INTERNATIONAL STATISTICAL INSTITUTE

INTERNATIONAL ASSOCIATION OF SURVEY STATISTICIANS

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CONTENTS

1. EDITOR'S LETTER

The Editor and the Editing Board of the Survey Statistician thank Mr. BARABBA, Director of the U.S. Bureau of Census, and his Division for accepting to revise the English version of the journal. They thank too Mr. Edmundo BERUMEN, General Director of Biostatistics, Mexico, who accepted to take part in the realization of a Spanish version of the Survey Statistician.

IASS representatives and members are kindly requested again to provide information and methodological papers liable to interest the readers.

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2. GENERAL INFORMATION

2.1 MEETINGS

2.1.1. SYMPOSIUM ON SURVEY SAMPLING, MAY 7-9, OTTAWA, CANADA

Organized by the Ottawa Chapter of the American Statistical Association, its Survey Methods Research Section, Carleton University and Statistics Canada

Session Titles	Chairperson	Speakers
A. Non-Sampling Errors	D.K. Dale	T. Dalenius, H.O. Hartley, I.P. Fellegi
B. Current Survey Research Activities	D. Dodds	D. Bayless, R. Platek and M.P. Singh, I. Hess B.A. Bailar and G.M. Shapiro
C. Super Population Models	J.N.K. Rao	W.A. Fuller, C.E. Sarndal, A.J. Scott, T.M.F. Smith
D. Variance Estimation	M. Hidiroglou	P.S.R.S. Rao, A.R. Sen, A. Choudhuri, J. Chromy, K.M. Wolter and N. Mansour
E. Workshop on Imputation Techniques	W.G. Madow	B.L. Ford, D. Kleweno and R.D. Tortora, C. Hill, C. Kalton and D. Kasprzyk. Discussant : G. Sande.

Other notable features were

- Opening address was delivered by D. Krewski.

- P.S.R.S. Rao and H.O. Hartley addressed the meeting in memorium of late Professor William G. Cochran.

- Keynote address (chaired by D.F. Bray) was presented by Professor William G. Madow : Statistical Models and Statistics.

- Contributed paper session (chaired by C. Patrick) had following speakers : D. Bellhouse, R.S. Chhikara, C. Campbell, R.P. Gupta, V.K. Srivastava, T.D. Dwivedi, Y.P. Chaubay and S. Bhatnagar, K. Eberhardt, R.W. Andrew and J.T. Godfry, V. Tremblay.

- An International Symposium on Statistics and Related topics organized by the Department of Mathematics, Carleton University, was also concurrently held from May 5-8.

- It is planned to publish the full proceedings of the "Symposium on Survey Sampling" by the Academic Press.

2.1.2. 140th ANNUAL MEETING OF THE AMERICAN STATISTICAL ASSOCIATION, AUGUST 11-14 1980, HOUSTON, USA

At the American Statistical Association's 140th annual meeting in Houston, Texas, August 11-14, 1980, the program of its section on Survey Research Methods was of great interest to the members of IASS. We will present here some specifics of that program.

A. Perspectives on Survey Methods in Developing Countries

a) Recent Trends in Methodology of Demographic Surveys in Developing Countries. A. Adlakha, J. Sullivan & J. Abernathy, U. of North Carolina
b) Survey Design for Control of Measurement Errors in Developing Countries. B.A. Carlson, K.K. Kindel & A.G. Turner, U.S. Census Bureau
c) Some Sample Survey Design Problems in Syria, Nepal, Somalia. J.W. Bergsten, Res. Triangle Inst.
d) Development of the Venezuelan CPI. J.A. Knight, BLS : B.A. de Khan, Corp. Venezolana de Guyana, C.A. Jacobs, BLS : C. Leon, Banco Central de Venezuela
e) Living Standards Surveys in Developing Countries. R. Chander, C. Grootaert & G. Pyatt, World Bank.

B. International Relations in Statistics : Federal Agency Activities

a) Scope and Issues in International Activities of Federal Statistical Agencies. J.T. Sprehe & J.W. Duncan, OFSPS
b) International Statistical Programs of the Census Bureau. R.O. Bartram, U.S. Census Bureau
c) International Statistical Programs in USDA. W. Wigton, USDA
d) International Programs of the Bureau of Labor Statistics. J.T. McCracken & J.A. Knight, BLS.

C. Other topics

- A Fresh Start - Redesign of Household Surveys
- Taxonomy of Survey Errors
- Studies in the Evaluation of the 1977 Economic Censuses
- Sample Surveys and Estimation Techniques
- Improving Collection of Information from Establishments
- Analysis of Categorical Data from Complex Surveys
- Survey Research for Agricultural Statistics
- Perspectives on Census Evaluation
- Variations in Response and Randomized Response Models
- Current Approaches to Finite Population Sampling Theory
- Longitudinal Surveys
- Research to Improve the Quality of Race/Ethnic Data Collected by the Federal Government
- Statistical Design for Program Evaluation
- The CPS Hot Deck : Evaluations and Alternatives
- Sampling in the Absence of a Well-Defined Frame
- International and Other Survey Efforts
- Issues in Adjusting for the Census Undercount
- Survey of Income and Program Participation
- Use and Evolution of Computer-Assisted Telephone Interviewing Systems
- Methods and Uses of Sample Data in Business and Economics
- The Effect of the Question on Survey Responses
- Classification Issues in Measuring the Health Status of Minorities
- Small Area Estimation.

- Survey Research for Health Statistics
- Survey Error Component Estimation
- Nonresponse : Effects and Adjustments
- Diaries as a Data Collection Method
- Statewide Hypertension Surveys
- Survey Sample Design : Multiple Characteristic, Multiple Frame and Multiple Time Period Considerations
- Miscellaneous Topics in Survey Research Methods.

The papers presented will be published in the forthcoming proceedings distributed by the American Statistical Association.

2.1.3. SEMINAR AT LUXEMBURG, APRIL 1980

On April 16-18 1980, at Luxemburg, the Statistical Office of the European Communities organized a seminar on "Problems of Collection and Quality of Information collected through Household socio-economic Surveys".

This seminar was intended as an initial exchange of opinions between statisticians of the Community, whose tasks are basically similar and some of whose efforts contribute to the preparation of Community statistics. Opinion was unanimous that this initial stage had been completed but that a certain number of queries remained to be dealt with, which seemed logical. The delegates were most keen to have information circulated systematically between countries in order to channel methodological investments in the right direction and find answers to the outstanding questions.

Furthermore, the delegates felt that this seminar, which was general in scope, should be followed by others ; subjects of study were proposed for the future, which would be more specific in character ; these subjects include :

- problems posed by electronic data-processing of survey information
- problems of organization and method presented by the individual special needs of the statistician and data-processing expert
- the special problems encountered in surveys conducted at companies, since these are being asked more and more frequently to provide information
- comparability of methods used to perform surveys of the same type (not necessarily Community surveys)
- problems presented by the excessive periods required to produce publications
- influence of sampling methodology on the quality of surveys (e.g. the specific advantages of area sampling)
- impact on quality of increasingly sophisticated technical means (for data registration and calculation in particular).

Copies of the proceedings, in English and in French, are available from G. ROY, INSEE, Paris.

2.2 OTHER INFORMATION

2.2.1. NEWS REPORTING ABOUT SAMPLE SURVEYS

Amstat News, American Statistical Association, March 1980, n° 63.

As most members of the American Statistical Association are aware, reporting of survey results in the news media is sometimes misleading, occasionally false and very frequently inadequate. A committee of the Section on Survey Research Methods has submitted a proposal which was approved by the Board of Directors, at its meeting in February, to prepare materials and conduct workshops that would assist reporters and editors in better understanding of both the purposes and the results of surveys. The committee members are Dr. Peter Clarke, University of Michigan, Dr. David Bayless, Research Triangle Institute and Mr. Warren Mitofsky, CBS News.

The Board authorized the committee and Fred C. Leone, ASE Executive Director, to seek funding to accomplish the purposes outlined in the proposal. If funding efforts are successful, the project will be under the direction of Dr. Clarke at the University of Michigan. If the project goes forward, additional information will appear in Amstat News. A summarized version of the proposal follows.

Results and interpretation of sample surveys profoundly influence the making of public policy affecting governmental operations, social services, education, business and other spheres. Citizens deserve clear and competent accounts of these surveys in their news media.

The committee recognizes that inadequacies can be traced to at least two factors in the communication process. Reports for the news media often fail to convey findings in ways that allow the public to weigh their importance or accuracy. On other occasions, the sources producing survey reports - statisticians, pollsters, etc., neglect to present results with sufficient or pertinent information.

Most significant flaws in survey reporting

It does not require a burst of original thinking to identify three common reporting errors and omissions. One is ambiguity about a survey's purposes. The public needs to understand whether a study's value lies in its "point estimates" about social phenomena or in its analysis of differences between groups. Distinctions between surveys designed for description and those pursuing analytic purposes need to be communicated more clearly. Of course, a survey sponsor's intentions in conducting the study are also relevant.

The second area is one that has attracted the bulk of concern. How adequate are descriptions of the sample, questionnaire wording, methods of data collection, sampling error, completion rates, weighting, and other procedures ?

Third is interpretation. Are the statistical significance and importance attached to results open to alternative explanations ? Were steps taken to assess the validity of findings - might results be accounted, for example, by procedural artifacts ? Do a study's findings agree with or depart from others' results ? In what ways ?

