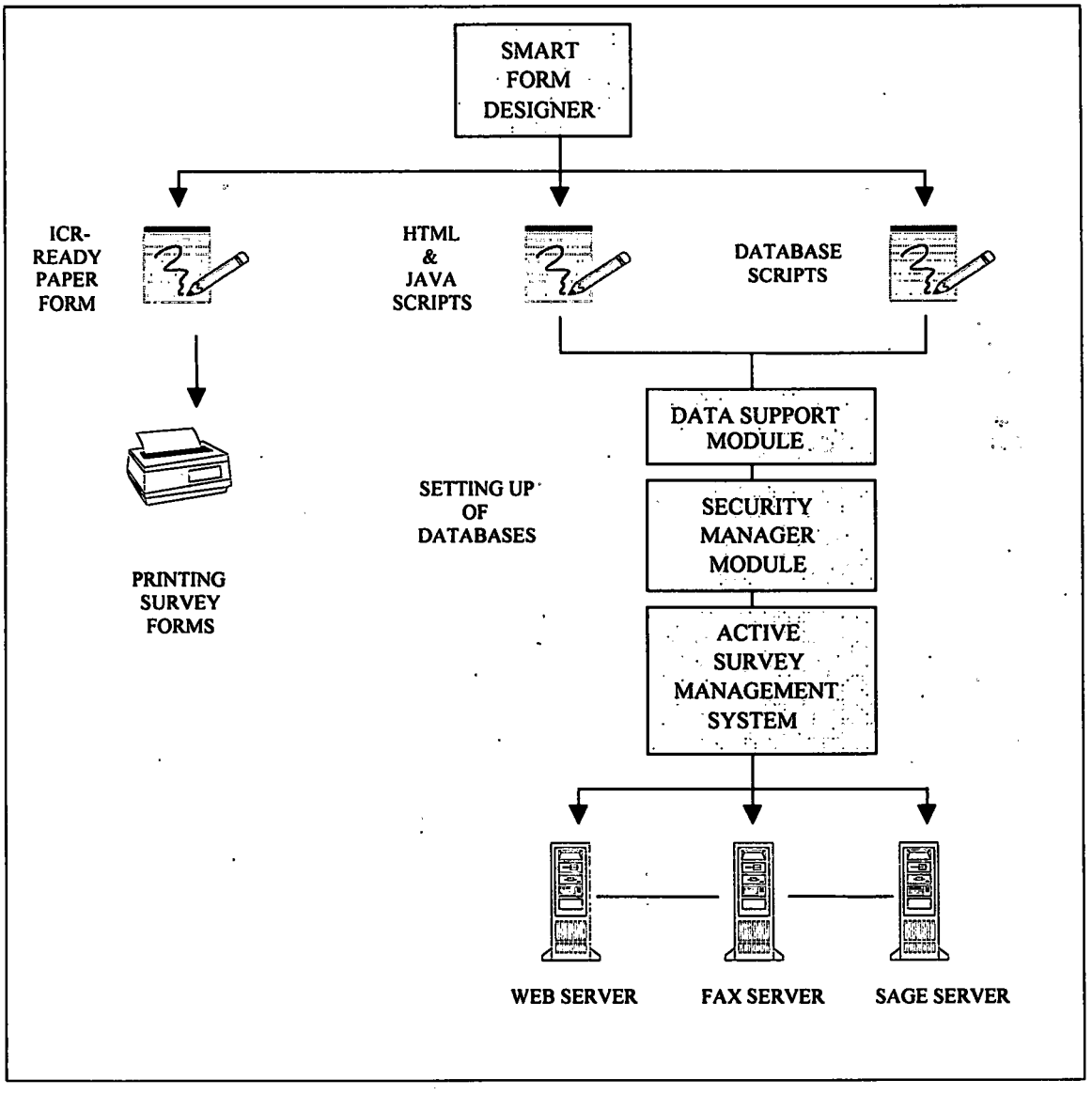
Multiple Modes of Survey Submission and Data Processing

As shown in Figure 2, SAGE is capable of receiving and processing survey data that is received via mail, fax, or the Internet. Returns received via mail can be processed using the conventional data entry method or scanned for ICR processing where handwritten inputs are converted into digital inputs to reduce the need of manual data entry. The VRM handles the ICR processing of forms. Returns received via fax are automatically converted into digital images for ICR processing. Similarly, the VRM will handle the data processing part. Returns received via the Internet are captured directly into the database. The ASMS is used to track and monitor various modes of survey submission and data processing status.

Active Survey Management System (ASMS)

The ASMS under SAGE is used to manage and coordinate the execution of entire survey processes. It integrates various components of the

