International Statistical Institute

The survey statistician
n° 20

International Association
of Survey Statisticians

C O N T E N T S

*****

I - PARIS ISI SESSION..... 2

1.1. Workshop for survey statisticians..... 2
1.2. "Questions and answer" meeting..... 3

II - NEWS FROM THE ASSOCIATION..... 3

2.1. Recruitment of new members..... 3
2.2. Annulment..... 3
2.3. Timing for sending papers to the Survey Statistician..... 3

III - ANNOUNCEMENTS..... 4

3.1. INED seminar..... 4
3.2. U.S. Census Bureau Fifth Annual Research Conference (ARC V).. 4
3.3. Pavia congress : Income distribution by size : generation, distribution, measurement and application..... 5
3.4. New books..... 7
3.4.1. Survey Methods of Statistics, by H. STRECKER..... 7
3.4.2. Statistical Design for Research, by L. KISH..... 8

IV - QUESTION/ANSWER..... 9

V - STATISTICAL ABSTRACTS..... 11

DECEMBER 1988

I - PARIS ISI SESSION

1.1. Workshop for survey statisticians

The International Association of Survey Statisticians (I.A.S.S.) will sponsor a workshop for survey statisticians from developing countries immediately preceding the meeting of the International Statistical Institute (I.S.I.) in Paris, France, on August 27 - 29, 1989.

The expenses for some participants to attend the workshop and the I.S.I. will be paid for by the I.A.S.S., through funding provided by compagnies and agencies worldwide. Persons interested in attending should prepare a two or three page summary describing an aspect of their work. The summary should include one or more specific issues or problems. Some examples of broad topics are : agricultural surveys, household surveys and policy development. Examples of issues are : choice of frame for sampling, sampling unit, estimation and weighting. The summary should be as specific as possible so that resource people with experience in the topic can be recruited to help at the workshop. Participants will be selected on the basis of this summary.

The language of the workshop will be English. No translation facilities will be available. The workshop will be coordinated by Dr. Barbara Bailar, President-Elect of I.A.S.S.

Statiscicians who would like to be considered for inclusion should write as soon as possible to Dr. Bailar at the address given below. Decisions on applications will be made in early 1989 and applicants should respond without delay to this announcement.

Applications should include :

(I) A brief outline (500 words) of a suitable topic for the Workshop.

(II) As much information as possible on travel costs from the applicants home to Paris.

(III) A statement describing any financial support already available to the applicant.

(IV) A brief description of education and work experience including current position.

(V) Adress, telephone and telex numbers to enable fast communication.

Applications should be sent to :

Dr. Barbara A. Bailar
Executive Director
American Statistical Association
1429 Duke Street
Alexander, VA 22314-3402

1.2. "Questions and Answers" meeting

The International Association of Survey Statisticians (IASS) is willing to organize a "Questions and Answers" meeting at the 47th ISI Session in Paris, August 29-september 6, 1989, provided that a demand for such a meeting emerges from its members.

The purpose of the meeting is to provide opportunities for survey statisticians, especially from developing countries, to raise questions on design, organization, field operations, analysis and dissemination of results for surveys and observational studies (e.g. : agricultural surveys, household surveys). These questions will be answered from, and discussed with a panel of experts.

In order to ascertain that there is a real demand for such a meeting, and possibly to organize it, persons interested in attending should write a brief summary of the question (s) they would like to be discussed at the meeting. Please, write no later than April 30, 1989 to :

Mr. Bernard Grais
IASS Deputy Executive Director
INSEE
18, Bd Adolphe-Pinard
75675 Paris Cedex 14
France

II. NEWS FROM THE ASSOCIATION

2.1. Recruitment of new members

The association is carrying out a recruitment drive to increase its membership. With a larger membership, the Association will be able to achieve its aim of promoting the study and development of the theory and practice of sample surveys and censuses more effectively, and it will be able to increase the services it provides its members. Local Representatives are currently engaged in trying to attract new members into the Association. All members of the Association are asked to help in the recruitment process by encouraging survey statisticians who are not members of the Association to join. Membership application forms can be obtained from local representatives or from the IASS secretariat 18 boulevard Adolphe Pinard 75675 Paris Cedex 14, France.

2.2. Annulment

The IASS-INSEE workshop which was to be held in NIAMEY (see SS n° 18,3.5) in november 1988 is annulled for extraneous reasons.

2.3. Timing for sending papers to the Survey Statistician

To be published in the Survey Statistician, articles, announcements and other papers should reach the editor or the Secretariat of the Association at the following dates :

- before April 1st for publication in the June issue

- before October 1st for publication in the December issue.

