

INTERNATIONAL STATISTICAL INSTITUTE

INTERNATIONAL ASSOCIATION OF SURVEY STATISTICIANS

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1. editor's letter

The Editor and the Editing Board thank the IASS representatives and members for the informations and the papers they sent.

They are glad to announce a spanish version of the Survey Statistician made by the Spanish National Institute of Statistics. That version will start at this issue, and will be broadcasted by this Institute to the spanish-speaking members or to the ones who would ask for it.

2. general information

2.1 First international conference on statistics teaching, August 9-13, 1982, Sheffield, England

This conference was organized by the International Statistical Institute. The IASS was represented by prof. D. Singh and H. Midzuno. In this conference, the problem of improving the education on statistical information collection has been pointed out. It has been decided to create an informal group ISI-IASS in order to make a preparatory document to be examined in the next congress in Madrid.

2.2 Seminar on surveys and censuses, November 15-22, 1981, Dakar, Senegal

The definitive report of this seminar is available at the IASS secretariat.

2.3 The activities of the Munich Center for advanced training in applied statistics for developing countries

The program of the Munich Center for 1982 for the economist-statisticians of developing countries has been the following:

- regional seminar on the world census of industry in Addis Ababa at the siege of the Economic Commission for Africa from January 11 to February 12, 1982
- lessons in English on household surveys from March 1982, in French from September 1st to December 16, 1982

2.4 Advanced workshops in survey methods: questionnaire design, SCPR Survey Methods Centre, University of York, September 21-24, 1982

This is the second workshop on the different aspects of survey methods organized by the Survey Methods Centre of SCPR (Social and Community Planning Research), 35 Northampton Square, London EC1V 0AX, England. The purpose was to join together 20 to 30 research workers, survey experts and theoreticians interested by a definite subject, in the circumstances a questionnaire design.

2.5 International meeting on analysis of sample survey data and sequential analysis, June 14-18, 1982, Jerusalem

Several themes were proposed concerning the analysis of sample survey data:

- Categorical data analysis
- Design effects for complex statistics
- Analysis based on time-related models
- Treatment of non-response
- The use of auxiliary information in model-based analysis
- Analytical survey

Some points have been particularly discussed:

- The effect of sampling design on the quality of the estimators (means' estimates-effect of stratification and of multi-stage sampling-use of logistic models).
 - Analysis based on time-related models (example: use of negative binomial functions in the study of consumers' buying behaviour)
 - The discussion then pointed out sampling modalities needed to reduce the effect of non-response: random initial sample size and fixed size final respondent set, or fixed initial sample size and random-size final respondent set
- The possibilities of econometric approach for imputation were chiefly evocated; they seem not to be very performing
- Practical examples of survey studies, centered around analysis tools and their adequacy

2.6 European Statisticians Conference, June 1-4, 1982, Geneva

In the area of the methodological statistical studies of the European Statisticians Conference, Economic Commission of the United Nations for Europe, a second meeting on the problems of household surveys took place in Geneva from June 1st to 4th, 1981. Some experts from about twenty countries or international organizations were participating. The methodological themes pointed out were:

- Problems of longitudinal panel surveys and sampling schemes
- Treatment of non-response
- Evaluation studies

2.7 Workshop on the organization and development of the national statistical services, Florence, Italy, March 1st- May 20th, 1983

The Foundation of Research and International Studies of Florence organizes in Florence, in cooperation with the Statistical Department of the University of Florence and the Central Statistical Institute of Rome, a workshop on the organization and development of the National Statistical Services in developing countries. This workshop is made for senior civil servants from national statistical services of english-speaking african countries. Practical questions about the administrative and technical organization of these services and on the surveys methodology will be pointed out, in relation with the professional experience of the participants.

For more informations, contact: Professor Luigi Biggeri, c/o Fondazione di Ricerche e Studi Internazionali, Via Laura 60, 50121-Firenze, Italia.

2.8 Seminar "Social Research and Prediction", Amsterdam, Netherlands, November 24-26, 1982

The European Society for Opinion and Marketing Research organizes from November 24 to 26, 1982, in Amsterdam, Netherlands, a seminar "Social Research and Prediction".

For any information, contact: ESOMAR Central Secretariat, Wamberg 37, 1083 CW Amsterdam, Netherlands.

2.9 Conference on the improvement of the quality of data collected by Data Collection Systems, Oak Ridge, Tennessee, USA, November 11-12, 1982

This conference is organized by the National Laboratory of Oak Ridge in support of the Office of Naval Research of the United States. It takes place on November 11 and 12, 1982, in the American Museum of Science and Energy of Oak Ridge. Its purpose is to join together the experts in data quality and to determine the possibilities of development of a research program to improve this quality.

