

Preface

Household surveys are an important source of socio-economic data. Important indicators to inform and monitor development policies are often derived from such surveys. In developing countries, they have become a dominant form of data collection, supplementing or sometimes even replacing other data collection programmes and civil registration systems.

The present publication presents the “state of the art” on several important aspects of conducting household surveys in developing and transition countries, including sample design, survey implementation, non-sampling errors, survey costs, and analysis of survey data. The main objective of this handbook is to assist national survey statisticians to design household surveys in an efficient and reliable manner, and to allow users to make greater use of survey generated data.

The publication's 25 chapters have been authored by leading experts in survey research methodology around the world. Most of them have practical experience in assisting national statistical authorities in developing and transition countries. Some of the unique features of this publication include:

- Special focus on the needs of developing and transition countries;
- Emphasis on standards and operating characteristics that can be applied to different countries and different surveys;
- Coverage of survey costs, including empirical examples of budgeting for surveys, and analyses of survey costs disaggregated into detailed components;
- Extensive coverage of non-sampling errors;
- Coverage of both basic and advanced techniques of analysis of household survey data, including a detailed empirical comparison of the latest computer software packages available for the analysis of complex survey data;
- Presentation of examples of design, implementation and analysis of data from some household surveys conducted in developing and transition countries;
- Presentation of several case studies of actual large-scale surveys conducted in developing and transition countries that may be used as examples to be followed in designing similar surveys.

This publication builds upon previous initiatives undertaken by the United Nations Department of Economic and Social Affairs/Statistics Division (DESA/UNSD), to improve the quality of survey methodology and strengthen the capacity of national statistical systems. The most comprehensive of these initiatives over the last two decades has been the National Household Survey Capability Programme (NHSCP). The aim of the NHSCP was to assist developing countries to obtain critical demographic and socio-economic data through an integrated system of household surveys, in order to support development planning, policy

formulation, and programme implementation. This programme largely contributed to the statistical development of many developing countries, especially in Africa, which benefited from a significant increase in the number and variety of surveys completed in the 1980s. Furthermore, the NHSCP supported methodological work leading to the publication of several technical studies and handbooks. The Handbook of Household Surveys (Revised Edition)¹ provided a general overview of issues related to the design and implementation of household surveys. It was followed by a series of publications addressing issues and procedures in specific areas of survey methodology and covering many subject areas, including:

- *National Household Survey Capability Programme: Sampling Frames and Sample Designs for Integrated Household Survey Programmes, Preliminary Version* (DP/UN/INT-84-014/5E), New York, 1986
- *National Household Survey Capability Programme: Sampling Errors in Household Surveys* (UNFPA/UN/INT-92-P80-15E), New York, 1993
- *National Household Survey Capability Programme: Survey Data Processing: A Review of Issues and Procedures* (DP/UN/INT-81-041/1), New York, 1982
- *National Household Survey Capability Programme: No-sampling Errors in Household Surveys: Sources, Assessment and Control: Preliminary Version* (DP/UN/INT-81-041/2), New York, 1982
- *National Household Survey Capability Programme: Development and Design of Survey Questionnaires* (INT-84-014), New York, 1985
- *National Household Survey Capability Programme: Household Income and Expenditure Surveys: A Technical Study* (DP/UN/INT-88-X01/6E), New York, 1989
- *National Household Survey Capability Programme: Guidelines for Household Surveys on Health* (INT/89/X06), New York, 1995
- *National Household Survey Capability Programme: Sampling Rare and Elusive Populations* (INT-92-P80-16E), New York, 1993

This publication updates and extends the technical aspects of the issues and procedures covered in detail in the above publications, while focusing exclusively on their applications to surveys in developing and transition countries.

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¹ Studies in Methods, No. 31 (United Nations publication, Sales No. E.83.XVII.13).

Overview

The publication is organized as follows. There are two parts consisting of a total of 25 chapters. Part one consists of 21 chapters and is divided into five sections, A through E. The following is a summary of the contents of each section of part one.

- Section A: **Survey design and implementation.** This section contains three chapters. Chapter II presents an overview of various issues pertinent to the design of household surveys in the context of developing and transition countries. Chapters III and IV, discuss issues pertaining to questionnaire design and issues pertaining to survey implementation, respectively, in developing and transition countries.
- Section B: **Sample design.** This section contains an introductory note and three chapters dealing with the specifics of sample design. Chapter V deals with the design of master samples and master frames. The use of design effects in sample design and analysis is discussed in chapter VI and chapter VII provides an empirical analysis of design effects for surveys conducted in several developing countries.
- Section C: **Non-sampling errors.** This section contains an introductory note and four chapters dealing with various aspects of non-sampling error measurement, evaluation, and control in developing and transition countries. Chapter VIII deals with non-observation error (non-response and non-coverage). Measurement errors are considered in chapter IX. Chapter X presents quality assurance guidelines and procedures with application to the World Health Surveys, a programme of surveys conducted in developing countries and sponsored by the World Health Organization (WHO). Chapter XI describes a case study of measurement, evaluation, and compensation for non-sampling errors of household surveys conducted in Brazil.
- Section D: **Survey costs.** This section contains an introductory note and three chapters. Chapter XII provides a general framework for analysing survey costs in the context of surveys conducted in developing and transition countries. Using empirical data, chapter XIII describes a cost model for an income and expenditure survey conducted in a developing country. Chapter XIV discusses issues pertinent to the development of a budget for the myriad phases and functions in a household survey and includes a number of examples and case studies that are used to draw comparisons and to illustrate the important budgeting issues discussed in the chapter.
- Section E: **Analysis of survey data.** This section contains an introductory note and seven chapters devoted to the analysis of survey data. Chapter XV provides detailed guidelines for the management of household survey data. Chapter XVI discusses basic tabular analysis of survey data, including several concrete examples. Chapter XVII discusses the use of multi-topic household surveys as a tool for poverty reduction in developing countries. Chapter XVIII discusses the use of multivariate statistical methods for the construction of indices from household survey data. Chapter XIX deals with statistical analysis of survey data, focusing