III. ANNOUNCEMENTS

3.1. INED Seminar : observation and analysis methods in surveys.

The field branch and the socio-demographic division of the french Institut National des Etudes Demographiques (INED) organize a seminar on observation and analysis methods in social, economic and demographic surveys.

Meeting will take place at INED, once a month from November to June, first not holiday tuesday from 4 p.m. to 6 p.m. Every interested research worker may attend, whatever his institute may be. A paper introducing the subject will be sent in advance on request.

Contributions will involve methodological aspects,but unpublished results will obviously be welcome. Field or analysis methods which will be presented have not to be original : any experience potentially useful for other survey organisers will be welcome.

Last but not least, the seminar will go beyond quantitative aspects : qualitative methods, particularly about field work, will be considered.

The first meeting took place on 8 november 1988, devoted to questions formulation and measurement errors.

If interested please contact :

B. RIANDEY or H. LERIDON, INED, 27, rue du commandeur. 75675 Paris Cedex 14. Tel : (1) 43.20.13.45.

3.2. U.S. Census Bureau's Fifth Annual Research Conference (ARC V).

ARC V is scheduled to begin Sunday evening, March 19, and run through 2 p.m. on Wednesday, March 22, 1989, at the Holiday Inn Crowne Plaza (formerly the National Clarion Hotel) in Arlington, Virginia, USA.

ARC V will address a wide variety of topics such as nonsampling errors, new techniques in questionnaires design and analysis of longitudinal survey data. The sessions will address : new Directions for Some Household Surveys and Associated Research Needs ; Administrative Records in Censuses ; Edit and Imputation ; Coverage Measurement ; Disclosure Avoidance ; Implications of Cognitive Research for Census Questionnaire Design ; Longitudinal Household Survey Methodology ; Cognitive Research of Survey Questionnaires ; Analysis of Longitudinal and Cross-sectional Data ; Nonsampling Error ; Panel Studies of the Elderly Population ; Agricultural Statistical Issues ; Management's Contribution to Innovation in Statistical Agencies ; Field Operation Issues ; and Databases and Software.

For additional information contact Maxine Anderson-Brown, Office of the Director, Bureau of the Census, Washington, DC 20233, USA, 301/763-1150.

3.3. Income Distribution by size : generation, distribution, measurement and application, a meeting to be held in Pavia (Italy), 28-30 sept. 1989.

Organiser : Prof. M. ZENGA, Instituto di Scienze Statistiche e Matematiche "M. Boldrini", via del conservatorio, 7. 20 122 - Milano (Italy).

Provisional agenda :

1 - INCOME DISTRIBUTION : models and applications

Chairman :

Speakers :

- Camillo DAGUM (University of Ottawa)
  Origins and properties of income distributions ;

- Renata TARGETTI-LENTI (University of Pavia)
  Functional distribution, individual distribution and structure of the economic system ;

- Luigi BERNARDI (University of Urbino)
  Recent analyses of the distributive effects of the state budget in Italy.

2 - THE CAUSAL STRUCTURE OF INCOME DISTRIBUTION

- Luigi BIGGERI et al (University of Florence)
  The principal determinants of income distribution among various groups ;

- Marisa CIVARDI (University of Pavia)
  Income multipliers in the family institutional sector ;

- Camillo DAGUM (University of Ottawa)
  The distribution of inherited wealth and its influence on income distribution ;

3 - STATISTICAL SURVEYS AND DATA ON THE DISTRIBUTION OF INCOME AND EXPENDITURES

Chairman : Aldo PREDETTI (University of Milan)

Speakers :

- Luigi BIGGERI (University of Florence)
  General considerations on the various Italian and foreign surveys, with particular reference to their insufficiencies ;

- Luigi CANNARI (Bank of Italy)
  Surveys by the Bank of Italy and other financial institutions on income, expenditure, savings and inheritances ;

- ... (ISTAT)
  The quantitative distribution of income in Italy on the basis of surveys of household budgets ;

- ... (Statistics Canada)
  to be announced ;

- ... (U.S. Bureau of the Census)
  to be announced ;

- ... (U.S. Bureau of Employment Statistics)
  to be announced ;

Presentations are also planned by officials of the central statistical agencies of other countries.