In substance, then, improved communication about sample surveys could be obtained by more systematic and complete attention to study purposes, techniques used and interpretation of results.

Who is in the best position to improve media reporting ?

It is tempting but dangerous to conclude that everyone in the research and journalistic communities can play equal roles in improved performance. The committee is convinced that two participants are more important that others. One is the copy editor who reviews and edits stories before publication or airing. Their numbers are smaller that the vast

array of reporters for print and broadcast media whose assignments may bring them in contact with survey findings. The second potential contributor works for the survey organizations producing the swelling mountain of findings. This is the news release writer whose job is to capture the most significant features of a bulky technical report and draw them to journalists' attention.

A realistic aid to improved reporting

Professional communicators, whether desk editors or news release writers, are busy people. And they handle vast amounts of information, only a fraction of which pertains directly to improved survey reporting. The committee's efforts to help clarify survey purposes, account for key procedures, and increase attention to interpretative alternatives should recognize the short attention span to which news copy is subject.

The committee's proposal includes development of a short, indexed reference manual for use by editors and writers. It would focus on a limited number of recurring errors and omissions in the three survey areas identified. It would provide concrete examples of each error or omission, using disguised but real news stories about surveys. Most important, the reference would provide a short check list of questions writers and editors should raise about survey stories they handle. This aid will not address every kind of flaw one finds in reports, only a selection of the most common.

It should be emphasized that the manual will not evaluate survey aims, techniques or kinds of inferences. The committee's aim is to stimulate disclosure about these matters, prompting writers and editors with questions they can ask study directors, news sources or reporters who have been assigned to cover the release of surveys. Disclosure is preferable to neglect. As habits of question-asking become ingrained, the critical faculties of both askers and the asked will increase.

Delivery system for the indexed reference

Creating an aid for editors and writers represents only half the task. Putting it into users'hands and helping them employ it effectively is the second part of the job. The committee proposes one-day workshops, bringing survey producers and news reporting organizations together. The latter include the important wire services as well as indicators of features, influential newspapers, television network bureaus, trade magazines, etc.

These workshops would be designed to increase sensitivity to information about surveys that should be disclosed as an aid to public understanding. Examples of both informative and inadequate survey stories would be presented with suggested questions and other simple steps helpful in avoiding major errors and omissions. Workshops would be scheduled in several cities where large amounts of survey releases originate for regional or national distribution.

2.2.2. PEKING BACKS USE OF OPINION POLLS

J.P. Sterba - New York Times, August 25, 1980

China has discovered the public opinion poll.
Following anonymous samplings of workers' opinions at two factories, China's Institute of Psychology has endorsed the use of public opinion polls as "a good way to get direct and unprejudiced opinions from the people".

The institute, according to an article written for Guangming Daily, China's newspaper for intellectuals, advocates wide use of polls as a tool in the "science of management" that China is endeavoring to put into effect after concluding that political zealots, routinely promoted to management positions in the past, often do not know anything about running a business enterprise.

In its sample poll, the institute asked 343 workers in one factory and 91 workers in another to fill out a 21-question form on a variety of topics, including their work motivation, their frustations and labor management relations. The names of the factories were not disclosed.

China's workers and peasants have become conditioned to responding with answers they think their questioners want to hear, and that tendency is reflected in the results of the polls. But there is also some interesting honesty in the questions as well as the answers.

Election of Supervisors favored

The workers were asked, for example, how lower-rank Communist Party officials, who supervise things, should be chosen. Roughly half of the respondents said that they should be elected. In the first factory, 11 percent of those polled favored appointment from above, 52 percent wanted elections and 37 percent favored some unexplained form of "free competition" for office.

Asked what was the greatest barrier to worker initiative, the workers responded, in order of preference : bad leadership, low wages, housing problems, leader provileges, dullness of life, job dissatisfaction, factionalism and poor education for children.

Asked what motivated them to succeed on the job, the workers listed, in order : China's modernization, increased pay and bonuses, Communist ideals, career enhancement, the desire to have a happy family life, honor, possible fame and status, the prospect of promotion and nothing.

In general, the institute said, the workers were more concerned about bad practices and styles of work in their factories than they were about their own low wages.

Note of the IASS President

I welcome additional information from our members in China about the use of surveys there !

Tore Dalenius

2.2.3. SURVEY RESEARCH AT THE USDA

C.E. Caudill, US Department of Agriculture

The Economics, Statistics, and Cooperatives Service is responsible for the official national and state crop and livestock estimates plus related statistical data, and the coordination and improvement of the USDA's statistical programs. In particular, the Statistical Research Division (SRD) had as its primary function the development of new and improved

data collection, estimation and forecasting methods for agricultural statistics and the encouragement, through consulting services of the use of sound statistical techniques within USDA. The research being carried on can best be described by considering the structure of the Division. The SRD is divided into three branches, the Sampling Frames and Survey Research Branch, the Yield Research Branch, and the Remote Sensing Branch.

The Sampling Frames and Survey Research Branch develops and maintains area frames for each State, conducts sampling and nonsampling error research, and provides consultation throughout USDA and to a limited degree to other agencies. Specific research topics, past and present, include comparative studies of data imputation techniques, multivariate stratification, estimation of level and change through rotation sampling, measuring the effects of mail versus telephone versus personal interviews, detecting and measuring biases on multiple frame surveys, estimating rotation group effects, the extension of network sampling to agricultural situations, and adjusting for nonresponse.

The Branch also has the responsiblility of constructing area frames in order to estimate major crop acreage and yield in several foreign countries using satellite imagery under a multiagency extended research program.

In addition, the entire division provides technical assistance to foreign countries by assisting them with area frame development, maintenance, and estimation procedures for agricultural and economic data.

The Yield Research Branch conducts and supports research and evaluation in improving the capability to forecast and estimate crop yields, and conducts research in methods for detecting and evaluating large area conditions that may affect crop production. The methods used include design of experiments for data collection to build and evaluate models, mathematical modeling techniques, simulation methods, time series analysis, and data management systems development. Modeling and analysis are performed at the field, state and regional levels, both for the United States and major foreign production areas. Much of the research is conducted in a multidiscipline environment involving expertise in the plant, soils, water, and atmospheric sciences. Modeling complexity ranges from simple regression to complex growth function simulations.

The Remote Sensing Branch is mainly concerned with crop acreage and land use estimation by combination of satellite collected data with probability collected ground data. Clustering and classification techniques are used for training and expansion is made to entire frames of satellite data. A regression estimation approach is used which yields state, multicounty and county estimates. Research is continuing into improvements in clustering techniques, improved registration of satellite data to ground locations and operational techniques for utilizing satellite imagery. Also of specific interest is the expansion of remote sensing techniques to land resourve inventory needs of other USDA agencies.

The point of contact for further information or discussion about specific research should be : C.E. Caudill, Director, Statistical Research Division, Economics, Statistics and Cooperatives Service, U.S. Department of Agriculture, Washington D.C. 20250.

2.2.4. STATISTICAL CONFIDENTIALITY - EASING OF THE RULES APPLYING TO ENTERPRISES

M. Hebert, Department of Coordination of Statistics and Accounting, INSEE, France

A number of proposals aimed at easing the rules of statistical confidentiality concerning business firms have been debated for several years.

They were presented to the"productive system" group of the French National Council for Statistics on March 10, 1979, but so far it has not been possible to reach a complete agreement on all of the proposals which seem attainable.

However, a general agreement has been reached on some of the measures considered, and the Council has been asked to adopt them immediately in order not to delay their implementation.

The first measure is aimed at modifying the rule under which results concerning a group of less than four enterprises cannot be released, and to reduce this figure to three.

The second deals with secondary activities undertaken by business firms. At present, statisticians release only the main activity, whereas in practice businesses usually wish that their various activities be known and mention them in numerous papers : trade lists, advertisements, etc.. It has agreed during the meeting of the "productive system" group that the list of secondary activities of enterprises could be published at the 600 level of the official activities nomenclature, but that if any firm found this to be unsuitable, it could ask that these data remain confidential.

These two measures may seem modest. Yet in quite a number of cases they should offer the advantage of permitting a profitable release of additional information.

Therefore, in a plenary session on June 6, 1980, the French National Council for Statistics adopted the following rules :

The National Council for Statistics :

- taking into account that for the last few years requests for more precise information have become more frequent
- taking into account that the various parties concerned have been consulted on the measures mentioned below and that they have been in unanimous agreement on their adoption,

1) approves the lowering of the minimum number of firms from 4 to 3, so that data about them may become an object for publication :
2) allows the list of secondary activities of firms and establishments to be released at the 600 level of the official activity nomenclature without restriction. However, if certain firms find this unsuitable, they may request that the data remain confidential.

These new rules are henceforth applicable.