Figure 1. Work flow of survey process



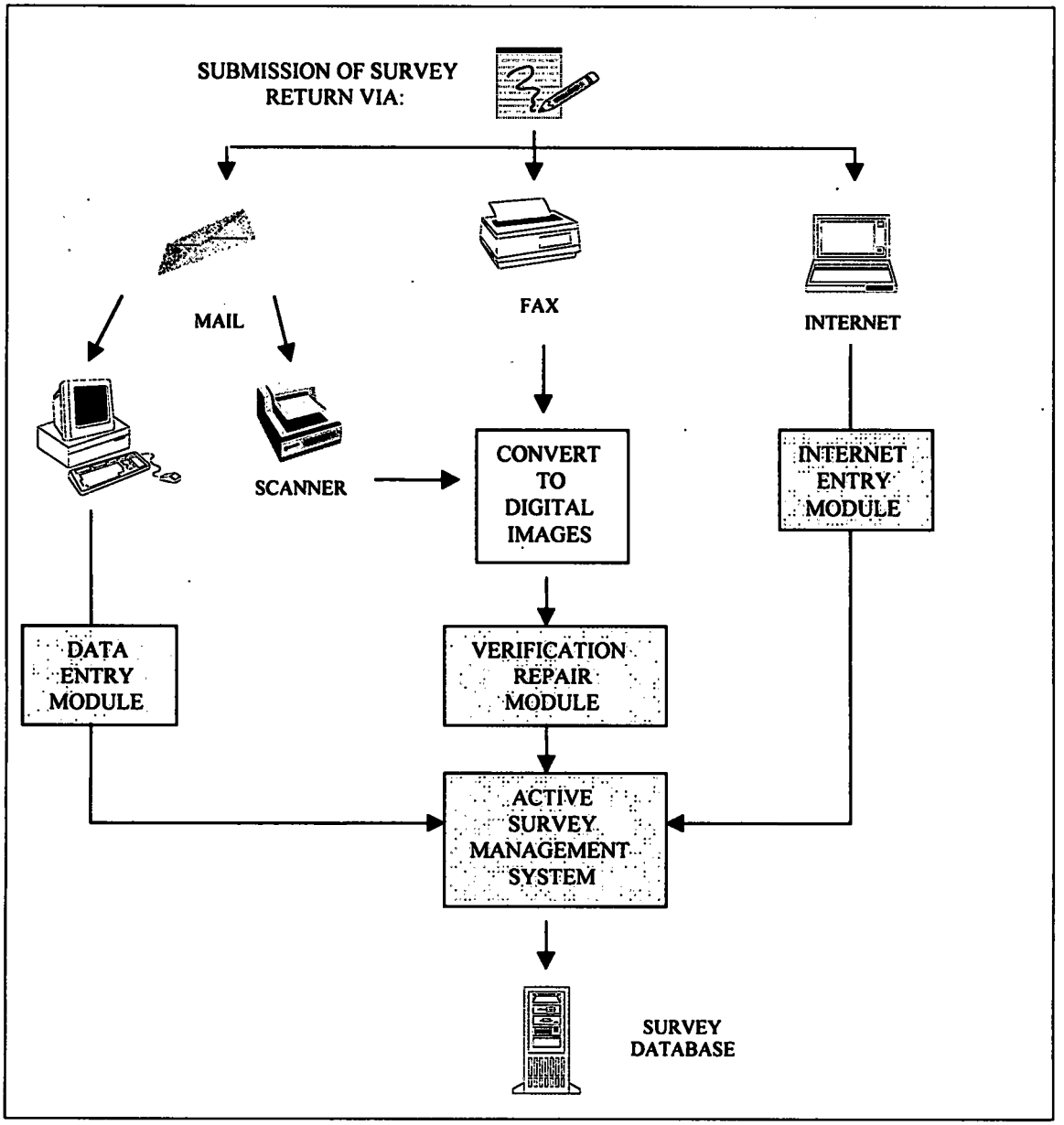
SAGE system to facilitate a collaborative and efficient work flow for users to perform survey control and management duties. Specifically, it allows for tracking and updating of survey returns from various modes of submission, as well as providing survey and management reporting capability. The ASMS is also responsible for the distribution of editing jobs to various users.

The ASMS feature allows users to track and update (batch update) survey status, survey response information, and sample particulars. The user can also perform survey tracking using different criteria. Figure 3 is a sample screen shot of the ASMS.

Users can perform preprogrammed queries on survey status, return type, editor ID, date of receipt of forms, and other variables. The ASMS also allows users to perform customised queries using the Oracle browser and SQL language.

Survey progress reports can be routinely generated by the system. Because of its ability to track the unit status through the survey process, the ASMS module can generate reminder letters for outstanding questionnaires. The ASMS uses a template system in storing the contents of reminder letters. This design ensures that the contents of the reminder letters can be easily modified for use by different surveys.

Figure 2. Survey submission process



The ASMS is also responsible for the distribution of survey returns to editors. Survey returns received from the various modes are systematically distributed to the respective survey teams. This feature also allows users to select, assign, and transfer survey returns to different editors from the job queue. Manual exchange of information is thus kept to a minimum.