4 - CONCENTRATION DIAGRAMS : MODELS, MEASUREMENTS AND APPLICATIONS

- Michele ZENGA (University of Milan)
  Concentration curves and the concentration indexes derived from them ;

- Livia DANCELLI (University of Brescia)
  Effects of truncation on the Z (p) curve in the Dagum model ;

- Angiola POLLASTRI (University of Milan)
  Concentration diagrams and inequality indexes in the generalized log-normal model ;

- Tiziano SALVATERRA (University of Trento)
  Evolution over time of concentration diagrams and measurements in Italy.

5 - MEASUREMENT OF THE INEQUALITY OF ECONOMIC MAGNITUDES

- Vittorio AMATO (University of Messina)
  Three-dimensional matrix for the study of the simultaneous evolution of the population structure and the income structure ;

- Giuseppe CARBONARO (University of Rome)
  Global indicators of poverty ;

- Eugenio REGAZZINI (University of Milan)
  Extension of the classic concentration scheme.

6 - INFERENCE AND DECOMPOSITION* PROBLEMS IN THE MEASUREMENT OF INEQUALITIES

Chairman : Gianpiero LANDENNA (University of Milan)

- Giovanni LA TORRE (University of Calabria)
  Asymptotic distributions of concentration indexes : empirical verifications and applications ;

- Agostino TARSITANO (university of Calabria)
  Inference and decomposition problems with the Bonferroni concentration index ;

- Giampaolo ZANARDI (University of Venice)
  Decomposition of the concentration ratio ;

- Vittorio FROSINI (Catholic University of Milan)
  Decomposition of measurements of inequality ;

- Roberto COLOMBI (University of Brescia)
  Paretiana mixture* ;

- Achille LEMMI (University of Siena)
  Dagum distribution mixtures* for fiscal forecasting.

3.4. New books

3.4.1. Survey Methods of statistics, selected papers of Heinrich Strecker. Beckmann, Martin J./Wiegert, Rolf (Edts).

Schriftenreihe : Angewandte Statistik und Okonometrie - Applied Statistics and Econometrics, N° 30, 1987, 342 pages, price : 88 DM, Publishers : Vandenhoeck and Ruprecht - D 3400 Göttingen.

This is a collection of contributions by Heinrich Strecker to the theory and practice of statistical surveys. Topics include agrarian statistics, errors in general and non-sampling errors in particular, applications of operations research methods, and the variate difference method. As the result of many years of research and collaboration with official statistical agencies they should prove to be of considerable interest. Included are also some previously unpublished papers in applied statistics. All papers are in German or English, those dealing with statistical errors in surveys and the variability of answers are written in English.

Heinrich Strecker is Professor of Statistics in the University of Tuebigen (Federal Republic of Germany).

3.4.2. Statistical Design for Research, by Leslie Kish, Professor Emeritus, University of Michigan.

A volume in the Wiley Series in Probability and Mathematical Statistics : Vic Barnett, Ralph A. Bradley, J. Stuart Hunter, David G. Kendall, Adrian F. M. Smith, Stephen M. Stigler, Geoffrey S. Watson ; Advisory Editors.

Even before statistical data are collected for research, essential decisions of design must be made, decisions which will have significant effects on the validity and efficiency of studies. Yet virtually the entire literature on statistics addresses concerns of analysis -- and glosses over the crucial issues of collection and selection, issues that go to the heart of the methods and philosophy of the field.

STATISTICAL DESIGN FOR RESEARCH delves into the criteria and decisions that underlie accurate, valid methodology. It pursues the uses and ramifications of three distinct design methods : experimental designs, survey sampling, and controlled investigations. Stressing the importance of the basic choice among these design strategies, the treatment explicates the analytical uses of sample surveys ; designs for comparisons ; controls for disturbing variables ; samples and censuses ; sample designs over time ; and several distinct problems over time. Throughout, coverage is broad enough to encompass the common considerations in many related fields, including the social sciences, health sciences, education, and market research. It can serve as a textbook for university courses and as a source book for research workers. The text is enhanced by 37 tables and figures, over 50 problems, and a comprehensive list of references, notated to indicate the section where each is cited in the text.

By claiming for statistics the usually neglected primary aspects of research design, STATISTICAL DESIGN FOR RESEARCH will produce more accurate, practical, and economical designs for future statistical analysis.

Table of contents :

Representation, Randomization, and Realism. Analytical Uses of Sample Surveys. Design for Comparisons. Controls for Disturbing Variables. Samples and Censuses. Sample Designs Over Time. Several Distinct Problems of Design.