3. PAPERS

3.1 TRAINING OF STATISTICIANS AND DATA PROCESSING TECHNICIANS FROM DEVELOPING COUNTRIES AT THE US BUREAU OF THE CENSUS

K.R. Bryson, Training Branch, International Statistical Programs Center, US Bureau of the Census

Historical Background

In the early 1940's directors of statistics of several Western Hemisphere countries organized a regional professional group of statisticians to discuss mutual interests and problems ; this group became the Inter-American Statistical Institute (IASI). Few Latin American countries at that time had a census tradition in the sense of a regularly recurring cycle of population and economic inquiries. IASI moved to correct this situation by establishing a Western Hemisphere program, the 1950 Census of the Americas (COTA). However, because very few of the Latin American statistical offices had sufficient

personnel for such a large undertaking, IASI requested assistance from the principal agencies of each country with operative census programs. In the United States, the five agencies which responded to this request were the Statistical Reporting Service of the Department of Agriculture ; the Bureau of the Census and the Bureau of Economic Analysis of the Department of Commerce ; the National Center for Health Statistics of the Department of Health, Education, and Welfare ; and the Bureau of Labor Statistics of the Department of Labor.

In 1946 the Census Bureau created the position of Coordinator of International Statistics. Calvin L. Dedrick, who held this position for 20 years, had been instrumental in getting the Bureau to adopt probability sampling for the 1940 census, had a Ph.D. in sociology, and was bilingual in Spanish and English. Under his leadership, a formal statistical training program for participants from developing countries was established in 1946.

Inasmuch as many of the trainees were interested in fields of statistics other than census methodology, 9 months of study were spent in the agency handling each specialization - vital statistics, agriculture, manpower, national accounts, or population. An additional 3 months were spent at the Census Bureau studying census concepts and procedures, so that all trainees could be mobilized for their 1950 censuses.

In 1949, when the United States adopted a program of technical cooperation and assistance on a worldwide basis, the geographical scope of the training was extended to Asia, Africa, and the Middle East. Over the years, as needs changed, both program content and methods of instruction changed. While the program has continued to emphasize practical aspects, statistical theory and tools essential to understanding the principles upon which conceptual and methodological applications are based have received more attention. Outmoded topics have been deleted and new ones added to the curriculum. Courses in quality control, statistical methods, nonsampling error, data systems, management, and the use of data in development planning have gradually replaced some of the courses that became more and more available in national training programs. Learning by doing has continued to be emphasized. Realistic demonstration surveys designed and implemented by the participants under the direction of the training staff have been used to provide practical experience. With increasing specialization, formal links between the training programs of the different US Government agencies have diminished ; however, a strong tradition of informal cooperation has continued.

Emphasis has been placed on incorporating world and regional principles and recommendations in preparing Census Bureau programs and curricular materials for the training of statisticians and data processing technicians from developing countries. International and regional statistical guidelines have been synthesized with the experiences of Census Bureau experts who have been involved in providing technical assistance to developing countries. Staff members of the Census Bureau's International Statistical Programs Center (ISPC) have developed a series of case studies detailing statistical operations for censuses and surveys in mythical developing countries - Atlantida, New Florencia, Popstan, Providencia, Agrostan - and training manuals, such as the recently issued Mapping for Censuses and Surveys. These case studies and manuals, most of which have been translated into Spanish and French, have served as a basis for workshops conducted both in Washington and throughout the world to assist statisticians, data processing technicians, and administrators in adopting these guidelines and experiences into their own national statistical programs.

Nature of the Present Program

At the present time, four major types of programs are offered by the Training Branch of the International Statistical Programs Center, the organizational unit that is responsible for training of statisticians and data processing technicians from developing countries at the US Bureau of the Census :

Program I : A program of 11½ months, conducted entirely by ISPC staff and stressing the practical application of survey/census techniques. Through arrangements with the USDA Graduate School, academic credit is awarded for each course. A diploma from ISPC is awarded for successful completion of the prescribed program. Training is offered in five areas of specialization : sampling and survey methods, agricultural surveys and censuses, population statistics and demographic analysis, economic surveys and censuses, and computer data systems.

Program II: A combined Degree Program with George Washington University leading to a Master of Science in Special Studies with a concentration in Social and Economic Statistics. It comprises the full ISPC program in any one of the five specializations of Program I, plus a 4½-month extension to complete selected GWU courses in advanced administrative management, human behavior in organizations, census analysis and social development, economic development theories and issues , and a graduate level elective. This program complements the practical ISPC statistical training and enables the candidates to increase their potential for analytical creativity and intellectual inquiry.

Program III : A Demography Degree Program with Georgetown University leading to a Master of Arts in Sociology (Demography). It combines the ISPC Diploma program in population statistics and demographic analysis with additional university graduate work in demography requiring an additional 6 months. The aim of this degree program is to complement the practical ISPC statistics training with graduate instruction and research experience in demography and related disciplines.

Program IV: Special-purpose training programs developed by ISPC staff to meet individual training objectives. These are of three types : (a) training programs in general statistical technology to provide survey statisticians and administrators an opportunity to gain practical experience in various aspects of the planning and implementation of a multi-subject household survey program ; (b) individual or group special-purpose training programs, a few days to several months in length, on topics not covered by the regular ISPC curriculum (such as seasonal adjustment of economic data, small-area geocoding for socio-economic analysis, or the construction of social indicators) ; (c) special workshops, 1 to 3 months in length, providing comprehensive coverage of topics related to the planning and implementation of a census or survey program, often including a practical field exercise.

All four of the training programs described above are conducted in English.

Distribution of Participants by Sponsor and Region

Participants in the ISPC training program may be sponsored by the Agency for International Development : the United Nations, the Food and Agriculture Organization, the World Bank, or another of the UN specialized agencies ; the Organization of American States ; the Ford Foundation or another private foundation or the participant's own government. Although the ISPC training program continues to be conducted by the US Bureau of the Census under a Resources Support Services Agreement (RSSA) with the US Agency for International Development (AID), since October 1977, AID has supported only that share of the training budget corresponding to the share of AID-sponsored participants in the total workload, plus the administrative portion of the cost of training UN-sponsored participants. Other sponsors are asked to pay the full cost of training their participants.

The effect of this changein AID assistance policy has been to sharply increase the costs for non-AID-sponsored participant training programs beginning with the 1977 training year. Table 1 on the next page shows that the consequent impact on participant numbers has been minimal. Recently, participants funded by AID, UN, and other agencies have constituted roughly equal shares of ISPC participant numbers, continuing the historical trend of the 1970's. It is reassuring to note

that, since 1977, total participant numbers have increased.

In the background section at the beginning of this paper, it was noted that the ISPC training program began with an exclusive focus on assistance towards the statistical development of the Latin American region. Soon, however, the geographical scope of the program was broadened, and in recent years participants from Latin America and the Caribbean have constituted about one-sixth of the participant workload, compared with nearly half from Asia and the Middle East, and approximately one-third from Africa.

TABLE 1. PARTICIPANTS AND PERSON-MONTHS OF TRAINING BY SPONSOR , 1970 to 1979

	Total number of participants				Person-months of training			
Training year	All sponsors	AID	UN*	Other **	All sponsors	AID	UN*	Other **
1979***	282	99	108	75	1351	445	569	337
1978	265	99	100	66	1212	428	511	273
1977	218	69	80	69	1084	392	331	361
1976	216	97	56	63	1126	524	259	343
1975	215	70	80	65	910	259	412	239
1974	228	105	76	47	1033	451	386	196
1973	240	126	72	42	1013	545	318	150
1972	246	133	76	37	1075	656	332	87
1971	177	101	60	16	932	604	254	74
1970	216	119	90	7	1112	620	444	48

* UN-sponsored participants include those sponsored by the United Nations Development Program, Food and Agriculture Organization, World Bank, World Health Organization, and United Nations Educational, Scientific, and Cultural Organization.

** Other-sponsored participants include those sponsored by the Organization of American States, Ford Foundation, Institute of International Education, Development Associates, as well as the Central Bank or other national or state government agency of the participant's own government.

*** Participant workload figures for the training year which began September 4, 1979 , are estimates based on initial participant numbers and historical trends.

TABLE 2. NUMBER OF PARTICIPANTS BY SPONSOR AND REGION : 1976 THROUGH 1978*

	All sponsors	AID	UN	OTHER
All regions	699	265	236	198
Asia, Middle East	338	113	139	86
Africa	248	97	75	76
Latin America, Caribbean	109	53	20	36
Europe, Oceania	4	2	2	0

* Total number of participants in training from September 1976 to September 1979 (1976, 1977, and 1978 training years).

Future Directions for Program Development

A strong commitment to respond to the changing training needs of the world statistical community will continue to be reflected in the Bureau of the Census training program. The training needs identified in the proposal for the United Nations National Household Survey Capability Program (NHSCP) prompted ISPC to initiate a special training program in general statistical technology in the 1977 training year. On request, programs have been arranged to provide survey statisticians and administrators with an opportunity to gain practical experience in various aspects of the planning and implementation of a continuing survey program. In June and July 1980, a workshop on developing national household survey capability was held at ISPC in Washington to assist survey statisticians and administrators in addressing problems of survey design, preparation, and implementation which will be faced by developing countries in initiating a continuing multi-subject household survey program. Beginning with the 1980 training year, ISPC will offer a sixth training specialization, statistical technology, in addition to the five curricula in which 1-year training programs are offered now (Sampling and Survey Methods, Agricultural Surveys and Censuses, Population Statistics and Demographic Analysis, Economic Surveys and Censuses, and Computer Data Systems).