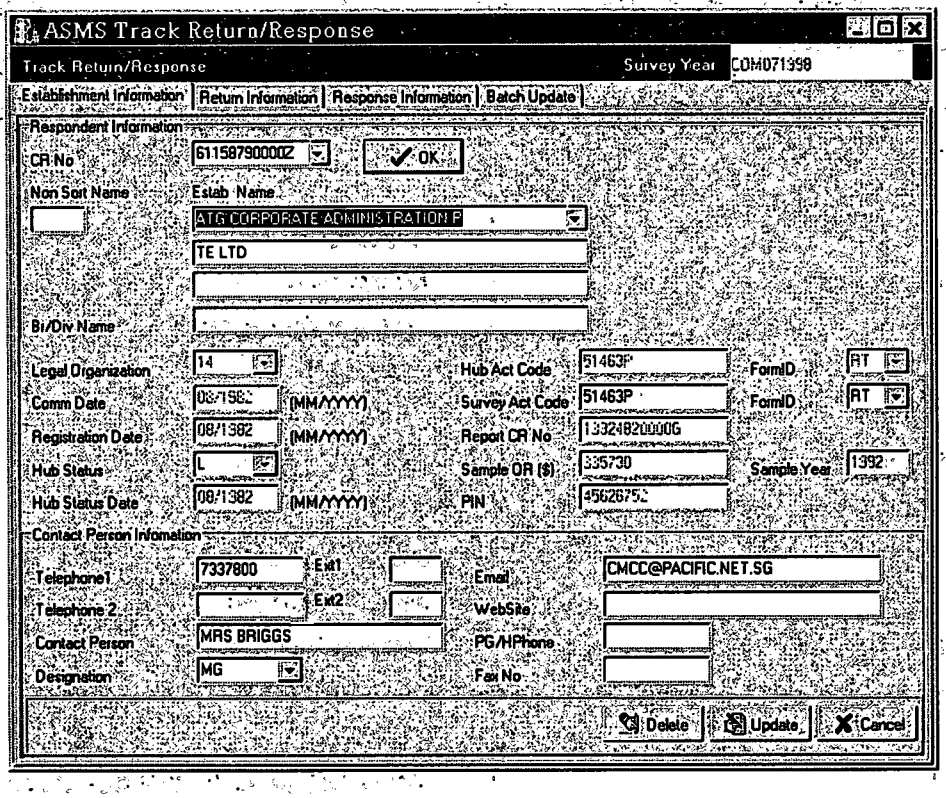
Finally, to protect the integrity of information in the survey processes, users are required to log in with a user ID and password, which are created using the ASMS module. The system would then determine the level of access granted to each user of the system.

Technical Features of ASMS

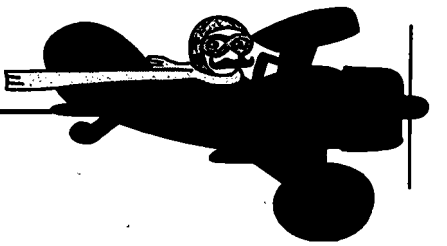
The ASMS adopts a client-server architecture with clients operating on the Windows 95 platform and the server on a Window NT server. The following is the recommended hardware configuration for ASMS:

- Pentium II MMX 300MHz
- 64 MB RAM
- 2 GB Hard Disk
- 17" Monitor
- Windows 95 and NT Workstation V4.0

Figure 3. ASMS sample screen shot



Welcome New Members!



We are very pleased to welcome the following new members who joined the Association between June 1999 and April 2000.

Algeria
- MALIKA ARDOUN

Argentina
- ALFREDO BARONIO
- VERONICA BERITICH
- MARTA MARIA RUGGIERI
- LILIANA CARMEN SEVERINO
- TERASITA E. TERAN

Australia
- JUSTINE GIBBINGS
- STEPHEN HORN

Bahamas
- LEONA WILSON
- CYPREANNA WINTERS

Belgium
- CEDRIC DAVISTER

Benin
- DAOUDA ALIOU
- DJIMA MOUSSILIOU MOUSTAPHA
- IMOURANA AMAO SALAMI

Bhutan
- YESHEY DORJI

Botswana
- VIJAI KUMAR DWIVEDI

Brazil
- ALICIA BERKOVICH
- EULALIA A.C. DE ARAUJO
- FERNANDO MOURA
- DENISE SILVA

Burundi
- DEOGRATIAS BUZINGO

Cambodia
- KHEAM THEY
- MATHEW VARGHESE

Cameroon
- MARTIN MBA
- CLAUDE TCHAMADA

Canada
- JULES DE TIBEIRO
- JACK G. GAMBINO
- MICHAEL HIDIROGLOU
- DON A. ROYCE

Cape Verde
- MARIA DE LURDES FERNANDES LOPES
- FRANCISCO FERNANDES TAVARES

Central African Republic
- LEOPOLD MBOLI-FATRAN
- ALPHONSE YANGO

Chad
- DJEBOLO BERAL SERONGARTI

Chile
- GIONA ICAZA
- JOHN L. SWOPE

Croatia
- DRAZENGA CIZMIC
- VESNA HIJUZ DOBRIC
- SRDAN DUMICIC

Democratic Republic of Congo
- BIERD
- HENRI ANTOINE BOSONGAY MANYA
- MUNANDI MUKUNDA
- MUAMBAYI MULAMBA
- KAROMBO MULENDA
- BIN SELEMANI MUSENENA