For any information, contact: T. Wright, Union Carbide Corporation, Nuclear Division, P.O. Box Y, Bldg 9704-1, Oak Ridge, Tennessee 37830, USA.

3. papers

A Note on Symbolic Representation of Survey Designs

By M.N. Murthy
(Statistical Institute for Asia and the Pacific, Tokyo)

The idea here is to devise a system to present survey designs in a compact/abbreviated form for use among professional people of the subject just as the use of symbolic form in chemistry to represent elements and compounds. The symbolic form suggested here can form a meaningful part of the Sample Design Information System suggested by Horvitz (1978). As is generally the case with any new script or language, the system of symbolic specification of survey designs suggested here may appear to be complicated and even confusing in the initial instance, but with increasing usage, it is likely to become standardized and hence easy to learn and remember. It is possible to devise similar systems of symbolic representation for other fields of statistics such as design of experiments and statistical quality control.

For purposes of symbolic representation, the following basic aspects of survey design are considered :

- 1 - type of survey (ad hoc/continuing/repetitive ; uni-subject, multisubject with complete integration, partial integration and no integration) ;
- 2 - data collection (type of enumerators - full-time, part-time, permanent ; temporary ; technique of data collection - physical observation, personal interview using schedule or questionnaire, enquiry by mail or telephone, method of registration, transcription from records) ;
- 3 - periods relevant to survey (survey period, reference period, reporting period with number of visits) ; (Murthy, 1967).

In the suggested system of symbolic specification of a survey design, the sample design of a survey is considered to have the following five parts :

- 1 - type of sampling (uni-stage, multi - stage/phase with information on number of stages/phases) ;
- 2 - selection scheme (stratification, no stratification; sampling frame - area, list with year and sampling unit; basic selection scheme - simple random sampling, systematic sampling, varying probability sampling with their variations and sample size) ;
- 3 - self-weighting nature of the design ;
- 4 - estimation procedure (parameters to be estimated and types of estimator used);
- 5 - assessment of sampling and non-sampling errors (provision for computation of sampling bias and variance, non-sampling bias and variance ; information on percentages of non-contacts and refusals and on design effects (Kish, 1965) or efficiencies).

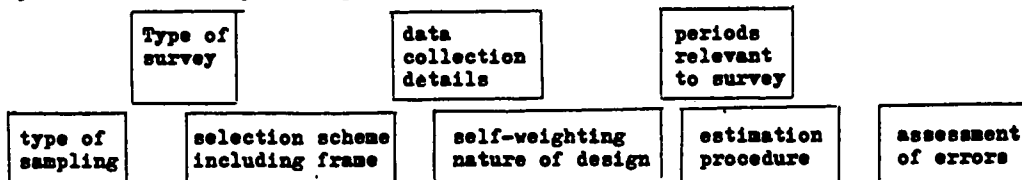
In the representation of survey designs the basic aspects would be given in three main positions and the sample design in five main positions to correspond to the aspects enumerated earlier. Sub-positions will be used whenever found necessary.

It is important to give information for all main and sub-positions and lack of information is to be indicated by the symbol ϕ . The main positions or sub-positions can be expanded or modified to cover other aspects of sample and survey design not specifically covered in this note.

The basic principles of the suggested system are based on the following guidelines :

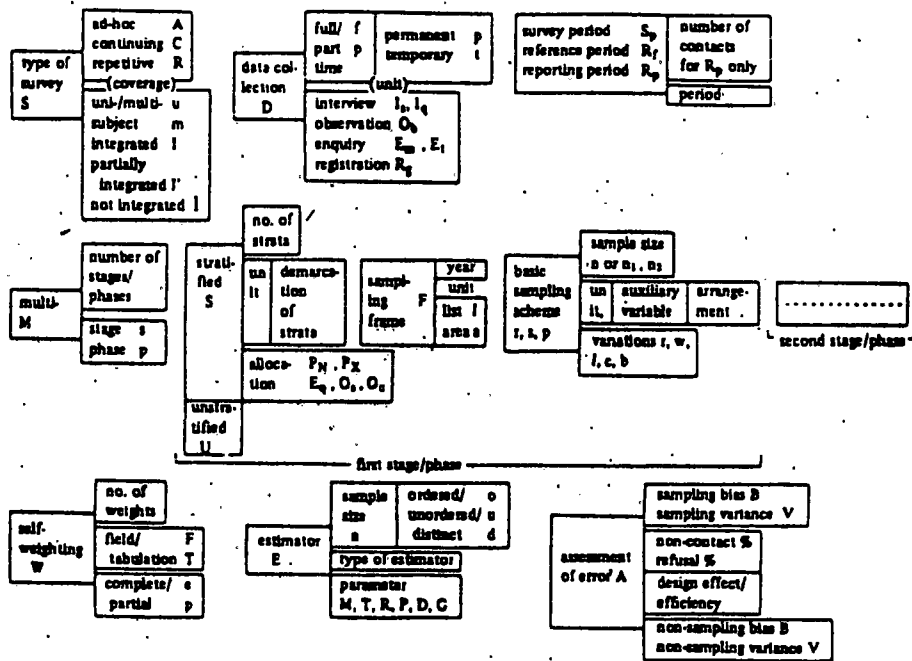
- (i) mainly English alphabet letters will be used to enable use of ordinary type-writer to give the symbolic representation ;
- (ii) only limited information will be given to keep the representation as simple as possible ;
- (iii) complicated situations requiring more information will be indicated with an asterisk* followed by the number of the footnote where this situation is explained ; and
- (iv) a main symbol, superscript space, subscript space and middle space will be used to give information on the particular aspect under consideration.