About the Author : Leslie Kish is Professor Emeritus at the University of Michigan where he was a founder (1947) of the Institute for Social Research and selected as Henry Russell Lecturer for 1981. He is the author of Survey Sampling (Wiley, 1965) and of many articles. Dr. Kish was President of the American Statistical Association (1977), and of the International Association of Survey Statisticians (1983-1985). He is an Honorary Fellow of the Royal Statistical Society and a member of the International Statistical Institute.

Price : $ 34,95, plus local sale tax, postage and handling mail coupon to :

Wiley Interscience
605, Third Avenue
New York
New York 10158
(Attention : L. Sullivan, 5 th floor)

IV. QUESTION/ANSWER

Conducted by Leslie Kish. Please send Questions to him (ISR - The University of Michigan, Ann Arbor, MI 48106, USA, TELEX 4320815, FAX 313-747-4575), or to IASS, Paris. Please indicate whether or not you want your name given with the question. This has become an open forum, and we shall gladly print (after refereeing) additions, modifications, discussions of past published answers. Contributors to answers will be acknowledged if they agree.

N°. 20.1 Question : "Despite the availability of good computer packages for statistical data analysis since the sixties and early seventies, only more recently have we seen the appearance of good packages to perform the analysis of data derived from surveys with complex designs, such as OSIRIS, SUPER-CARP AND PC-CARP. But none of these packages is complete, in the sense of providing tools for the sample selection, even according to the most common designs. A) Do you know about any integrated software package for sample selection and subsequent analysis ? B) Do you know about more recent and effective algorithms for sample selection using computers than would be the texbook algorithms, which were mainly developed for manual operation ?"

Answer : We invite brief answers from our readers ; references to published advice and to descriptions of pratical and adaptable procedures will be especially welcome. We need to distinguish a) situations where the selection can be applied to frames of populations that are listed on available tapes, from b) others, where samples of addresses or segments must be constructed, obtained and maintained. For the simpler situation of good population registrers one may refer to the work of Statistics Sweden. For the latter, more troublesome cases an example may be found in The 1980 SRC National Sample (Chapters IV and V) by Heeringa, Connor and Darrah (1986), Ann Arbor : ISR.

Programs that have been used for one office are not likely to be readily and completely available and directly usable in other situations. However, we do hope that the problems encountered, and the solutions found and described for some solutions, can be useful when carefully studied and adapted to other situations. We should be especially interested in complex samples, in frames without available, clean lists of the population, in area samples, and in adaptability for developing countries. Please send such references for publication here in Q/A and also for transmittal to the questioner.

N°. 20.2. Question : "I have just read your Q & A column in the IASS newsletter (N°. 19). I agree with much of your answer. But there is an aspect of the problem which is not addressed, as is usually the case. This has to do with the meaning of the word "bias". The concept involves the notion of a "true" value which is to be estimated on the basis of the survey data. The "true" value is presumably the outcome of a standard data collection process. For example, the "true" value of a person's birthdate may be defined as the date shown on that person's registered birth certificate if such a certificate exists or the date given by the testimony of an attendant at the birth if a certificate does not exist. Note that this is a definition ; there are people who insist that the date shown on their birth certificates are not correct. Nevertheless, a "true" value cannot be defined except as the outcome of a specified standard procedure. The standard procedure may be difficult and costly to carry out or may even be impossible. In some cases it can, and has been, carried out. For example I recall a sample survey in which one item was the size of the respondent's bank account. To estimate the bias of response, a subsample (it may have been all) of the responses were compared with the bank's record of the same date. As I recall, the results showed that large accounts were under-reported and small accounts over-reported by respondents. When the acceptable standard procedure is costly and a less costly procedure may be badly biased, the bias can be eliminated or greatly reduced by the use of double sampling. This involved using the less costly procedure on a fairly large sample, and the costly procedure on a subsample of the large sample. The variance of the resulting estimate is controlled by the allocation of the sizes of the large sample and the subsample and is also a function of the correlation of observations on an individual unit by the two procedures. Double sampling is often useful, but it is not used often enough. Another aspect of the problem is that some components of the variance may not be reflected by the estimated variance".