Equatorial Guinea

ALENE JOSE AWONG

Estonia

ANNE TIHASTE

Fiji

PARUL DEOKI

Finland

PAULA LAMBERG

ANTERO MALIN

KAISU SAARNIO

France

MICHEL EURIAT

FRANCOIS FABRE

PATRICK FESTY

DOMINIQUE FRANCOZ

CHRISTIAN HESSE

BERTRAND KAUFFMANN

LOUIS LAMAL

CHRISTINE MARC

ANNE MORIN

ANNE RUIZ-GAZEN

PIERRE TRAISSAC

FRANCOIS VINOT

ISABELLE WIDMER

Gambia

LAMIN FATTY

Germany

WALTER KRUG

Greece

STELIOS PSARAKIS

COSTAS ZAFIROPOULOS

Guinea

FATOUMATA DANFACA

Hungary

EDINA PAL

STEFANIA TUU

India

R. HAVI

RAHUL MUKERJEE

S.A. PARANJAPE

Indonesia

IWAN ARIAWAN

EVY JULIANTINI

INDAG TRIHANDINI

Iran

HAMIDREZA NAVVABPOUR

Italy

N. CARLO LAURO

PAUL N'GOMA-KIMBATSA

Ivory Coast

DIDIER NOUKPO

LAMINE SIAN

ALASSANE SOGODOGO

Jamaica

LAVERN BROWN

ARLENE SCARLETT

Jordan

HUSSEIN SHAKHATREH

Kenya

SAMMY LIVINGSTONE OYOMBE

Korea Republic

JEAKOB RYU

Kuwait

HAJJ BASIMA

Latvia

ARTURS BERZINS

JANA KRIKE

ANIS LEBEDEVS

VALTERS ZILE

Lebanon

NAJWA YAACOUB

Liberia

DANIEL KINGSLEY

Lithuania

D. NORKOVICIENE

Luxembourg

WERNER GRUNEWALD

JEAN LANGERS

PHOTIS NANOPOULOS

Macedonia

SVETLANA ANTONOVSKA

BLAGICA NOVKOVSKA

Madagascar

TIARAY RAZAFIMANANTENA

Malaysia

AZILAWATI MASRI

KATE VAN

Mali

JEAN-PIERRE BACHELART

PAUL HENRI WIRANKOSKI

Mauritania

HEDY LORRAINE BROOME

OULD BEICH DAHMAN

ABDERRAHMANE OULD EL MAHJOUB TALEB

Mongolia

M. SARANTUYA

Mozambique

CRISTOYAO MUAHIO

Netherlands

J.J.A. MOORS

New Caledonia

PARRY GARTH

New Zealand

PETER MCMILLEN

Nigeria

IBRAHIM BAWA GWANI

FOLAKE OLUTOSIN LADOKUN

Pakistan

WALID AHMAD

MUHAMMAD ASHRAF

MULLAH AMIR GUL

SALEHA NAGHMI HABIBULLAH

FAIZA TABASSUM

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HIDA O. BALLESPIN

CARMELITA ERICTA

CHITA P. EVARDONE

WILMA MOLANO

FRANCISCO N. DE LOS REYES

MAGDALENA SERQUENA

Philippines (continued)

ANA MARIA L. TABUNDA

CYNTHIA VALESTEROS

ROMULO VIROLA

Poland

ELZBIETA GOLATA

ALEKSANDRA WITKOWSKA

Romania

ANKA BREZEANU STECULESCU

MONICA DUMITRESCU

Rwanda

THEOPHILE NTAWUKULIRYAYO

South Africa

MARTIN WITTENBERG

Spain

JESUS SANTOS

Sudan

JULIUS SEBIT DANIEL

Swaziland

EUGENE ZWANE

Sweden

KNUT HAKAN MEDIN

Thailand

Noppadon Kannika

Trinidad and Tobago

MATTHEW RAMSAROOP

Turkey

ZERRIN ASAN

Ukraine

OLEKSANDR CHERNYAK

United States

ANTHONY AN

LAWRENCE COX

MARITZA DOWLING

LAWRENCE ERNST

MARTHA S. FARRAR

TIMOTHY G. GREGOIRE

ARNOLD LEVINSON

MARILYN MCMILLEN

SUSAN D. WILEY

Uruguay

MONICA MARIA BELTRAMI DE CARTER

Venezuela

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Vietnam

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Finland

STATISTICS FINLAND

Ivory Coast

PLAN INDUSTRIE

Portugal

INSTITUTO NACIONAL DE ESTATISTICA

United States

NATIONAL CENTER FOR EDUCATION STATISTICS

Announcements

Survey Methodology Celebrates 25 Years

With its December 1999 issue, *Survey Methodology* completes 25 years of publication. To mark this occasion we have produced a special edition. In it are invited articles from some prominent survey statisticians who have written on a number of evolving methodological developments of interest to survey statisticians everywhere. Due to the overwhelming response from contributors our next issue for June 2000 will continue this theme.

Survey Methodology publishes articles dealing with various aspects of statistical development relevant to a statistical agency. In addition to general articles, *SM* contains special sections, which allow a more concentrated treatment of new techniques and experiences for selected topics.

The Journal is published biannually. All articles are refereed and appear in both English and French. Authors are invited to submit papers in either language. Four copies should be sent to Dr. M.P. Singh, Editor, *Survey Methodology*, Methodology Branch, Statistics Canada, Ottawa, Ontario, Canada K1A 0T6 (e-mail: singhmp@statcan.ca). Submissions on aspects of statistical development and applications in surveys are always welcome. Contact the Editor for more information or with other inquiries.

Members of the International Association of Survey Statisticians are encouraged to subscribe to *Survey Methodology* through their annual membership renewal.

Call for Invited Papers

Statistics Sweden Announces
the 4th Conference on Methodological Issues
in Official Statistics
October 12-13, 2000
at Garnisonen, Karlavägen 100,
Stockholm, Sweden

Sponsored by:

- International Association of Survey Statisticians
- Swedish Statistical Association, Survey Methodology Section

In 1995, Statistics Sweden began the first in series of conferences on the development of methods in official statistics. Previous conferences emphasised such topics as harmonization of European statistics, register statistics, and quality issues of different kinds. This year's conference will continue to be a discussion forum for all methodological issues that are related to official statistics.