The following two formats are used to give information on the basic aspects of survey designs and particulars of sample designs respectively :



The suggested structure of symbolic representation of survey design is given in a schematic form.

STRUCTURE OF SYMBOLIC REPRESENTATION OF SURVEY DESIGNS



A description of the survey design of the thirty-second round of the Indian National Sample Survey (NSS, 1977) is used to illustrate the application of the system of symbolic representation suggested in this paper. The NSS is a continuing integrated multi-subject sample survey conducted in the form of rounds of one year duration, where data are collected from sample households by full-time permanent field staff through the method of personal interview using the schedule approach. The reporting period is 7, 30 or 365 days preceding the date of survey depending on the nature of items canvassed. Since the survey period is one year and the samples are evenly spread over time, the reference period, that is the period to which the tabulated data relate is also one year with overlap with the survey period.

The sample design is a stratified two-stage one with districts or parts of districts forming 516 strata and with villages which are area units and households as the first stage units and second stage units respectively. The sample size consists of 8136 villages at the first stage and 12 households per sample village at the second stage. The allocation to the strata is done in proportion to the 1971 census population, the villages are selected with probability proportional to the 1971 census population with replacement and households are selected circularly systematically after arrangement according to their means of livelihood. Usually population proportions, totals and means are estimated using unbiased or ratio estimators. The sample is selected in the form of two interpenetrating sub-samples to enable easy computation of sampling variance.

The symbolic specification of this survey design is given below :

$$S_{NI}^C \text{ (national)} D_{Is}^{fp} \text{ (hh)} Sp \left(\begin{matrix} \text{one} \\ \text{year} \end{matrix} \right) R_f \left(\begin{matrix} \text{one} \\ \text{year} \end{matrix} \right) R_p^1 \text{ (7, 30, 365 days)}$$

$$M_s^2 S_{Pr_i}^{516} \text{ (district/ sub-district)} P_a^{71} \text{ (village)} Pr^{4068X2} \text{ (village ; } x_i)$$

$$\bar{S} P_{\bar{c}}^{77} - 78 \text{ (hh)} s_c^{12} \text{ (hh ; M/L)} \bar{W} E_{(P, T, M)}^{97632} \text{ (U, R)} \frac{H}{B}, \frac{V}{V} \text{ (C}^1, r; d)$$

Where hh is household, M/L is means of livelihood, x_i is 1971 census population, c^1 and r are percentages of non-contacts and refusals and d is the design effect or range of design effects.

A more detailed version of the suggested is given in Murthy (1980). It is hoped that the system of symbolic representation of survey designs suggested in this note would receive the attention of survey statisticians and that it could possibly form a basis for evolving a standardized system through an international effort. As mentioned earlier, a system of symbolic specification of survey designs has potentialities to serve as a standard form of communication among survey statisticians. Any comments and suggestions on the proposed system may kindly be sent to the author, SIAP, Akasaka P.O. Box 13, Tokyo 107, Japan.

Horvitz, D.C. (1978) : Some design issues in sample surveys ; Survey Sampling and Measurement edited by N.K. Namboodiri, Academic Press, New York, 3-11.

Kish, L. (1965) : Survey Sampling ; John Wiley and Sons, New York.

Murthy, M.N. (1967) : Sampling Theory and Methods ; Statistical Publishing Society, Calcutta.

United Nations (1964) : Recommendations for the Preparation of Sample Survey Reports ; Statistical Papers Series C, No.1, Rev. 2, New York.

Murthy, M.N. (1980) : Symbolic representative of survey designs ; Occasional Paper No. 12, SIAP, Tokio.