Answer : We are grateful to Dr. Benjamin J. Tepping for his contribution to this topic. It is well stated, and it provides an extreme example (bank accounts fixed to specified dates) when operational definitions give fixed "true" values. However, many (or most ?) of empirical data (social, economic, biological, physical) lack such precisely fixed "true" values. Thus researchers and scientists often resort to superpopulations from which the population values are regarded as samples. For example, I recently wrote of : "a) The area of the ozone hole over the south Pole. b) The number of red blood cells in all your blood or in 1 cc of it. c) The population of Chicago. d) The number of unemployed in the USA. While you read that paragraph all of those magnitudes have changed. Therefore replicate measurements taken at the two ends of that brief period would contain both strictly "measurement (instrumental) errors" (including the effects of the measurements themselves) and changes in the subjects (populations). Thus these "chance (or random) replications" contain both strictly instrumental errors and also basic chance variations, the chance effects of the objective world beyond the observer's control". Elsewhere I referred to four kinds of populations [Kish, Statistical Design for Research, Wiley 1987, Section 2.1., and Survey Statistician N° 14, June 1986].

N°. 20.3 Question : For our health intervention research we have a single "treatment" city plus a single "control" city to match. Within each city we listed and selected households directly. How can we compute good and "unbiased" estimates of standard errors ? (This was paraphrased from a longer question).

Answer : This is a common problem in health and other kinds of research. In Q/A of SS 18 (December 1987) I tried to point to several paths out of this dilemma and I continue to ask my colleagues for other statements on it. We may expect more research in this area in the future (10 years ?). In many cases more cities, especially of the less expensive controls, may be preferable [Kish, Statistical Design for Research, Wiley 1987, Section 3.1]. Here, and in many other situations, it is most important to obtain a good sample design at the start, because it may be too difficult to correct an inadequate design later with statistical analysis techniques.

N°. 20.4 Question : In three epsem samples of households from a city in the USA (1981, '83, '85) we selected a single "adult"18-65 years old from each household. the percentage distribution by number of "adults" (W) was : 1) 26, 2) 53, 3) 13, 4) 5, 5) 2, 6 plus) 1. Your formula of (Wk) (W/k) yields 1.20 as "design effects" due to weighting for numbers of adults, inversely related to selection probabilities. This is considerably higher than you show in Survey Sampling, Section 11.3. Is it correct ? Should I use it to correct my variances ?

Answer : You are correct, and the higher factor is due to fewer households with two adults and more of the others, especially with single adults. I fear that you better use it to "correct" srs variances, along the lines advocated in Survey Sampling n° 17, June 1987.

V. STATISTICAL ABSTRACTS

5.1. AUTHOR : Roy F. Bartlett

TITLE : Sampling from a Finite Population in the Presence of Trend and Correlation : Estimation of Total 305-day Lactation Production in Cattle.

JOURNAL : Canadian Journal of Statistics, 1986, 14 : 201-210

This paper studies the estimation of a finite population total in the presence of trend. A practical problem of dairy science is to estimate a cow's total 305-day milk production given a number of test-day records. We analyse this problem as one of estimating the total of a discrete population when the population values are correlated and exhibit a trend over time. We use a superpopulation model whose stochastic structure ξ is specified or partially specified and consider the estimation of a realization of the superpopulation total

$$T = \sum_{i=1}^{N} Yi \ .$$

Linear prediction estimators that are BLUE for a known covariance matrix and a trend function linear in unknown parameters were applied to the estimation of the milk yield total. Six BLUE estimators were studied (1) linear estimator, (2) quadratic estimator, (3) cubic estimator, (4) linear-spline estimator, (5) gamma-2 estimator, and (6) gamma-3 estimator where these estimators take their names from the trend curve assumed for each. An empirical study compares the BLUE estimators with the expansion estimator and the procedure currently used by the Canadian Record of Performance for Dairy Cattle. Possibly the main implication for future work is that the paper shows that it is now practical, for small populations, to construct estimates that account for non-linear trend and a generalized population covariance matrix when suitable data banks are available.

5.2. AUTHORS : John C. Duffy and Jennifer J. Waterson

TITLE : Randomised Response vs direct Questioning : Estimating the Prevalence of Alcohol Related Problems in a Field Survey

JOURNAL : Australian Journal of Statistics, 1988 Vol 30, N° 1

1500 adults selected for a population survey from the City of Edinburgh Electoral Registers by probability sampling were allocated to randomised response interview or direct interviewer at random. These alternative interviewing strategies were adopted for two questions relating to alcohol related problems which might be considered stigmatising. There were no significant differences in reporting between the two methods. The apparent failure of the randomised response method to increase estimates of the proportions with the attributes indicates either that traditional methods are satisfactory for the collection of this sensitive information, or that randomised response was not an acceptable alternative. In the absence of any external validating data it was not possible to say which of these explanations is correct.