The conference is tailored to the interests and needs of a number of special groups. Among those are the agencies with responsibility for production and dissemination of official statistics, including Statistics Sweden. The conference will provide a forum for the discussion of methodological and quality issues. Thus the conference contributes to the dialog between scientific researchers, the producers of statistics, respondents, users, and other interested parties.

An important goal is to provide the means for professional contact between different types of statistical practitioners: to give statistics producers, clients, and users an opportunity to exchange ideas and discuss methodological questions that concern the content, reliability, and availability of statistics in different fields.

The conference will be held in English except for a few papers that will be presented in Swedish. It contains both thematic sessions and open sessions for thematically varied contributions. Papers are

delivered in talks at the conference and will appear in a proceedings volume published after the conference. We encourage colleagues to contribute papers on the themes listed on the following page.

Organizing Committee

Anders Christianson, Statistics Sweden, chair
Ann-Marie Flygare, Statistics Sweden
Ove Frank, Stockholm University
Mats Haglund, Statistics Sweden
Peter Lundquist, Statistics Sweden
Lars-Erik Öller, Swedish Institute for Economic Analysis
Anna-Lena Carlström, Statistics Sweden
Katarina Klingberg, Statistics Sweden

Theme Topics (preliminary):

1. The Role of Statistics in a Democratic Society.
2. Recruiting and Training Statisticians for Official Statistics Service
3. Public Opinion Polls
4. Drug Abuse Survey Methodology
5. Satellite Measurements for Land Use Estimation
6. The Seasonal Component in Time Series Analysis.
7. Recall Errors in Retrospective Surveys
8. Statistical Issues in the Development of Indices.
9. International Comparisons in the Educational Field

Those who have experience in methodological or research work in the fields mentioned above or related topics, are encouraged to submit papers on the topics above or on related topics. Presentations should take no more than 30 minutes. Send an abstract of one to two pages to:
Katarina Klingberg
SCB MET
Box 24 300
S-104 51 Stockholm
Phone +46 8 5069 42 82
Fax +46 8 5069 45 99
E-mail: katarina.klingberg@scb.se

The deadline for receipt of abstracts is June 5, 2000. The session titles are preliminary and will be revised to reflect the papers chosen for presentation. Miscellaneous papers will be presented at the open sessions.

A special announcement for the open sessions will appear when the invited papers' program has been decided upon in June. The open sessions will provide a forum for papers that do not fit in with the topics covered by the thematic sessions.

And of course, one can participate in the conference without contributing a paper. Registration instructions, the preliminary program, conference fees, and other practical information will be sent out in July 2000. For any question regarding the scientific content of the conference, please approach the organizing committee chair by e-mail at anders.christianson@scb.se!

Reserve October 12-13, 2000 - now!

Workshop on Labor Force Surveys in Libourne (France) at the CEFIL, the IASS Secretariat

This workshop initially scheduled for July 24-28, 2000 (cf. *The Survey Statistician*, No. 41) has been postponed and will take place during the first week of April 2001.

Contact: michel.boeda@insee.fr.

Statistics Canada International Methodology Symposium

Statistics Canada will be holding its seventeenth International Methodology Symposium in May 2001 on the subject of data quality in surveys. As the planning proceeds, further details about this symposium will be posted at Statistics Canada's web site: http://www.statcan.ca/english/services/smnrs.htm.

For more information, please contact Simon Cheung (simon.cheung@statcan.ca).

Cochran-Hansen Prize

Competition for Young Survey Statisticians from Developing and Transition Countries

2001

In celebration of its 25th anniversary, the International Association of Survey Statisticians has established the Cochran-Hansen Prize to be awarded to the best paper on **survey research method** submitted by a young statistician from a Developing or Transition Country.

The paper will be presented at the 53rd Session of the International Statistical Institute, to be held in Seoul, Korea, from August 22-29, 2001.

Participation in the competition for the Cochran-Hansen Prize is open to nationals of Developing or Transition Countries who are living in such countries and who were **born in 1969 or later.*** Winners of an ISI Jan Tinbergen Award are not eligible for the competition.

Papers submitted must be unpublished original works. They may include materials from the participants' university thesis. They should be in either English or French. The papers should be submitted to the IASS Secretariat at the address below, to arrive by **November 30, 2000**. Each submission should be accompanied by a cover letter that gives the participant's year of birth, nationality, and country of residence.

The papers submitted will be examined by the Cochran-Hansen Prize Committee. The decision of the Committee is final.

The author of the winning paper will receive the Cochran-Hansen Prize in the form of books and journal subscriptions to the value of about 500 EUROS and will be invited to present the paper at the Seoul Session of the ISI with all expenses paid (i.e., round trip airfare between place of residence and Seoul and a lump sum to cover living expenses).

For further information, please write to:

Madame Claude Olivier
IASS Secretariat
International Association of Survey Statisticians
CEFIL-INSEE, 3 rue de la Cité, 33500 Libourne
France
Tel: +33 5 57 55 56 17
Fax: +33 5 57 55 56 20
E-mail: Claude.olivier@insee.fr

* In special circumstances, consideration will be given to applicants born before this date, where the applicants have had a maximum of 5 years professional experience working in statistics. Enquiries in relation to this should be sent to Susan Linacre, Methodology and Quality Directorate, Office for National Statistics, 1 Drummond Gate, London SW1V 2QQ or E-mail: susan.linacre@ons.gov.uk.