EVALUATING THE QUALITY OF THE 1980 UNITED STATES CENSUS OF POPULATION & HOUSING

CHARLES D. JONES, U.S.A. Bureau of the Census
DAVID V. BATEMAN, U.S.A. Bureau of the Census

INTRODUCTION

The history of census taking in the United States spans two centuries, but formal evaluation of census data has a briefer history. The initial Census occurred in 1790 followed by censuses conducted on a decennial basis. However, it was not until the 1950 census before a formal evaluation program, on a large scale, was conducted in the U.S. This program resulted from the Bureau of the Census's concern about the accuracy of the census data and the completeness of the population and housing census counts. Formal evaluation programs were also carried out in conjunction with the 1960, 1970, and 1980 censuses and we now view the evaluation program to be an essential component of census-taking activities.

The objectives in evaluating the U.S. censuses of population and housing have remained basically the same since the 1950 censuses, namely: (1) to provide data on nonsampling errors in the statistics published from the census so that a user may be aware of the sources and magnitude of such error in the census data; and (2) to provide data on the efficiency and effectiveness of census operations and procedures so that improvements may be made in future censuses. The estimation of nonsampling error is concerned with two broad areas: assessment of the accuracy of reporting of characteristics such as age, sex, labor force status, value of owned homes; and the assessment of coverage error.

Besides nonsampling error estimation, the other major objective of the census evaluation program is the evaluation of specific census procedures. As the population of United States increases in size and living patterns change, operations and procedures have been added to improve census coverage and to more efficiently process data. It is necessary to know how well these procedures worked relative to their cost.

1980 U.S. CENSUS ENUMERATION AND PROCESSING PROCEDURES

The 1980 U.S. Census of Population and Housing began on March 29, 1980 when census questionnaires were delivered by mail to the entire population. All persons and house holds were asked certain demographic, socioeconomic questions; in addition approximately 20 percent were asked supplemental questions.

The sources of addresses for the census mailout operation were commercially purchased address lists and Census Bureau listing operations. Household respondents in mail areas were asked to fill in the questionnaires and mail them back to local census district offices. Those households which did not return a questionnaire by mail were visited personally by a census enumerator (enumerators canvassed and enumerated, in specified areas, the 5 percent of the population which was not asked to mail back their questionnaires).

Field enumeration activities were administered by 409 temporary district offices. The organization of each of the district offices depended upon the areas of the country for which the office was responsible. Preliminary data processing operations were conducted in these offices. After the district office operations were completed, the census materials were sent to three processing centers where data summarization takes place. Initially, all short-form questionnaires were microfilmed and then entered into the computer through a film optical sensing device (FOSDIC). Computer edits were performed on the data, and for those data that were outside a specified tolerance, clerical edits were done. Concurrent with the data entry operations, «sample items» requiring write-in responses were clerically coded so that they were machine readable.

THE 1980 U.S. CENSUS EVALUATION PROGRAM

The 1980 census evaluation program can be divided into four broad study groups.

- Content error studies concerned with the assessment of the accuracy or the variability of reporting of characteristics. Two studies were conducted: a reinterview of a sample taken from the census provided estimates of differential response bias between the measurement procedure used in the census and that used in the reinterview; this was done by using more detailed probing questions in the reinterview. The second study involves a record check evaluation of average utility costs reported in the Census; for this study, independent utility company records are used for comparison with census responses.
- Coverage error studies concerned with the estimation of census coverage, and the evaluation of special operations that were introduced to improve coverage in the census. Three approaches have been utilized for Census coverage estimation in the United States. One approach involves consistency checks between the current census and independent estimates of the population based on statistics of birth and death registration, data on immigration and emigration, and data from medicare registration (these are all independent government administrative records). A comparison of these estimates with current census counts can provide estimates of presumed net census errors. A second approach has been to utilize sample surveys taken at the same time as the census, or shortly thereafter, to provide census coverage error estimates. These surveys are used to identify both the number and characteristics of types of persons and housing units that are missed in the census. A third approach utilizes independent record lists, such as Government Administrative Records that may have appropriately included persons that are missed in the census, to improve coverage error estimates over and above the second approach described above.

A number of special procedures and operations were designed to improve the coverage of the 1980 census. Some of these procedures and operations were used in previous censuses; however, a number were used for the first time in 1980, or were modifications of previous procedures. Since these programs were costly and occupied a great deal of staff time in their implementation, it was felt that they should be evaluated. Specifically, the evaluation would measure the improvement in coverage resulting from the operation relative to its cost, and a determination if the operation was correctly implemented. Relevant data on the operations was collected in specified district offices.

- Studies that are concerned with the evaluation of census processing operations both in the field collection sites (temporary district offices) and in the centralized processing sites.
- Special surveys were conducted to evaluate the 1980 Decennial Census Public Information Program. These studies provide an evaluation of the penetration and effectiveness of an extensive publicity and advertising campaign that was conducted by the Census Bureau shortly before and during the taking of the 1980 census.