5.3. AUTHORS : V.K. GUPTA and A.K. NIGAN

TITLE : Mixed orthogonal arrays for variance estimation with unequal numbers of primary selection per sratum

JOURNAL : Biometrika (1987), 74, 4, pp 435-42

For estimating the variance of nonlinear statistics in large-scale complex surveys, the method of balanced repeated replications has received special attention. The method at present is useful in stratified clustered designs with equal number of primary selections from each stratum. This paper extends the method to general sample designs with arbitrary number of selections from each stratum. It is shown that mixed orthogonal arrays of strength two, or equivalently, equal frequency orthogonal main-effect plans for asymmetrical factorials give a set of balanced subsamples useful in variance estimation.

Reprint requests should be sent to : Dr. V.K. Gupta, Indian Agricultural Statistics Research Institute, Library avenue, New Delhi, 110012, India.

5.4. AUTHOR : Paul T. Jackway and Rosalie A. Boyce

TITLE : reponse inducing techniques for mail surveys

JOURNAL : Australian Journal of Statistics (1987), 29 (3), pp 255-263

This article describes the results of various techniques used to improve response rates in a mail survey of hospital based health professionals. The study followed a 54 % response rate to the initial surveys.

Two response inducing techniques were tested

- Use of Priority Paid mail (the Australian equivalent of American first class mail)

- Use of return envelopes with postage stamps already adhered

The sample size was relatively small (87), but even with this sample, the use of Priority paid mail significantly improved response rates (from 74 % to 95 %). The use of stamped enveloped improved response rates (from 73 % to 86 %) but this was not significant.

The study also showed that most non-response is passive and potentially convertible.

An interesting comparison is made of two surveys, the first without a specified closing date and the second with a closing date. The response rates were considerably faster for the second survey.

Reprint requests should be sent to : Dr. Paul T. Jackway, University of Queensland, Australia.

5.5. AUTHOR : D.G. Steel and W. Cannon

TITLE : A Second Investigation of Rotation Group Bias in the Monthly Labour Force Survey

JOURNAL : Statistical Services Papers, Australian Bureau of Statistics (1988, Vol 16, N° 1).

On average, higher estimates of unemployment are obtained from dwellings included in the Monthly Labour Force Survey for the first time. However, the effect is considerably less than that reported for USA but comparable to that reported for Canada.

The paper isolates those groups in the population in which the effect is more predominant. It is found that the effect is higher for females. The analysis also suggests that the effect is strongest for married females.

Reprint requests should be sent to : D.G. Steel (Editor) C/ PO Box, 10, Belconnen, 2616, Australia.

INTERNATIONAL ASSOCIATION OF

SURVEY STATISTICIANS

18, boulevard Pinard
75675 PARIS-CEDEX 14-FRANCE

MEMBERSHIP APPLICATION FORM

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

Mr. |__|

NAME : Mrs. |__| ..... First name (s) : .....

Miss |__|

Date of Birth : ..... Nationality : .....
Profession : ..... (if retired, please indicate)
Title (professor, doctor) : .....
Business address :
Name of office : .....
Street : ..... N° : .....
City : ..... Postal code : .....
Country : .....
Telephone N° : ..... Extension : .....

Home address :
Street : ..... N° : .....
City : ..... Postal code : .....
Country : .....
Telephone N° : .....

IASS correspondance should be sent to :

- Business address |__|
- Home address |__|

Your mother tongue is : ..... (Please specify)
The official language of your IASS correspondance will be :

- English |__|
- French |__|

Which field(s) of survey work are you specially interested in ?

1. Theory of surveys ..... |__|
2. Collection of data ..... |__|
3. Data processing ..... |__|
4. Quality of data : errors of measurement, sampling errors, non-sampling errors
5. Analysis of survey data ..... |__|
6. Other (please notify) ..... |__|

Which field(s) of application are you specially interested in ?

1. Demographic statistics ..... |__|
2. Housing statistics ..... |__|
3. Industrial statistics ..... |__|
4. Statistics of Commerce and Services ..... |__|
5. Agricultural statistics ..... |__|
6. Socio-economic studies of households ..... |__|
7. Market research and opinion surveys ..... |__|
8. Education ..... |__|
9. Other (please specify) ..... |__|

I am aware that the membership dues have been fixed at 130 F. Francs (or the equivalent in other currencies) and that, exceptionnally for nationals of developing countries, these dues have been reduced to 65 F.F.

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 : Mrs. A.M. VESPA-LEYDER, IASS Secretary
c/o INSEE
18, boulevard Pinard
75675 PARIS CEDEX 14 FRANCE

I have been recommended by : Date : Signature :