IASS Program for the 2001 ISI Meetings
by David A. Binder

The planning for the IASS Program for the 2001 meetings in Seoul has been underway since 1998 when I assembled a "virtual" committee of 39 members. Through 1998 and up until the Helsinki meetings in 1999, we conducted all our business by email.

Our first order of business was to collect a list of possible topics for the invited program. Through suggestions from the committee members and other IASS members we had over 90 possible topics. These were then priorized for taking to the ISI Program Coordinating Committee (ISIPCC) in Helsinki chaired by Richard Gill.

Those committee members who were at the Helsinki meetings met to finalize our priorities, since it seemed that we may get only eight or nine invited paper slots in the program. However, after some discussion with the ISIPCC, we ended up with eleven meetings where the IASS is the principle organizer. There are two other meetings which we are cosponsoring, where the IAOS is taking on the main organizing role. The reason for our success here was due to the fact that we were prepared in advance, as well as the large number of members in the IASS and our consistently strong attendance at the ISI meetings.

The final list of invited paper meetings sponsored by the IASS is as follows. I include the names of the meeting organisers.

IASS as sole organiser

The Role of Survey Sampling in the 21st Century
John Cornish (New Zealand)

Response Errors
Cathryn S. Dippo (USA)
Standardised Survey Interviewing: Is it A Good Thing?
Barbara Bailar (USA)

Linked Employer-Employee Data
Cynthia Z. F. Clark (USA)

Multi-level Survey Designs and Analysis
Chris Skinner (UK)

Price/Production Indices
Dennis Trewin (Australia)

Edit and Imputation Techniques
John Kovar (Canada)

Joint Sessions being organised by IASS

With IAOS: Internet Data Collection
Warren Mitofsky (USA)

With IAOS: Disclosure Control and Data Access
Luigi Biggeri (Italy)

With ISI/Korea: Multiple Frame Surveys
Alvaro Gonzalez-Villalobos (FAO)

With IAOS and ISI/Eurostat: Combining Data from Different Sources
Tim Holt (UK)

Joint Sessions being organised by IAOS

Quality issues in statistics
Gordon Brackstone (Canada)

Measurement of E-commerce
Paul Cheung (Singapore)

Our next challenge is to find suitable invited papers and discussants for the meetings. This process has already begun. We are particularly interested in getting a good balance of geography (including transition and developing countries), gender, and age, if possible.

I would like to thank all those who have helped put together this exciting program. Now I hope you will be able to attend these meetings to ensure their success.

In the meantime, Danny Pfeffermann has been selected the Program Chair for the 2003 meetings to be held in Berlin. Please give him your support.

Planning for IASS Short Courses at the 2001 ISI Meetings
by Dan Kasprzyk

The International Association of Survey Statisticians has begun to develop plans for a program of short courses to take place before the 53rd Session of the International Statistical Institute which will be held in Seoul, Korea on August 22-29, 2001. The courses, led by international experts in their fields, will be useful to practitioners, researchers, and students in statistics and survey methodology. All courses will be presented in English and participants should have the ability to work in this language.

Courses tentatively scheduled to take place during the period of August 18 through August 22, 2001 include (specific times and dates have not been set yet):

Workshop on Survey Sampling
presented by:
Graham Kalton, Westat, Rockville, Maryland, U.S.A.
Colm O'Muircheartaigh, National Opinion Research Center and Harris School of Public Policy Studies, University of Chicago, Illinois, U.S.A.

Variance Estimation in Complex Surveys
presented by:
Wayne Fuller, Iowa State University, Ames, Iowa, U.S.A.
Kirk Wolter, National Opinion Research Center, Chicago, Illinois, U.S.A.
F. Jay Breidt, Iowa State University, Ames, Iowa, U.S.A.

Introduction to Small Area Estimation
presented by:
Jon N.K.Rao, Carleton University, Ottawa, Canada

Nonsampling Error Research
presented by:
Clyde Tucker, U.S. Bureau of Labor Statistics, Washington, D.C., U.S.A.

Editing and Imputation of Survey Data
presented by:
John Kovar, Statistics Canada, Ottawa, Canada
Eric Rancourt, Statistics Canada, Ottawa, Canada

The courses on sampling and variance estimation are aimed especially at statisticians working with surveys in developing countries, but past experience has shown that the courses have been very helpful to those from developed countries as well. The small area estimation course will provide an introduction to the methods of developing small area statistics; the nonsampling error course will focus on the mechanics and practice of research on nonsampling error, illustrated by current research studies at the U.S. Bureau of Labor statistics, while the editing and imputation course will provide an overview of methods in the field, illustrated by practical examples. More specific information about the dates of the courses will be available in the next issue of *The Survey Statistician*. For additional information, contact IASS Scientific Secretary, Dan Kasprzyk (daniel_kasprzyk@ed.gov).

International Flavors

This is a new section in The Survey Statistician. Please give us your impressions about its content, and help us make it more varied and original through your submissions (e-mail: Mohadjl1@Westat.com).

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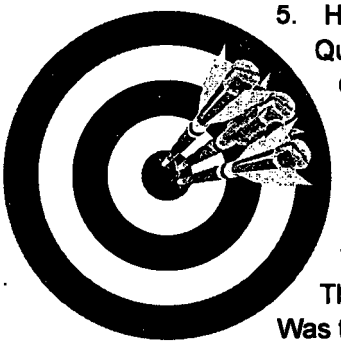
The following poem was originally published in The American Statistician, December 1959. It is reproduced below with the permission of The American Statistician, and thanks are due to Graham Kalton who suggested it for this section.