In September 1967, in preparation for the 1970 World Census of Agriculture, the Food and Agriculture Organization of the United Nations and the US Bureau of the Census, with the cooperation of the US Department of Agriculture, initiated the Joint FAO/US Agricultural Statistics Training Program. This program has been reinstituted for the 1980 World Census of Agriculture. In addition to the 1-year training program in agricultural surveys and censuses, a series of workshops to assistpersons who will have planning, administrative, or major technical responsibility for a national agricultural census to develop a better understanding of the methodological recommendations and guidelines prepared by the FAO and the US Bureau of the Census.

The US Bureau of the Census expects to cooperate with the United Nations Statistical Office in the preparation of training materials and the organization of workshops in support of the 1983 World Program of Industrial Statistics. A revision of the Providencia Case Study for Economic Censuses has been prepared in draft. In this case study, emphasis is given to development of operational definitions, procedures, and documents which translate census concepts and objectives into well-structured series of instructions and processes. These become the working guidelines of national technicians responsible for census planning and execution.

In addition to developing the Washington-based training program, ISPC is committed to developing training extension services to take training to those who need it. For some time it has been recognized that many qualified persons who need training cannot go abroad because of the cost of coming to ISPC in Washington, demands of the job to which the potential trainee is presently assigned, family responsibilities, the trainee's lack of fluency in English, and other reasons. A series of correspondence courses in the planning and implementation of multi-purpose household surveys was initiated in 1971 to meet some of the needs of those unable to avail themselves of the regular ISPC training program. The advantages of individualized instruction which have been demonstrated in the correspondence training program suggest that it would be profitable to explore the extension of this training medium beyond the limited repertoire of topics presently being offered. Other possibilities include the development of a new technology of training extension services by exploiting the potential of other modes of individualized instruction such as video-assisted-instruction (VAI) and computer-assisted-instruction (CAI).

Continuing Need for the US Bureau of the Census Training Program

In the 33 years since its establishment, the international training of the US Bureau of the Census has contributed to the professional development of approximately 5,000 statisticians and data processing technicians from more than 100 different countries. Despite these contributions, the needs of the world statistical community for trained personnel are seemingly as great now as they were in 1946. The existing staff of statistical personnel in Africa is estimated to be only one-quarter of what is required to produce statistics for social and economic development planning. Even if efforts to reduce losses of trained staff from national statistical offices in the region are successful, it will be necessary to train an additional 11,500 persons (mostly professional staff) during the next decade. Although the demand for statistical training in Latin America is smaller, informed estimates place the shortfall in statistical staffing at about 1,000 professional and 3,000 middle-level personnel.

Because the aggregate needs of the world statistical community are so great, a high degree of planning, commitment, imagination, and coordination are needed to insure that relevant and timely training services are provided to all who will need them. The future of the US Bureau of the Census international statistical training program will be even more challenging and more exciting than its past.

3.2. EVALUATION OF DATA QUALITY IN THE LABOR FORCE SURVEY

Statistical Office, Spain

Introduction

Errors made in any survey may be classified into two main groups :

- sampling errors concerning the results on the characteristics of a population obtained from the information collected in a sample. When it is a random sample, "the sampling error" is estimated by the positive square root of its variance.

- non-sampling errors common to any statistical survey. These errors appear at any stage of the "statistical process":
  - before the data collection because of defects in the definitions and questionnaires
  - during the data collection because of errors in the interviews and incorrect answers from the respondents
  - after the data collection as a result of errors in editing and coding or as a result of punching, tabulation, and printing errors.

Sampling errors

For the labor force survey, we periodically estimate the sampling errors that affect the estimates of characteristics at the national and provincial levels.

To estimate these errors we apply the half-sample replicate method as follows : we use 40 reiterations -each one consists of 1,500 sections, half the complete sample, randomly selected. To constitute the 40 reiterations, we pair the sections of each stratum, randomly alloting the first section of each pair to 20 reiterations and the second section to the 20 remaining ones. If $\hat{x}$ is the estimate based on the complete sample, the sampling error of which we wish to estimate, and if $\hat{x}_h$ is the estimator based on a reiteration, the variance of $\hat{x}$ can be calculated from the formula :

$$V(\hat{x}) = \frac{1}{40} \sum_{h=1}^{40} (\hat{x}_h - \hat{x})^2$$

from which we get the relative sampling error as :

$$\frac{\sqrt{V(\hat{x})}}{\hat{x}} \cdot 100$$

Non sampling errors

In the labor force survey, we try to trace the non-sampling errors by distinguishing :

- coverage errors, which consist of the erroneous omission or inclusion of dwellings and people
- content errors due to the wrong classification of persons for a given characteristic

To get information concerning the magnitude of these errors, we repeat the survey with a sub-sample of the sample used each quarter by the labor force survey. This is called the Evaluation Survey.

For analysis of dwelling coverage and non-response, we also have information on the deficiencies with respect to the complete sample provided by the Department responsible for the fieldwork.

a) Evaluation Survey

Each quarter we select a sub-sample of 312 sections and repeat the data collection procedure in half the dwellings

which were initially selected for the labor force survey in these sections. For the collection of the information, we use a different team of interviewers who are particularly qualified and selected especially for that job. We give the name of repeated interview (R.I.) to the information obtained in this evaluation survey, and we keep it as reference values for comparison with values obtained for the same people and dwellings in the labor force survey, the data from which constitute the original interview (O.I.).

The so-called evaluation sample, from which the insular provinces are excluded, consists of 3 sub-samples -A, B and C.

For the selection sub-sample 1, we take into consideration 12 groups of approximately 20 blocks each, among all the blocks that cover the whole pensinsular domain of the labor force survey. Each week, from among those 12 groups we randomly select, without replacement, one of the groups in order to evaluate a section of each block of the selected group in sub-sample A. Considering that each block is a complete set of sections permanently alloted to each labor force survey interviewer, at the end of the quarter one section belonging to each interviewer has been interviewed in sub-sample A.

For the selection of sub-sample B, 81 zones of 3 blocks each have been set up covering the whole peninsular domain of the survey. Each week of the quarter a zone is randomly selected, and replaced during the draw if it contains a block selected in sub-sample A.

Sub-sample C includes 3 sections per week that are randomly sampled by whole blocks ; these blocks correspond to the agents for whom the largest number of mistakes have been observed.

In the sections of sub-samples A and B, the interview is repeated, as we already said, in 10 dwellings among 20 interviewed in the labor force survey. In the sections of sub-sample C, the interview is normally repeated in half the dwellings, the possibility of repeating it in all the dwellings being contemplated if necessary.

b) Coverage errors

Dwelling coverage

Agreement of the information provided by the repeated interview in the Evaluation Survey is determined by comparing it with the data provided for the same dwellings by the labor force survey interviewers. We get information on agreements and discrepancies between the O.I. and the R.I. according to the following classification :

- Dwellings subject to interview
  - Interviewed
  - Not interviewed
    - not visited
    - refusal
    - not at home
- Dwellings not subject to interview
  - Temporary or secondary dwellings
  - Vacant
  - Used for another purpose
  - Dilapidated
- Dwellings impossible to locate or reach

The group of unvisited dwellings appears in the classification according to the R.I. only since it concerns the dwellings for which the R.I. interviewers noted that they have not been visited by the labor force survey.

Population coverage

For the dwellings interviewed in both the O.I. and the R.I., a comparison is made to determine agreements and discrepancies among the people who belong to the domain of the survey .
Data appear in a table using the following classification :

- people interviewed in the R.I.
- people interviewed in the same dwellings in the O.I.
- agreements
- omitted in the O.I.
- erroneously included in the O.I.

c) Content errors

We use as reference data the information provided by the repeated interviews (R.I.) of the Evaluation Survey. The different classification of a person compared with the original interview (O.I.) is defined as "content error". For the analysis of content errors on a characteristic of the population, a double entry table is constructed in which the intersection cell of a row with column j contains the number of identically classified people in the two surveys for each modality (classification variable (tr.)). The sum of the cells in the row is the total number of people classified according to the R.I. in the concerned modality ; the sum of the cells in the j column represents the total number of people classified in the j modality according to the O.I.

From the agreement table for a given characteristic, it is possible to extract a double entry table as follows :

Classification according to R.I. \ Classification according to O.I.	Modality under study	Other modalities	Total number of persons
Modality under study	a	b	a + b
Other modalities	c	d	c + d
Total number of persons	a + c	b + d	n

where :

n = total number of people classified in the two surveys according to the reference characteristics : (n = a+b+c+d)

a = the number of people classified in the surveys according to the modality under study

b = the number of people classified from the R.I. according to the study modality and according to the O.I. in another modality

c = the number of people who, classified according the O.I. in the study modality, have been classified according to the R.I. in another modality

d = the number of people classified in each survey according to a modality different from the one studied

The QUALITY INDICATORS that are calculated for each modality of the evaluated characteristics are the following :

- percentage of identically classified people (I.C.P.)

$$I.C.P. = \frac{a}{a + b} \times 100$$

This varies from 0 to 100. It is an indicator of the stability of the response and its optimal value, 100 means that all the people belonging to the study modality according to the R.I. are classified in the same way in the O.I.

- Net Difference rate (N.D.R.)

$$N.D.R. = \frac{c - b}{n} \times 100$$

This may be positive or negative according to whether $c > b$ or $c < b$; it measures the response bias of the O.I. that affects the population proportion according to the study modality.

- Net Change Index (N.C.I.)

$$N.C.I. = \frac{c - b}{a + b} \cdot 100$$

This may be positive or negative according to whether $c > b$ or $c < b$; it measures the relative response bias of the O.I. expressed as a percentage of the number of people, according to the R.I., for the modality under study.