QUALITY CONTROL IN PROCESSING THE 1981 CENSUS

Rosemary Karmel
Australian Bureau of Statistics

INTRODUCTION

In June 1981, a Population Census was conducted by the Australian Bureau of Statistics. For the purpose of collection, Australia was divided into approximately 26700 small geographic areas called Collection Districts (CDs). A Census collector was assigned to one or more CDs and was responsible for ensuring that a Census Form was completed for each dwelling located in the CD. Particulars of each person resident in that dwelling on Census night were entered onto a Census Form by the householder. (Special procedures existed for Non-Private Dwellings (NPDs) such as hotels, hostels, prisons etc...) As soon as possible after Census night, the completed Forms were collected by the collectors, stored in packs and sent to the Data Transcription Centre for processing.

The Forms proceed through various stages of processing. The first is a Preliminary Processing Phase where basic data relating to Age, Sex, Marital Status and State of Usual Residence are extracted, transferred to magnetic tapes and edited to provide timely basic demographic statistics for various purposes. Subsequently, the Forms enter the Main Processing Phase which consists of :

1. - Three coding Processes where the codes for replies to some of the Census questions are written onto the Census schedules ;
2. - A marking Process where information on the Forms is marked onto specially designed optical mark reading documents to be read directly onto magnetic tape ;
3. - An editing and balancing Process where data are checked for inconsistencies by computer.

WHAT IS QUALITY AND QUALITY CONTROL ?

Because coders and markers make mistakes, the codes data and mark read documents will contain some errors. The proportion of items miscoded, or mis-marked, is called the quality of the coding, or marking, Process.

Statistical quality control is a method of sampling that involves checking a sample of the coders', or markers', work in each CD. If the proportion of errors in the sample is too high it is likely that the number of errors in the whole CD is too high and so the CD is "bust" and all the units in the CD are checked. If the proportion of errors is small, it is likely that the number of errors in the whole CD is low and so no further checking is carried out. All errors found are corrected.

Thus in quality control schemes, CD quality is kept at an acceptable level by identifying poorly processed CDs and completely checking only these CDs.

WHAT ARE THE AIMS OF QUALITY CONTROL IN CENSUS PROCESSING ?

The aims of the quality control in Census Processing are two-fold :

. to ensure that the quality of coding and marking is maintained so that the Australian Bureau of Statistics can be confident that the Census tabulations finally obtained are based on data of an entirely satisfactory quality ;

. to provide data that can be used for administrative purposes during the processing of the Census.

The administrative data derived from the quality control system can be used to :

1. - assess the coding, marking and checking performance of individuals and sections ;
2. - locate trouble spots ;
3. - rectify trouble spots by either retraining poor staff, or changing procedures if this is shown to be necessary by general poor performance ;
4. - ensure a fair degree of justice in the dismissal, disciplining or redeployment of staff ;
5. - obtain a guide to how the quality of Census Processing is changing.

Finally, the results of the quality control scheme will allow greater precision in assessing the accuracy of the Census results and greater depth in understanding the causes of errors so that measures can be taken to improve the data processing operation in future censuses.

WHAT DOES A QUALITY CONTROL SCHEME INVOLVE ?

As said before, statistical quality control is a method of sampling. Samples of coders' and markers' work are taken and errors are screened out, recorded and corrected by checkers.

The use of a sample means that a hundred percent check can be avoided, but it also entails a risk that some proportion of the unchecked work will be in error. The cost of this risk is borne by the user of the Census tabulations who wants as accurate results as possible.

Thus there are two conflicting requirements : the desire by Census Processing to keep costs down by using sample inspection and the need for accurate results for users. By careful design, the quality control scheme ensures that the amount of undetected error is acceptably small for users and at the same time minimises the amount of inspection and hence the cost of quality control.

Even if a hundred percent check were used, not all errors would be detected because checkers can also make mistakes.

Typically a quality control scheme involves :

1. - dividing the units that are being processed (either people or dwellings in the case of the Census) into groups, or lots, of size N , say ;
2. - determining the percentage P of errors that can be tolerated in the final data ;
3. - determining the size of the sample to be taken from a lot that is necessary to establish the quality of that lot. The sample size and the percentage P define the "acceptance" number c . If more than c out of the sample items are found to be wrong, then the entire group is inspected. Thus c is the number of errors permitted in the lot before full inspection is deemed necessary ;
4. - sampling each lot and rejecting or accepting it on the basis of the number of errors identified ;
5. - correcting all errors found, both in the sample and in the entire group if that group has been rejected (or "bust") because of poor quality.