Hiawatha Designs an Experiment
by Maurice G Kendall

1. Hiawatha, mighty hunter
   He could shoot ten arrows upwards
   Shoot them with such strength and swiftness
   That the last had left the bowstring
   Ere the first to earth descended.
   This was commonly regarded
   As a feat of skill and cunning.

2. One or two sarcastic spirits
   Pointed out to him, however,
   That it might be much more useful
   If he sometimes hit the target.
   Why not shoot a little straighter
   And employ a small sample?



3. Hiawatha, who at college
   Majored in applied statistics
   Consequently felt entitled
   To instruct his fellow men on
   Any subject whatsoever,
   Waxed exceedingly indignant
   Talked about the law of error,
   Talked about truncated normals,
   Talked of loss of information,
   Talked about his lack of bias
   Pointed out that in the long run
   Independent observations
   Even though they missed the target
   Had an average point of impact
   Very near the spot he aimed at
   (With the possible exception
   Of a set of measure zero.)

4. This, they said, was rather doubtful.
   Anyway, it didn't matter
   What resulted in the long run;
   Either he must hit the target
   Much more often than at present
   Or himself would have to pay for
   All the arrows that he wasted.

5. Hiawatha, in a temper
   Quoted parts of R A Fisher
   Quoted Yates and quoted Finney
   Quoted yards of Oscar Kempthorne
   Quoted reams of Cox and Cochran
   Quoted Anderson and Bancroft
   Practically in extenso
   Trying to impress upon them
   That what actually mattered
   Was to estimate the error.

6. One or two of them admitted
   Such a thing might have its uses
   Still, they said, he might do better
   If he shot a little straighter.