Both the N.D.R. and the N.C.I. must be seen as bias indicators and not as bias estimators, given that to estimate them in the above formulas, we do not take into account the distinct weighting that affects the data of each stratum in the labor force survey estimations.

- Unweighted difference rate (U.D.R.)

$$U.D.R. = \frac{c + b}{n} \cdot 100$$

This always has a positive or zero value and is a response variance indicator.

- Unweighted change index (U.C.I.)

$$U.C.I. = \frac{c + b}{a + b} \cdot 100$$

This always has a positive or zero value and like the U.D.R. it is an indicator of response variability expressed in relation to the importance of the study modality.

- Index of global consistency (I.G.C.)

$$I.G.C. = \frac{\sum a_j}{n} \times 100$$

a_j = the number of people classified identically in the two interviews for a given modality. The sum includes all the modalities considered for a given characteristic, and it measures the identity of answers from all the modalities. It varies between zero and 100, the last value corresponding to complete identity.

3.3 AN APPRAISAL OF A PILOT SAMPLE SURVEY TO ESTIMATE THE PRODUCTION OF LAC

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Introduction

Lac is secretion of tiny insect called "Kerria Lacca". These insects are hosted by certain species of trees namely Ber (Zizyphus mauritina), Palas (Butea monosperma) and Kusum (Schleichera deosa). These trees are called lac hosts in general. The insect has two strains locally known as Rangeeni and Kusumi. Rangeeni strain thrives on Ber and Palas hosts and has two crop seasons, one extending from December to May known as Baisakhi and the other from July to mid-November called Katki. Most of the lac comes from Rangeeni strain. Lac is grown in India mainly by tribals and economically weaker sections of people. It is primarily grown in Chhota Nagpur and Santhal Parganas of Bihar, Purulia and Bankura districts of West Bengal, eastern parts of Madhya Pradesh and Uttar Pradesh, Bhandara and Chanda districts of Maharashtra and Keonjhar, Maurbhanj and Sundergarh districts of Orrisa. The product is in the form of stick lac which after processing is converted to seed lac and shellac. Also, India contributes a major share to the world production of seed lac and shellac. During 1974-75 this country earned a record foreign exchange of Rs 24.33 crores from the export of 7,332 tonnes of seed lac and shellac.

The Directorate of lac development under the department of Agriculture, Govt. of India collects statistics of production of lac, its price and marketing and trade aspects. Since no reliable statistics are available on the number of host trees, number of cultivated host trees and the average yield rates, the statistics of production available with the Directorate of Lac development cannot be fully relied upon. Lac hosts are scattered over large areas and their numbers vary conside-

rably from state to state and from one region to another in a state due to deforestation and illegal falling of trees. As such the variation in the number of hosts between villages is quite large. The cultivation of lac depends mainly on the market demand for lac and its price. Consequently the production of stick lac varies widely from village to village and from season to season. There is aslo variation in the growth rates of different species of host trees. For instance, the Palas tree has much faster growth than other hosts. In order to estimate the production of lac, the Indian Agricultural Statistics Research Institute, New Delhi conducted pilot sample survey during the year 1975-77 in Bihar state covering Katki and Baisakhi seasons of Rangeeni crop.

Survey Methodology

The technique of sampling employed at district level was stratified two stage random sampling with stratification done on the basis of number of lac hosts in the village. The information about the number of lac hosts in the village. The information about the number of lac hosts was collected from the village officer, known as patwari. Forty five villages were chosen by simple random sampling without replacement as first stage sampling units. The selected villages were allocated equally to each stratum. From each selected village ten cultivated Palas and five cultivated Ber hosts were selected by simple random sampling without replacement from the list of cultivated Ber and Palas hosts in the village which constituted the second stage units. The estimate of number of cultivated hosts in the district was obtained by taking into account the geographical area of the sample villages. The total production of lac and the average yield per cultivated host tree were estimated by taking into account the estimates of the number of cultivated hosts. The estimation procedure followed and the variances of the estimates of number of cultivated hosts and average yield per cultivated host are given in Appendix. A summary of the results is given in the following table.

Table : Average yield per cultivated host, number of cultivated hosts and total production of stick lac

Year of the survey	Season	Average yield per Ber hosts (in kg)	No of cultivated Ber (in lakhs*)	Average yield per Palas host	No of cultivated Palas (in Lakhs)	Total production (in tonnes)
1975-1976	Katki	1.06 (3.0)	1.9 (3.6)	1.27 (2.8)	2.6 (9.2)	542 (6.1)
	Baisakhi	2.72 (4.7)	2.1 (10.9)	1.45 (12.1)	3.8 (7.1)	1131 (9.5)
1976-1977	Katki	0.56 (15.5)	0.5 (7.0)	0.65 (9.8)	0.6 (12.4)	69 (10.8)
	Baisakhi	2.64 (3.6)	3.2 (15.6)	1.41 (5.0)	2.9 (10.0)	1265 (7.8)

* 1 lakh = 100 000 rupees
Figures in the brackets indicate percentage standard errors

Results in more detail are available in the report on "Estimation of production of Lac" published by Indian Agricultural Statistics Research Institute (ICAR) New Delhi-12. The total production of stick lac during Katki 1976 is low due to drop in prices in previous season. The high standard error for average yield of Ber in Katki 76 season was due to less number of crop cutting experiments.

Comments and critical appraisal

The scope and coverage of the present survey was restricted to estimating the production of stick lac in a compact region. The production is obtained as a product of number of cultivated hosts and average yield per tree. A critical appraisal of the methodology used, its draw backs and suggestions for future surveys are briefly given below :
(a) As in the ease of other crops, the village officers (Patwaris) do not maintain regularly statistics on production of lac like number of hosts, extent of cultivation etc. In order to use any auxiliary information for improving the design by way of stratification, clustering or in the construction of improved estimates like ratio and regression search has to be made for such auxiliary information which are highly correlated with the characters under study. In the present survey information on number of lac hosts in the village and geographical area of the villages are utilized for making homogeneous strata and in the estimation of number of hosts and number of cultivated hosts respectively. It was observed in some cases that villages were misclassified as the information provided by patwari on number of hosts was doubtful. Further, the correlation between geographical area and number of hosts reported by patwari was poor. Thus, there is a need for further research in this direction.
(b) It was observed that while the estimates on number of hosts and average yield per lac host could be obtained with reasonable precision the estimate of number of cultivated hosts had high standard error. This may be due to high variability in the cultivation of lac from village to village and the inadequate sample size for estimation of the same.
(c) Further, there is large variation in the extent of cultivation which may be attributed to the fact that the hosts which were harvested will not be available immediately for cultivation in the following season, but available only for cultivation in the alternate season. This pattern of cultivation has to be profitably exploited by use of successive sampling technique.

(d) The extent of cultivation of lac depends upon the market demand and price level of lac. Sometimes due to poor demand, the cultivators do not harvest the lac and consequently all the produce does not come into the market. Hence a correction factor has to be worked out between production and prices to correct the estimates of production obtained from crop cutting experiments.

Appendix

Estimation procedure

The procedure for estimating the number of cultivated hosts the average yield per cultivated host and total production for Ber and Palas species is given along with their estimates of variances.

Notations used :

Let V_i the total number of villages in the i-th stratum

v_i the number of villages in the sample from the i-th stratum

$v = \sum_{i=1}^{L} v_i$ is the total number of villages in the sample, where L is the number of strata

x_{ij} geographical area (in hectares) of the j-th village in the i-th stratum

M_{ij} the total number of cultivated hosts in j-th village of the i-th stratum

Y_{ijk} the yield of stick lac from k-th cultivated lac host selected for harvesting in the j-th village from the i-th stratum

(a) Estimates of number of cultivated hosts and its variance ; The estimate of number of cultivated hosts is given by

$$\hat{M} = \sum_{i=1}^{L} N_i \hat{\bar{M}}_{i(R)}$$

$\hat{\bar{M}}_{i(R)}$ = the estimate of the average number of cultivated hosts per village in the i-th stratum.

and $$\hat{\bar{M}}_{i(R)} = \bar{m}_i + b_i (\bar{X}_i - \bar{x}_i)$$

The estimate of variance is given by

$$\hat{V}(\hat{M}) = \sum_{i=1}^{L} N_i^2 \hat{V}(\hat{\bar{M}}_{i(R)})$$

and $$\hat{V}(\hat{\bar{M}}_{i(R)}) = \left(\frac{1}{n_i} - \frac{1}{N_i}\right) A_i^2 (1 - \rho_i^2)$$

where $$\bar{m}_i = \frac{1}{N_i} \sum_{j=1}^{N_i} M_{ij}$$

$$A_i^2 = \frac{1}{N_i - 1} \sum_{j=1}^{N_i} (M_{ij} - \bar{m}_i)^2$$

$$\bar{X}_i = \frac{1}{N_i} \sum_{j=1}^{N_i} X_{ij}$$

$$\bar{x}_i = \frac{1}{n_i} \sum_{j=1}^{n_i} x_{ij}$$

ρ_i is the correlation coefficient between the geographical area and the number of cultivated lac hosts of the village and b_i is the regression of number of cultivated hosts on the geographical area of the village among the sampled villages in the i-th stratum.