The above procedure assumes that the items being coded or marked can be divided into inspection lots, and that the lot can be accepted or rejected on the basis of a sample of items. The formation of lots is very important in the formulation of an efficient quality control scheme. Two points should be considered when deciding how to form lots :

within each lot, the factors that seem likely to cause errors should be kept constant. This is because if such factors are kept the same, lots will tend to have either few or many errors and thus poor groups can be identified by a small sample and unnecessary inspection can be kept to a minimum. For example, in coding responses the coder will be the cause of error, and so lots should consist of sets of responses coded by a particular coder. In this case poor coders will nearly always have all their work completely checked, while good coders will only have a small sample checked to ensure that quality is maintained ;

inspection lots should be as large as possible. This is because the absolute size of the sample governs its ability to discriminate between good and bad lots. Thus, given a particular sample size, the larger the lot the smaller is the proportion of units included in the sample, so that large lots result in less inspection than do small lots.

In general, these two requirements tend to work against each other since forming large lots often involves combining units whose sources of error are different. In our coding example, forming large lots would mean that we would have to combine units coded by different coders.

In the processing of the Census, it was decided to use one CD as a "lot". The reasons for this were :

- . one coder (or marker) codes (or marks) a particular CD and hence using CDs as lots keeps the main source of error (i.e. coder or marker) the same ;
- . the pack of Forms for a CD is a physical unit used in controlling the processing flow and hence is easily identified, that is, no additional work is involved in obtaining lots since a lot is a pack.

The only problem associated with using CDs as lots is that the number of people and dwellings in a CD vary. Therefore the lot size, which is the number of units processed (dwellings in some Processes, and people in others) also varies. This means that a different sample size and acceptance number must be worked out for each CD depending on its size.

CHOOSING A SAMPLE PLAN

A sample plan is the name given to the pair of numbers (n,c) , i.e. to the lot sample size n and its associated acceptable number of errors c . Thus the quality control scheme described in the preceding Section basically involves applying sample plans to CDs and accepting or rejecting the CD depending on whether there were c or less errors or more than c errors in the sample of n units. There are two factors which determine the sample plan (n,c) :

1. - the size of the lot (i.e. CD) ;
2. - the criteria used to define what an acceptable quality leaving the Process is ; i.e. the outgoing quality required after coding, or marking, and checking have been completed.

Since sampling is being used rather than 100 % check, the actual outgoing quality for a particular CD cannot be fixed by specifying a particular sample plan. However, there are methods for ensuring that the outgoing quality for a particular CD is in an acceptable range. For example, sample plans can be defined which ensure that the chances of the outgoing quality from a CD exceeding a predetermined limit is extremely small. Alternatively, we can require that the average outgoing quality (AOQ) of CDs is some pre-specified percentage of errors considered to be acceptable ; that is the average quality over all CDs leaving the processing system is acceptable. This does not mean that all CDs have the same (acceptable) outgoing quality but that the average outgoing quality is acceptable.

This latter approach is that currently used in the Census quality control to maintain quality at a level acceptable to users. The current method for determining sample plans involves calculating the expected incoming quality (from the previous week's data), specifying a required level of average outgoing quality and finding that pair, n and c , that results in this level of average outgoing quality and at the same time minimizes the expected rate of inspection. The AOQ scheme then guarantees that the average outgoing quality of the CDs will not exceed some prescribed satisfactory level although some CDs may have higher outgoing quality while some way have lower outgoing quality.

CHECKING THE CHECKERS

In the above discussion, it has been mentioned that checkers will also make mistakes, that is they may not identify errors or may even say that a correct code is wrong. To obtain a satisfactory overall estimate of the quality of the Census Processing, the extent of checker errors must be determined. This must also be known to calculate the sample plan to achieve a particular average outgoing quality.

The rates at which checkers create, miss and miscode errors are estimated through a sampling scheme known as the recheck operation. The recheck operation consists of a random sample of CDs within which units in the quality control sample are independently checked to see if the checker has made any mistakes. Estimates of checker error rates are then made. These error rates are known as recheck factors.

Besides allowing more accurate estimates of the error rates to be calculated, the recheck operation provides management with objective data on the quality of the checkers' work. This data can be used as a basis for determining whether the general instruction and supervision of checkers needs to be altered.

OBTAINING AND IMPLEMENTING SAMPLE PLANS

To obtain a sample plan to achieve a specified average outgoing quality for a particular coding or making Process, several pieces of information must be known : the coding (or making) error rate from CD to CD, and the recheck factors. Using this information, a computer program called SAMPLAN can produce sample plans for a range of CD sizes to achieve a specified average outgoing quality.

In practice, the error rates mentioned above are not known for a particular week until the sample has been taken, and hence estimates of these values must be used. The rates at which errors are made vary with time, because coders and markers become more familiar with the procedures with time, and so the administrative data on coder/marker performance is produced weekly to obtain up-to-date information and sample plans are changed (or updated) weekly to allow for change. The recheck factors are calculated less frequently - about monthly. Thus the estimates used as input to SAMPLAN are the coder/marker error rates obtained from the previous week and the recheck factors calculated at the most recent recheck. The resulting new sample plans are implemented as soon as is practicable.