7. Hiawatha, to convince them
   Organized a shooting contest
   Laid out in the proper manner
   Of designs experimental
   Recommended in the textbooks
   (Mainly used for tasting tea, but
   Sometimes used in other cases)
   Randomized his shooting order
   In factorial arrangements
   Used in the theory of Galois
   Fields of ideal polynomials
   Got a nicely balanced layout
   And successfully confounded
~~~~~~~~~~~~~~~~~

Second-order interactions.

8. All the other tribal marksmen
Ignorant, benighted creatures,
Of experimental set-ups
Spent their time of preparation
Putting in a lot of practice
Merely shooting at a target.

9. Thus it happened in the contest
That their scores were most impressive
With one solitary exception
This (I hate to have to say it)
Was the score of Hiawatha,
Who, as usual, shot his arrows
Shot them with great strength and swiftness
Managing to be unbiased
Not, however, with his salvo
Managing to hit the target.

10. There, they said to Hiawatha,
That is what we all expected.

11. Hiawatha, nothing daunted,
Called for pen and called for paper
Did analyses of variance
Finally produced the figures
Showing beyond peradventure
Everybody else was biased
And the variance components
Did not differ from each other
Or from Hiawatha's
(This last point, one should acknowledge
Might have been much more convincing
If he hadn't been compelled to
Estimate his own component
From experimental plots in
Which the values all were missing.
Still, they didn't understand it
So they couldn't raise objections
This is what so often happens
With analyses of variance).

12. All the same, his fellow tribesmen
Ignorant, benighted heathens,
Took away his bow and arrows,
Said that though my Hiawatha
Was a brilliant statistician
He was useless as a bowman,
As for variance components
Several of the more outspoken
Made primeval observations
Hurtful to the finer feelings
Even of a statistician.

13. In a corner of the forest
Dwells alone my Hiawatha
Permanently cogitating
On the normal law of error
Wondering in idle moments
Whether and increased precision
Might perhaps be rather better
Even at the risk of bias
If thereby one, now and then, could
Register upon the target.

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The text below is an extract from an article written in 1977 by Pierre Delorme (INSEE, France). It was first published in Stateco. Thanks are due to Xavier Charoy who suggested it for our section.

When the statistician, in the privacy of his workshop, compiles, deciphers, decodes, amalgamates, compares, manipulates, rectifies, analyses, synthesizes, improves, corroborates, detects, stratifies, intrapolates, extrapolates, interpolates, retropolates, corrects, balances, adjusts, subtracts, extracts, infers, induces, completes, collates, correlates, estimates, imputes, he is doing what he himself often calls his cooking. This analogy with the gastronomic art, far from being pejorative, shows, on the contrary, the importance of the subtle blending the statistician must undertake in order to achieve his purposes and serve the customer with a dish of acceptable figures.

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You will find our last element of this section on the next page: we hope that all the input ingredients are available to you and will result in a successful output!

FRESH FRUIT-TOPPED CHEESE CAKE

Preheat oven to 325°F.

CRUST

1 cup gingersnap (*) crumbs
(about 12, 2-inch cookies)
2 tablespoons sugar
3 tablespoons butter or
margarine, softened

FILLING

2 packages (8 ounces each)
cream cheese (**), softened
1 cup sugar
3 eggs
½ cup self-rising flour
1 tablespoon lemon juice
grated peel of 1 small lemon
1 cup sour cream (***)

In medium bowl, mix well, crumbs and sugar; with hand, work in butter. Press onto bottom of 9-inch springform pan. Bake 10 minutes. Cool.

In large bowl of electric mixer, beat cream cheese, sugar and eggs until smooth and light. Gently beat in flour, lemon juice and rind until well blended. Stir in sour cream just until blended. Pour over prepared crust.

Bake 45 minutes; turn off oven. Leave in oven 30 minutes longer with door closed. With knife or spatula loosen cake from rim of pan. Cool completely on rack. Remove rim.

TOPPING

assorted fresh fruit
(strawberries, blueberries,
kiwi fruit, raspberries,
peaches, mango,
apricots, etc.)
2 tablespoons apple or
currant jelly, melted.

Arrange fruit over top of cheesecake. Brush with melted jelly to glaze. Refrigerate until serving time.

Best served well chilled.

Makes 12 servings.

Notes:
(*) gingersnap: a thin brittle cookie sweetened with molasses and flavored with ginger.
(**) cream cheese: a mild soft unripened cheese made from whole sweet milk enriched with cream.
(***) sour cream or use whole milk yoghurt.

In Other Journals

Survey Methodology

A Journal Published by Statistics Canada

Contents Volume 25, Number 2, December 1999

Journal of Official Statistics

An International Review Published by Statistics Sweden
http://www.jos.nu/

JOS is a scholarly quarterly that specializes in statistical methodology and applications. Survey methodology and other issues pertinent to the production of statistics at national offices and other statistical organizations are emphasized. All manuscripts are rigorously reviewed by independent referees and members of the Editorial Board.

Contents Volume 15, Number 4, 1999

Contents Volume 16, Number 1, 1999

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Contents Volume 16, Number 1, 1999 (cont.)

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Journal of the Polish Statistical Association

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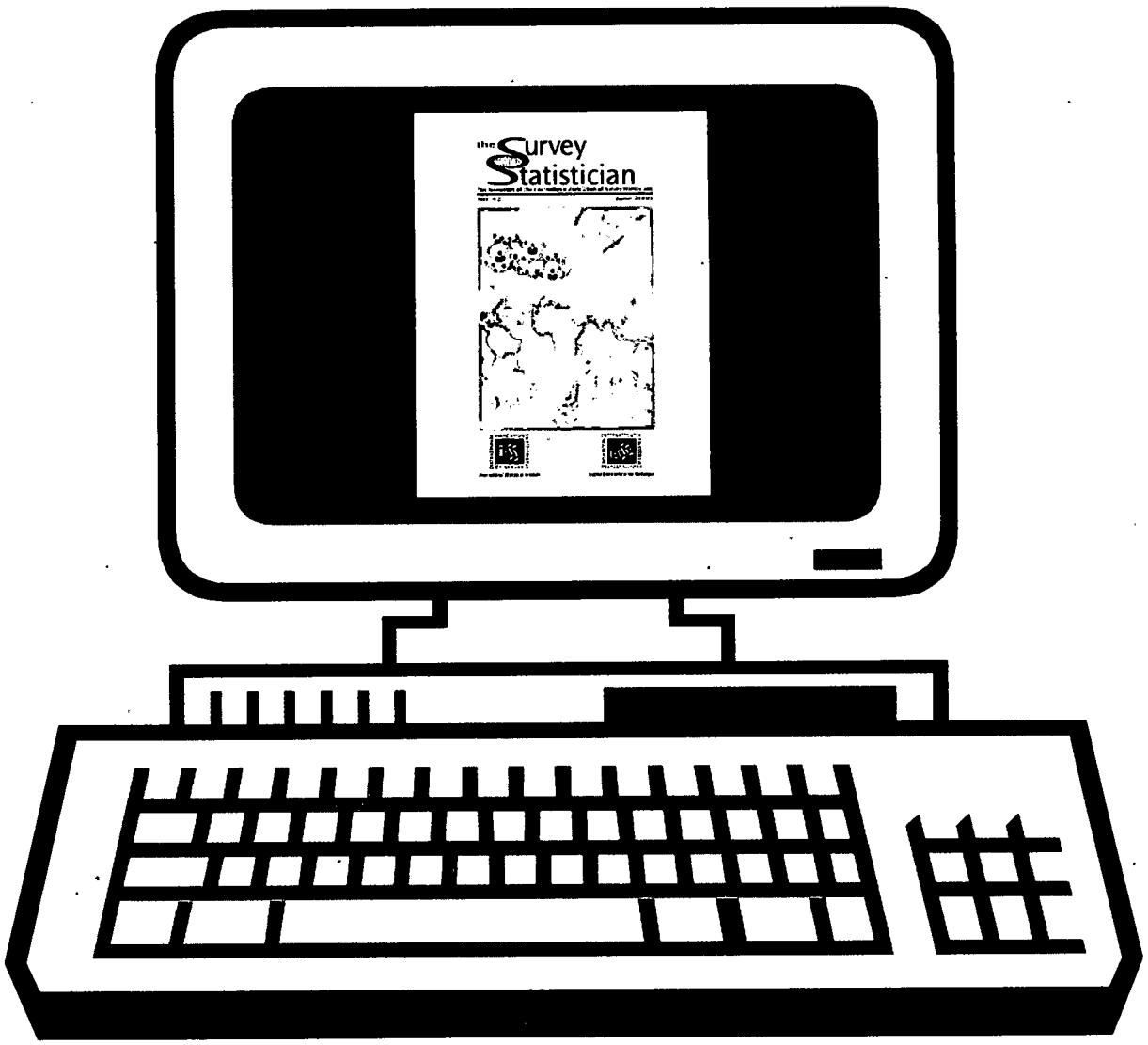

www.cbs.nl/isi/survey.htm