(b) The estimates of total production of lac and its variance . The estimate of total production of stick lac is given by

$$\hat{P} = \sum_{i=1}^{L} \hat{P}_i$$

where $$\hat{P}_i = \hat{M}_i \hat{\bar{y}}_i$$

and $$\hat{\bar{y}}_i = \frac{\sum_{j=1}^{n_i} M_{ij} \hat{\bar{y}}_{ij}}{\sum_{j=1}^{n_i} M_{ij}}$$

$\hat{\bar{y}}_{ij}$ is the average of observed yield of stick lac in the j-th village of the i-th stratum.

The estimate of the variance is given by

$$\hat{V}(\hat{P}) = \sum_{i=1}^{L} \hat{V}(\hat{P}_i)$$

where $$\hat{V}(\hat{P}_i) = \hat{M}_i^2 \hat{V}(\hat{\bar{y}}_i) + \hat{\bar{y}}_i^2 \hat{V}(\hat{M}_i)$$

and $$\hat{V}(\hat{\bar{y}}_i) = \frac{1}{n_i (n_i - 1) \hat{\bar{M}}_{i(R)}^2} \sum_{j=1}^{n_i} (\hat{\bar{y}}_{ij} - \hat{\bar{y}}_i)^2 M_{ij}^2$$

c) The estimates of the average yield per cultivated host and its variance.

The estimate of the average yield per host is given by

$$\hat{\bar{y}} = \frac{\hat{P}}{\hat{M}}$$

and $$\hat{V}(\hat{\bar{y}}) = \frac{1}{\hat{M}^2} [\hat{V}(\hat{P}) + \hat{\bar{y}}^2 \hat{V}(\hat{M}) - 2 \hat{\bar{y}} \hat{cov}(\hat{P}, \hat{M})]$$

where $$\hat{cov}(\hat{P}, \hat{M}) = \sum_{i=1}^{L} \hat{cov}(\hat{P}_i, \hat{M}_i)$$

and $$\hat{cov}(\hat{P}_i, \hat{M}_i) = \frac{1}{n_i (n_i - 1) \hat{\bar{M}}_{i(R)}} \sum_{j=1}^{n_i} M_{ij} (\hat{\bar{y}}_{ij} - \hat{\bar{y}}_i)(M_{ij} - \hat{\bar{M}}_{i(R)})$$

3.4 ABSTRACTS OF THE PAPERS PRESENTED IN THE MEETING ON "PERSPECTIVES ON SURVEY METHODS IN DEVELOPING COUNTRIES"

From : 1980 Abstracts, Houston, Texas, August 11-14 1980. Published by the American Statistical Association.

RECENT TRENDS IN METHODOLOGY OF DEMOGRAPHIC SURVEYS IN DEVELOPING COUNTRIES

A. Adlakha, J. Sullivan, J. Abernathy

The paper describes advances in the methodology of measuring levels of fertility and mortality from data collected through sample surveys in developing countries. Developments in the fields of direct and indirect estimation procedures are discussed. The direct estimation procedures enumerate events during a defined time period for straight forward calculation of vital rates. Advances in this area have involved complex systems of data collection which are traced in terms of evolution from single round retrospective surveys to multiround surveys and dual record systems. Indirect estimation is based on a strategy of collecting demographic data which do not provide direct vital rates estimates but can be transformed into vital rates estimates with the aid of demographic models. Advances in this area have involved the construction of elaborate models based on generalized assumption about demographic behavior and are exemplified by developments in the area of mortality estimation with childhood survivorship data.

SURVEY DESIGN FOR CONTROL OF MEASUREMENT ERRORS IN DEVELOPING COUNTRIES
B.A. Carlson, K.K. Kindel, W.C. Menth, A.G.Turner

This paper highlights a few of the survey design issues which the Census Bureau's International staff has faced in recent experience in carrying out its technical assistance role in developing countries. One example traces the evolution of questionaire measures in several Latin American countries, notably Guatemala, Dominican Republic and Bolivia. Secondly, there is discussion of some special issues in the developing world in the area of income measurement, and finally, there is a section on the issues of survey design that occur in the process of evaluating intervention-action projects. How the Census Bureau, working with its counterparts, has chosen to deal with the various issues, plus a contrasting of methods promulgated in these countries versus more developed nations, is also included.

SOME SAMPLE SURVEY DESIGN PROBLEMS IN SYRIA, NEPAL AND SOMALIA
J.W. Bergsten

The design and implementation of sample surveys in developing countries presents a novel challenge to the survey statistician. The information needed for planning purposes in these foreign countries is generally either unavailable or inadequate, consequently the survey statistician is charged with developing and implementing procedures for obtaining the much needed data. However, the statistician is also handicapped.

Inadequate data, maps, and materials impede the design, planning, and implementation of sample surveys. Communication by telephone in the developing country can be undependable and time consuming and travel can be difficult. Language and cultural differences can complicate instrumentation and data collection.

Counterbalancing these difficulties are survey response rates that can be expected to be near 100 %, and foreign counterparts who are bright, conscientious and eager to learn.

Some of the frustration and delights of designing and implementing surveys in Syria, Nepal and Somalia will be described.

DEVELOPMENT OF THE VENEZUELAN CPI
J.A. Knight, B.A. de Khan, C.H. Delfino, C.A. Jacobs, C. Leon

The Consumer Price Indexes for major urban centers in Venezuela are undergoing substantive revision and expansion. Surveys of consumer expenditures were taken in each index area. Samples of outlets in which to collect prices were then selected PPS, in some areas utilizing as a frame point-of-purchase data from the expenditure surveys.

The selection of items followed a multistage probabilistic design in which items were first selected PPS, taking as measures of size their relative importance as indicated by the expenditure survey data. Specific varieties of each item to be priced in an outlet were selected by a multistage disaggregation sampling procedure performed in the outlet during the initial pricing interview. Indexes are estimated using a modified Laspeyres approach in each geographic area for the total population and for each quartile of per capita income.

SOME PROBLEMS IN DESIGNING LIVING STANDARDS SURVEYS AND THEIR LINKS WITH PRODUCTION IN DEVELOPING COUNTRIES
R. Chander, G. Pyatt

The Living Standards Measurement Study (LSMS), recently initiated by the World Bank, is a research study concerned with the concepts which might be used, the field methods to be recommended, and the analysis of data collected to answer the question : " Who is benefiting from economic development ?"

This paper will explain the work program of the LSMS, the issues it is tackling and some of the alternatives with which it is proposed to experiment. The subject areas cover the definition of living standards, the role of community versus household data, and uses of household data in analyzing income distribution, labor markets and as a basis for national accounting and economic planning.

ABSTRACTS OF PAPERS PRESENTED IN THE MEETING ON "INTERNATIONAL RELATIONS IN STATISTICS : FEDERAL AGENCY ACTIVITIES

ACTIVITIES OF THE OFFICE OF FEDERAL STATISTICAL POLICY AND STANDARDS ON ERRORS IN SURVEYS
J.T. Sprehe, J.W. Duncan

The Office of Federal Statistical Policy and Standards is concerned with the ways in which nonsampling errors affect survey statistics. The activities and goals of the Federal Committee on Statistical Methodology in attempting to characterize potential sources of error and their impact on survey estimates are discussed.

INTERNATIONAL STATISTICAL PROGRAMS OF THE CENSUS BUREAU
R.O. Bartram

The Census Bureau has three divisions devoted to international statistics. Two divisions, Foreign Demographic Analysis Division and the International Demographic Data Center are devoted to analysis of demographic and socio-economic data from other countries. These date are compiled into country profiles for use by U.S. foreign policy monitors and developing country planners. The International Statistical Programs Center (ISPC) provides technical assistance and training to statistical agencies in developing countries. In the past 30 years, ISPC has trained over 4,000 statisticians and computer personnel from more than 90 nations. Technical assistance for censuses, surveys, and evaluations is provided through long and short term advisers to cover a wide variety of subjects such as demography, agriculture, labor force, health, education, etc. ISPC develops case studies in survey and census methods and statistical software for editing and tabulating data and has disseminated these products to more than 100 countries.

INTERNATIONAL STATISTICAL PROGRAMS IN USDA
W.H. Wigton

The International Statistical Programs administered by the Economics, Statistics and Cooperative Service (ESCS) employ the most flexible and up-to-date techniques developed in ESCS's domestic programs, including use of satellite imagery as an Area Sampling Frame (ASF) stratification tool.

Current statistics on crops, livestock, fertilizer, labor and income are well within the scope of the technical assistance. Once data requirements are listed by priority by the date users in the participating country, mathematical statisticians select materials and train counterparts in the "art" of ASF construction. Survey statisticians help develop Questionnaires and survey procedures, and teach counterparts who will actually train the interviewers. After a pilot survey is conducted in a limited geographic area and evaluated, a data collection strategy for the rest of the country can be developed. By then, the counterparts generally understand the principles of ASF construction and data collection and the consultants understand a little about the country.

INTERNATIONAL PROGRAMS OF THE BUREAU OF LABOR STATISTICS
J.T. McCracken, J.A. Knight

For more than thirty-three years, the Bureau of Labor Statistics, U.S. Department of Labor, in cooperation with USAID, has provided a program of training and technical assistance in labor statistics. Each year BLS conducts seven seminars of four to eight weeks duration in Washington, D.C. for statisticians, economists, analysts, planners

and administrators from countries ranging the spectrum of economic development and statistical sophistication. Topics of the seminars include proce indexes, labor force , employment and wage statistics, manpower projections and forecasts, economic growth models, income distribution and poverty measurements, analysis of labor statistics, management of statistics programs, and computer software packages for labor statistics analysis.