In the processing of the Census there are several different coding and marking Sub-Processes and Processes, for example : coding of industry and place of work ; marking of person data. Because error rates vary with the complexity of the coding Process and marking Sub-Process. Thus for each different operation, the coder/marker error rates, the variation of these rates and the recheck factors must be known so that sample plans specific to that operation can be determined and the quality control scheme most efficient for that Process implemented. This means that in general different sample plans are used in the different operations.

4. news of the association

4.1 IASS Officers

According to the President's proposition, and with the agreement of the members of the Council, J.L. Bodin, administrateur of INSEE (Institut National de la Statistique et des Etudes Economiques), France, has been nominated as Executive Director of IASS.

4.2 Function of Vice-President

E.K. Foreman will carry on as acting vice-president of IASS until the Madrid Congress in 1983.

4.3 IASS Committees

- Publications committee: L.R. Frankel (USA): president
E. de Alba (Mexico)
E. Goldfield (USA)
T.V. Hanurav (India)
R. Platek (Canada)
G. Roy (France)
- Terminology committee: L. Kish: president.
- Nomination committee: M.E. Gonzales: president

4.4 Officers' meetings

4.4.1 Meeting ISI/IASS on March 9, 1982, Paris

Were participating J. Durbin, elected President of ISI, E. Lunenberg, Director of the permanent office of ISI, G. Theodore, President of IASS. This meeting was meant to exchange informations and to discuss the ISI and IASS problems.

The subjects examined were the following:

- Tasks and competence areas of ISI and IASS
- Exchange of informations
- Outstanding projects: migration project, center of research, United Nations household survey program
- Congresses: Madrid Congress in 1983, Amsterdam Congress in 1985
- Different points: participation of IASS to the "International Statistical Informations", membership dues, statistics teaching, UNESCO

4.4.2 Meeting, May 23, 1982, Paris

A meeting took place in Paris on May 23, 1982, with G. Theodore, President and J.L. Sanchez-Crespo, Vice-President of the ISI Program Committee, and member of the Terminology Committee of IASS. This meeting was about the work program of the Terminology Committee.

4.4.3 Meeting, June 10, 1982, Paris

A meeting took place in Paris on June 10, 1982, with G.Theodore, President, and L.R. Frankel, president, and G. Roy, member of the Publications Committee.

This meeting was about the publications program of IASS.
L.R. Frankel also met J. Desabie.

4.4.4 Mission of the Executive Director to Mexico and Washington, September 1982

J.L. Bodin, Executive Director, went to Mexico and Washington and met E. Berumen Torres, M.E. Gonzales and B. Bailar.

4.5 Contacts with UNESCO

A document was sent to UNESCO in order to have the IASS recognized as a non-governmental organism (N.G.O). These negotiations did not end yet, as UNESCO asked complementary informations.

4.6 Election of E.H. Jebe

Emil H. Jebe, statistician emeritus for the Environmental Research Institute of Michigan (ERIM), Ann Arbor, Michigan, has been elected Chairman of Committee E-11 on Statistical Methods by ASTM, the standard-writing organization.

5. bibliography

RAAB, Ch. D. - Data Protection and Privacy - Proceedings of a Conference

In a recent White Paper (Cmd. 8539) the Government describes its legislative intentions for the protection of data on individuals held by computer. These proposals fall short of those recommended by the Lindop Committee on Data Protection as long ago as 1978. Many knowledgeable people are convinced that the proposed safeguards against the misuse or inaccuracy of confidential information are inadequate. They argue that stronger regulatory machinery is required, not only for computerised data but also for manual records which will still be unprotected.

There have been too few public occasions in Britain for airing these matters in the round. The SRA (Social Research Association) Conference was a singular opportunity and marks a major contribution to a vital debate. It covered some crucial issues: the dangers to the public in the collection, storage and use of information for administrative purposes and research; the conflicts of interest surrounding the security of Census data and medical records; techniques to help preserve individuals' anonymity; and so on.

Ten experts from various fields address these topics. Professor Fred Martin, a member of the Lindop Committee gives a first-hand account of its composition, workings and recommendations. Robin Cook MP describes the frustrations encountered in the attempts to make progress in this area. Dr. Martin Bulmer explains the legal safeguards surrounding Census data, although Wilson Finnie challenges the assumption that the law is certain enough to protect privacy. Professor Tore Dalenius outlines some research topics leading to improved statistical techniques to reduce the risks of breaching confidentiality. Peter Fisk stresses the importance of time-limits in data protection. Dr. Michael Heasman considers confidentiality in medical records. Walter Lutz raises the question of the public right to, and benefit from, stored data. Professor Roger Jewell explores the clash of ethical principles and the problems of codes of practice. Dr. David Wishart argues that personal information should be protected without a massive bureaucratic machinery. The publication is edited and introduced by Charles Raab.