on the basic techniques of model-based analysis, namely, multiple linear regression, logistic regression and multilevel methods. Chapter XX presents more advanced approaches to the analysis of survey data that take account of the effects of the complexity of the design on the analysis. Finally, chapter XXI discusses the various methods used in the estimation of sampling errors for survey data and also describes practical data analysis techniques, comparing several computer software packages used to analyse complex survey data. The strong relationship between sample design and data analysis is also emphasized. Further details on the comparison of software packages, including computer output from the various software packages, are contained in the CD-ROM that accompanies this publication.

Part two of the publication, containing four chapters preceded by an introductory note, is devoted to case studies providing concrete examples of surveys conducted in developing and transition countries. These chapters provide a detailed and systematic treatment of both user-paid surveys sponsored by international agencies and country-budgeted surveys conducted as part of the regular survey programmes of national statistical systems. The Demographic and Health Surveys (DHS) programme is described in chapter XXII; the Living Standards Measurement Study (LSMS) surveys programme is described in chapter XXIII. The discussion of both survey series includes the computation of design effects of the estimates of a number of key characteristics. Chapter XXIV discusses the design and implementation of household budget surveys, using a survey conducted in the Lao People's Democratic Republic for illustration. Chapter XXV discusses general features of the design and implementation of surveys conducted in transition countries, and includes several cases studies.

Acknowledgements

The preparation of a publication of this magnitude necessarily has to be a cooperative effort. DESA/UNSD benefited immensely from the invaluable assistance rendered by many individual consultants and organizations from around the world, both internal and external to the United Nations common system. These consultants are experts with considerable expertise in the design, implementation and analysis of complex surveys, and many of them have extensive experience in developing and transition countries.

All the chapters in this publication were subjected to a very rigorous peer review process. First, each chapter was reviewed by two referees, known to be experts in the relevant fields. The revised chapters were then assembled to produce the first draft of the publication, which was critically reviewed at the expert group meeting organized by DESA/UNSD in New York in October 2002. At the end of the meeting, an editorial board was established to review the publication and make final recommendations about its structure and contents. This phase of the review process led to a restructuring and streamlining of the whole publication to make it more coherent, more complete and more internally consistent. New chapters were written and old chapters revised in accordance with the recommendations of the expert group meeting and the editorial board. Each revised chapter then went through a third round of review by two referees before a final decision was taken on whether or not to include it in the publication. A team of editors then undertook a final review of the publication in its entirety, ensuring that the material presented was technically sound, internally consistent, and faithful to the primary goals of the publication.

DESA/UNSD gratefully acknowledges the invaluable contributions to this publication of Mr. Graham Kalton. Mr. Kalton chaired both the expert group meeting and the editorial board, reviewed many chapters, and provided technical advice and intellectual direction to DESA/UNSD staff throughout the project. Mr. John Eltinge provided considerable guidance in the initial stages of development of the ideas that resulted in this publication and, as a reviewer of several chapters and a mentor and collaborator in some of the background research work that led to the development of a framework for this publication, continued to play a critical role in all aspects of the project. Messrs. James Lepkowski, Oladejo Ajayi, Hans Pettersson, Karol Krotki and Anthony Turner provided crucial editorial help with several chapters and general guidance and support at various stages of the project.

Many other experts contributed to the project, as authors of chapters, as reviewers of chapters authored by other experts, or as both authors and reviewers. Others contributed to the project by participating in the expert group meeting and providing constructive reviews of all aspects of the initial draft of the publication. The names and affiliations of all experts involved in this project are provided in a list following the table of contents.

It would have been difficult, if not impossible, to achieve the ambitious objectives of the project, without the immense contributions of several DESA/UNSD staff at every stage. Mr. Ibrahim Yansaneh developed the proposal for the publication, recruited the other participants, and coordinated all technical aspects of the project, including the editorial process. He also authored several chapters and played the role of editor in chief of the entire publication. The

Director and Deputy Director of DESA/UNSD provided encouragement and institutional support throughout all stages of the project. Mr. Stefan Schweinfest managed all administrative aspects of the project. Ms. Sabine Warschburger designed and maintained the project web site and Ms. Denise Quiroga provided superb secretarial assistance by facilitating the flow of the many documents between authors and editors, organizing and harmonizing the disparate formats and writing styles of those documents, and helping to enforce the project management schedule.