During recent years, the BLS has held a number of seminars in other countries, directed to specialists from the host country or its region. These programs are generally two or three weeks long and address the same subject areas as the Washington-based programs, but are more narrow in scope.

In addition to the formal seminars, BLS provides to foreign specialists individualized programs ranging from two weeks to eighteen months in duration. These programs provide for the direct involvement of the participants with BLS experts, including discussions and working with them in on-the-job training fashion.

Not only do specialists from other countries come to BLS for training and assistance, but BLS personnel also perform technical assistance services abroad. BLS staff serve as consultants on all aspects of survey design and management. Specialists also serve international organizations including the OAS, ILO, UNCTAD, and OECD, and participate in international and regional conferences, seminars and workshops.

From its inception, BLS has collected and published informartion on labor conditions and developments abroad. The principal comparative measures currently prepared by BLS cover the labor force, employment, and unemployment, productivity, hourly compensation and unit labor costs, and consumer prices. All data are drawn from secondary sources, such as the statistical agencies of foreign countries and international bodies such as the UN, ILO and OECD. The Bureau does not initiate surveys or data collection programs abroad.

For more information, contact : John T. McCracken, Director, International Labor Statistics Program Center, BLS, Room S-4015, Frances Perkins Building, 200 Constitution Ave., NW, Washington, D.C. 20210, USA, telephone (202) 523-9231.

QUESTION/ANSWER

4. (EDITOR : L. KISH)

WHAT ARE THE DEFINITIONS, METHODS AND USES OF DESIGN EFFECTS IN SURVEY SAMPLING ?

Design effect* denotes the ratio (v^2/v_o^2) of the actual variance of a statistic to that for a simple random sample (srs) with the same number (n) of elements. From complex survey samples v^2 is computed in accord with the complexity of the sample design ; v_o^2 is computed with standard formulas based on assumptions of n independant selections. It has been frequently computed for means with $v_o = s^2/n$, sometimes under other names : variance ratio, variance factor, efficiency ratio, etc. (historically also as the Lexis ratio and Poisson ratio for special cases.)

There is a slight difference between two symbolic definitions : $deff = v^2/[(1-f)s^2/n]$ and $deft^2 = v^2/[s^2/n]$. Thus an srs of size n has deff = 1, but $deft^2 = (1-f)$; (1-f) is commonly negligible, and deft is a convenient symbol for confidence intervals. The s^2 computed simply from complex samples is a robust, consistent estimate of the population value S^2. The other population values of $deft^2$ are often subject to great sampling variations especially because of few degrees of freedom for v^2.

$Deft^2$ are computed in order to assess the overall effects of the sample design, free of the disturbing factors of scale and of distribution, present in v^2 but removed by v_o^2. They facilitate generalizations for inferences form a set of computations 1) to other variables from the same sample, 2) to subclasses partitioned from the same sample, and 3) to other similar samples.

For simplicity and clarity we now discuss means based on equal selection probabilities. For proportionate element sampling the gains of stratification are reflected in reduced variances s_w^2 within strata when $deft^2 = s_w^2/s^2 < 1$. More important are the typical losses due to cluster sampling, when $deft^2 > 1$. These increases are often large, with great differences for diverse variables from the same sample. However, the "portability" of $deft^2$ is limited for the three purposes named above and $deft^2 = [1 + roh(\bar{b} - 1)]$ can take us further. Here $\bar{b}$ is the average size of sample clusters, and roh is an overall complex measure of homogeneity of elements in the clusters ; in random sampling of equal-sized $(\bar{b})$ clusters roh = rho, the intraclass correlation. Note that $deft^2$ depends on the sizes of sample clusters ; hence for subclasses that cut across the design (crossclasses), $deft^2$ has been found to decline roughly and nearly proportionately with subclass size. Even greater declines of $deft^2$ have been noted for differences of subclass means.

Values of $deft^2 > 1$ have also been computed for complicated (analytical) statistics from complex samples (Kish and Frankel, JRSS (B) 1974). For weighted computations of v^2, $deft^2$ maybe computed with weighted v_o^2 for external use, but with unweighted v_o^2 for uses internal to the sample.

Details, data and references are given in Verma, JRSS (A) 1980 ; Kish, World Fertility Surveys 1976 ; Kish, Survey Sampling, 1965 ; also in publications of the U.S. Bureau of the Census, and of Statistics Canada.

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* For Encyclopedia of Statistics, John Wiley and Sons, 1981.

5. NEWS FROM THE ASSOCIATION

5.1 OBITUARY

The Bureau deeply regrets to have to announce the death of our colleagues :

J.T. BAIRD (United States)

W.G. COCHRAN (United States)

Professor William Gemmel COCHRAN died on March 29 at the age of 70. His death is a great loss to the entire statistical community. We will sadly miss him.

Cochran was widely acknowledged to be the complete statistician. He gained that status by numerous contributions to statistical theory and methods as well as by his applications of these contributions to the design and analysis of statistical investigations. In these endeavors, he covered a very broad spectrum and emerged as an

outstanding expert in several areas, of which survey research was but one.

His contributions to statistics are laid down in his five books and more than 100 papers published in professional journals over the 40-year period from 1934 to 1974.

To the members of the International Association of Survey Statisticians, Cochran will perhaps best be remembered for his signal contributions to the theory and methods of survey research, and particularly survey sampling.

William Gemmel Cochran was a great human being and a superb statistician whose contribution to us and to our discipline will be with us forever.

5.2 GRAHAM KALTON : NEW FELLOW 1980 OF THE AMERICAN STATISTICAL ASSOCIATION

Graham Kalton, Research Scientist, Survey Research Center and Professor of Biostatistics, University of Michigan ; for original contributions to survey methods, sampling techniques and nonsampling errors as well as excellence in expository writing and teaching ; and for valuable consulting services in the field of medical and health statistics.

5.3 FUSION OF THE FUNCTIONS OF IASS CORRESPONDENTS AND REPRESENTATIVES

It has appeared that the functions of IASS correspondent and representative were very close. Therefore, during the Paris meeting of September 22, 1980, which the IASS President, Executive Director and Secretariat attended, it has been decided to unite them.

From now on, the former IASS correspondents and representatives will bear the unique title of : representatives

Their task will consist in :

- getting the IASS known
- stimulating membership, and reminding "delinquent" members of their dues
- acting as intermediaries between IASS members of their countries and the Council
- providing information and bibliography for the Survey Statistician : information on current surveys, book reviews, papers to be mentionned in the bibliography, ...
- calling for methodological papers for the Survey Statistician.

LIST OF IASS REPRESENTATIVES

M. Adehossi (Niger)
O.O. Ajayi (Nigeria)
H. Al Shabarti (Irak)
M. Athanassopoulos (Greece)
V. Balaban (Yugoslavia)
B.A. Bailar (United States)
F.E. Betham (Western Samoa)
L. Biggeri (Italy)
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B. Boyes (United States)
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F. El Boustani (Syria)
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M. Gonzales (United States)
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T.B. Jabine (United States)
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Ms M. Vukovojac (Yugoslavia)
M.A. Wahab (Pakistan)

5.4 APPOINTMENT OF A NEW EXECUTIVE DIRECTOR

In 1979, Mr. Gérard THEODORE informed us (cf. the minutes of the IASS Session in Manila, Survey Statistician n° 3, June 1980), that he wanted to resign from his position as Excutive Director in the middle of 1980. I was authorized "to take whatever action called for".

I am most happy to announce the following :

i) Mr. THEODORE will continue to serve as Executive Director until the end of 1981 (the IASS session in Buenos Aires)
ii) The new Executive Director will be Mr. Jean HOSSENLOPP, Administrateur, Department COOP-D.O.M.-T.O.M. at INSEE (Paris, France).

I want to express our deep gratitude to Mr. THEODORE for continuing his invaluable service to the IASS and to say "Welcome on board" to Mr. HOSSENLOPP.

Tore Dalenius
President

5.5 . CORRECTION NOTE

The IASS 1979 Member Directory has been sent to all members of the Association during the last term of 1979.

The accuracy of the information in this Directory is dependant on the information supplied by the Associates. Please notify the Secretariat of any errors, changes on fames, title of position or official address. Send corrections to : M. Paul DAMIANI, IASS Secretariat,c/o INSEE, 18 boulevard A. Pinard, 75675 PARIS CEDEX 14, France.

5.6. REPORT OF THE COMMITTEE ON FUTURE DIRECTIONS OF THE ISI

The IASS members who would like to get a copy of the Report of the Committee on Future Directionsof the ISI may ask it from the IASS Secretariat. All remarks and suggestions about this report can be sent directly to the ISI Permanent Office, to the attention of Mr. Lunenberg, with a copy to Mr. G. Theodore, IASS Executive Director, c/o INSEE - 18 boulevard A. Pinard - 75675 PARIS CEDEX 14, France.