Copies of the report can be obtained from: Elizabeth Worth, SRA Publications, 1-2 Castle Lane, London, SW1E 6DR (Tel: 01-828-7055)

For enquiries about content of the report contact: Mr. Charles D. Raab, Senior Lecturer, University of Edinburgh, Department of Politics, 31 Buccleuch Place, Edinburgh, EH8 9JT (Tel: 031-667-1011. Ext. 6314)

BARNETT, Ed. V. - Teaching Statistics in Schools throughout the World - a new publication of the International Statistical Institute (pp XVI, 250, 1982)

The volume presents a review of the exact nature of statistical education in approximately 20 different countries. For each country (or group of countries) considered, an individual with first-hand experience of the prevailing circumstances has presented a personal description of the present situation, of the way in which it has developed and of possible future prospects. The countries covered are from both developed and developing countries.

The general structure of school education in each country is outlined in order to clarify understanding of the details of the provisions made for teaching statistics. The outline includes information on types of schools, the pupils they cater for, principles of administration of the educational system, methods of teacher training, patterns for examinations, prospects for curriculum reform, etc. The titles of the chapters are as follows:

- Chapter 1 - Statistical education in schools in England and Wales (by V. Barnett)
- Chapter 2 - Report on stochastics at High Schools in the Federal Republic of Germany (by H. Dinges)
- Chapter 3 - Problems raised by the Teaching of Probability Theory and Statistics in French Secondary Schools (by P. L. Hennequin)
- Chapter 4 - Pre-University Stochastics Teaching in Hungary (by T. Nemetz)
- Chapter 5 - The Teaching of Stochastics in Italian Upper Secondary Schools (by A. Zuliani)
- Chapter 6 - Statistical Education in Schools in Sweden (by A. af Ekenstam)
- Chapter 7 - Statistical Education at the School level in the United States and Canada (by R.V. Hogg and J. Swift).
- Chapter 8 - Teaching Statistics in Schools in Australia (by J.B. Douglas)
- Chapter 9 - School-level Statistical Education in New Zealand (by J.B. Douglas)
- Chapter 10- Some problems of the Teaching of Statistics in developing countries - the Nigerian example (by J.O. Oyelese)
- Chapter 11- Statistical Education in Schools in Uganda and other East African states (by S. Tulya-Muhika)
- Chapter 12- The Teaching of Statistics in the Secondary Schools of Sudan (by D.Y. Downham and H. Gattar)
- Chapter 13- Statistical Education in South African Schools (by J.M. Juritz)
- Chapter 14- Teaching Statistics in Schools in Argentina (by L.A. Santalo)
- Chapter 15- Teaching Statistics at School level in Malaysia (by V. Barnett)
- Chapter 16- Some publications on Teaching Statistics in Japan (by V. Barnett)

The volume is intended to be of service not only to those involved in teaching statistics as a separate discipline within schools, but also to those teachers and educators who are involved with teaching statistics as part of other disciplines: biology, chemistry, mathematics, physics, the social sciences for example.

Orders for the volume should be directed to: The International Statistical Institute
428 Prinses Beatrixlaan
P.O. Box 950
2270 AZ VOORBURG
Netherlands

The price of the volume is US\$ 10 or UKf 6.

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INTERNATIONAL DEMOGRAPHICS - Monthly publication of the American Demographics, Inc. O.C. Box 68, Ithaca, New York 14850, USA

International Demographics is a new monthly report that carries news of censuses, surveys, and population trends in a form that business executives can understand and apply.

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LOGICIEL SURVTAB - Statistical Computing Consultants, 9025 Andromeda Drive, Burke, Va 22015, USA.
Statistical Computing Consultants announces the coming out of a new SURVTAB software, which works on the IBM Personal Computer.

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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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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.

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THE HISTORY OF THE UNITED STATES

The history of the United States is a story of growth and change. From the first settlers to the present day, the nation has evolved through various stages of development. The early years were marked by exploration and the establishment of colonies. The American Revolution led to the birth of a new nation, and the subsequent years saw the expansion of territory and the growth of industry.

The American Revolution was a pivotal moment in the nation's history. It was a struggle for independence from British rule, and it resulted in the adoption of the Constitution. The Constitution established a system of government that has lasted to this day. The American Revolution also led to the expansion of the nation's territory, as the United States acquired new lands through purchase and conquest.

The American Civil War was another major event in the nation's history. It was a conflict between the Northern states and the Southern states, and it resulted in the preservation of the Union. The Civil War also led to the abolition of slavery, and it paved the way for the Reconstruction era. The Reconstruction era was a period of rebuilding and reform, and it saw the passage of the Reconstruction Acts and the Reconstruction Amendments to the Constitution.

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