6. BIBLIOGRAPHY

WHAT IS A SURVEY ? - American Statistical Association

A new booklet has just been published by the American Statistical Association, entitled "What is a survey?", by Robert Ferber, Paul Sheatsley, Anthony Turner and Joseph Waksberg. The work was sponsored by ASA's section on Survey Research Mehtods, and its 24 pages include characteristics of surveys, how a survey is carried out, using the results of a survey and budgeting a survey.
The booklet is available without charge for up to 50 copies from the American Statistical Association, 806 15th st.N.W., Suite 640.Washington DC 20005. Additional copies are 25 ¢ each.
The booklet will be mailed free to all the members of the Association.

DATA COLLECTION IN DEVELOPING COUNTRIES - D.J. Casley, World Bank, Washington & D.A. Lury, University of Kent

The development of sampling theory is comparatively new. It provides a logical conceptual framework upon which to base estimates of the characteristics of a population from the results of an examination of a sample. The authors discuss the practical aspects of data collection in developing countries primarily, but not exclusively, within a sampling framework.
23.5x15.5 cm, 350 pp., 10 figures, diagrams, 5 tables,Clarendon Press

SURVEY METHODOLOGY/TECHNIQUES D'ENQUÊTE - vol. 5, n°1, June 1979. Statistique Canada

Contents :
Management of information : future trends, Peter G. Kirkham
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An empirical investigation of an improved method of measuring correlated response variance, A. MacLeod & K.P. Krotki
Selecting a sample of size n with PPSWOR from a finite population, G.H. Choudhry
On the inclusion of large units in simple random sampling, M.A. Hidiroglou
Unbiased estimation of proportions under sequential sampling, M.D. Bankier

RECOMMENDATIONS ON STATISTICS OF INTERNATIONAL MIGRATION - United Nations, Statistical papers, Series M, n°58, New York, 1980

GUIDELINES ON STATISTICS OF TANGIBLE ASSETS - United Nations, Statistical papers, Series 11, n°68, New York 1979

SCPR. A REPORT ON THE 1970's - Social and community planning research , London 1980

Contents : Introduction, The first 10 years, Funding organizations, Research undertaken , Survey operations, Work on survey methods, Financial summary.

SCPR PUBLICATIONS LIST 1980 - Social and community planning research , London 1980

SCPR SURVEY METHODS NEWSLETTER - Autumn 1980

SURVEY RESEARCH - Survey Research Laboratory , University of Illinois, Vol. 12, n°1, winter 1979-1980, n°2 spring 1980

This journal is recommended to the members of the IASS.

THE WORLD FERTILITY SURVEY - january 1979-december 1979, annual report, International Statistical Institute

WORLD FERTILITY SURVEY - TECHNICAL BULLETINS

- n°6/ Tech. 1365, April 1980 - Life table analysis, D.P. Smith
- n°9/ Tech. 1282 P, June 1980 - Linear models for WFS data, Roderick A. Little

BIBLIOGRAPHY OF POPULATION LITERATURE IN THE ARAB WORLD - United Nations, Economic Commission for Western Asia, Part I, non Arabic literature, 1980.

STATISTICAL POLICY WORKING PAPER SERIES

The US Federal Committee on Statistical Methodology sponsored by the Office of Federal Statistical Policy and Standards has published five working papers on specific statistical issues of concern to the US Federal Statistical System. The reports available in this series are :
Report on statistics for allocation of funds , GPO Stock number 003-005-00178-6, price S 2.40
Report on statistical disclosure and disclosure avoidance techniques, GPO Stock Number 003-005-00177-8, price S 2.50
An error profile : employment as measured by the current population survey, GPO Stock Number 003-005-00182-4, price S 2.75
Glossary of nonsampling error terms : an illustration of a semantic problem in statistics (a limited number of free copies are available from OFSPS).
Report on exact and statistical matching techniques , GPO Stock Number 003-005-00186-7, price S 3.50
Copies of these working papers as indicated, may be ordered from the superintendent of documents, US Government Printing Office, Washington D.C. 20402. Please use GPO stock number when ordering.

Report on statistics for allocation of funds should help administrators and drafters of future legislation in the US in reorganizing some characteristics of data and formulas used in distributing Federal funds to state and local governments.

The report on statistical disclosure and disclosure avoidance techniques should provide managerial and technical staff which publish or otherwise release data, appropriate methodologies to achieve adequate disclosure avoidance practices. Data releases both in tabulations and in the form of microdata are discussed in this report.

An error profile : employment as measured by the current population survey is a systematic and comprehensive account of survey operations that yield survey results. The errors in these results are discussed in the error profile. We expect that the error profile will prove useful to both users and producers of statistics. Thus, it should help to enhance the

users' appreciation of the limitations of the statistics. In addition, an error profile may guide the producers in their efforts to identify those survey operations which need to be redesigned and/or controlled better in order to improve the quality of the survey results.

The glossary of nonsampling error terms : an illustration of a semantic problem in statistics is not an exhaustive list of definitions of terms related to non-sampling errors, but rather the definitions demonstrate the semantic problem that certain terms may be used with different meanings, creating problems of communication among statisticians.
It is hoped that this glossary will enhance our awareness of the use of the same term for different concepts. The definitions included are taken mostly from published literature.

The report on exact and statistical matching techniques discusses applications of both exact and statistical matches. The report is intended to be useful to statisticians in determining when it is appropriate to use exact matching techniques or when it may be appropriate to use statistical matching techniques.

Statistical policy working paper 6, report on statistical uses of administrative records will be published soon by the Office of Federal Statistical Policy and Standards (by the end of 1980). This report discusses many statistical uses of administrative records in the US. In addition, this report is intended to inform managerial and technical staffs of the vast potential as well as difficulties entailed in augmenting current uses of administrative records for statistical purposes.

SAMPLE SURVEYS OF CURRENT INTEREST (13th report) - Statistical papers, series C, n°14, United Nations, 1979.

COMPUTER ABUSE RESEARCH BUREAU - Statistical Society of Australia, Newsletter n° 9, December 1979, p.7

THE PUBLIC ROLE OF STATISTICIANS - R. Tweedie, Statistical Society of Australia, Newsletter n°11, May 1980.

ESTIMATING THE COMPLETENESS OF DEATH REGISTRATION - S. Preston, K. Hill, Population Studies, vol. 34, n°2, July 1980. The population investigation committee, London School of economics, Londres.

TRAINING OF STATISTICAL OFFICERS AND OTHER OFFICERS OF THE REPUBLIC WHO REQUIRE QUANTITATIVE SKILLS TO PERFORM THEIR DUTIES EFFECTIVELY - W.A. Richards, The Statistician Journal of the Institute of statisticians, vol. 29, n°2, June 1980, Longman.

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POSTCENSAL ESTIMATES FOR LOCAL AREAS (OR DOMAINS) - N.J. Purcell, L. Kish, International Statistical Review, vol. 48, n°1, April 1980, 3-18.

A POLICY FOR POPULATION DATA COLLECTION SYSTEMS - V. Kannisto, Population bulletin of the United Nations, Economic commission for Western Asia, n°16, June 1979, 51-58.

MEMBERSHIP APPLICATION FORM

I wish to enroll as a member of the International Association of Survey Statisticians.

NAME : Mr. ☐ Mrs. ☐ Miss ☐ ..... First name (s) .....

Date of Birth : ..... Nationality : .....

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The official language of your IASS correspondance will be :

- English ☐
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I am aware that the membership dues have been fixed at 10.00 U.S. dollars (or the equivalent in other currencies) and that, exceptionnally for nationals of developing countries, these dues have been reduced to 5.00 U.S. dollars.

Modes of payment

☐ Cheque payable to the International Association of Survey Statisticians *

☐ UNESCO coupons (for countries with inconvertible currencies) *

☐ Bank account of the I.A.S.S. N° 4586-32 with the Banque Nationale de Paris - Agence Didot, 67 boulevard Brune, 75014 PARIS, France

☐ Other

* Sent directly to : Mr. Paul DAMIANI, IASS Secretary
c/o INSEE
18, boulevard Pinard
75675 PARIS CEDEX 14 - France

I have been recommended by : Signature :

INTERNATIONAL ASSOCIATION OF SURVEY STATISTICIANS

The International Association of Survey Statisticians (IASS) was created in 1973. The IASS is a section of the International Statistical Institute.

The objectives of the Association shall be to promote the study and development of the theory and practice of statistical censuses and surveys and associated subjects and to foster interest in these subjects among statisticians, organizations, institutions, governments and the general public in different countries of the world.

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Mr. Paul DAMIANI, I.A.S.S., c/o INSEE, 18 boulevard Adolphe Pinard, 75675 PARIS CEDEX 14, France

THE "SURVEY STATISTICIAN"

The Survey Statistician has replaced the IASS Newsletter. It is published periodically by INSEE, in English and French.

It contains practical information in sampling surveys : general information (proceedings of session and surveys, surveys in progress), papers (survey results, sampling technology), terminology, question/answer, education, news of the Association, bibliography.

Editor : J. Desabie, Inspecteur Général de l'INSEE, INSEE, 18 bd Adolphe Pinard, 75675 PARIS OEDEX 14, France

Editong Board : Messrs Dalenius, Desabie, Kish, Théodore

INFORMATION FOR PAPERS'AUTHORS

The papers sent to the Journal should not exceed 5 pages. They have to be typed with a double space. Two copies of these papers (in French or English) have to be sent to Mr. DAMIANI, at the IASS Secretariat (see address above).