1. Introduction

Welcome to the series of E-learning modules on methods of collection of official data, national sample survey and central statistical organisation.

By the end of this session, you will be able to:

- Explain the methods of collection of official data
- Explain the national sample survey
- Explain the central statistical organisation

Statistics are a form of numerical data, where the objective is to quantify some aspect(s) of an individual, group or society. Statistics provide a wide variety of data that would normally be inaccessible to the sociologist (For example, due to the cost of collection).

Collecting data about people and their lives is difficult. It poses unique problems that data collection developers need to address in the design phase of the collection process. Two issues need to be addressed at the outset, they are:

- What kind of data collection instrument should be used and
- What unit of measurement should be employed

We can note two kinds of statistical data:

- Official statistics refers to numerical data collected and published by Governments (for example, crime or marriage statistics).
- Non-official statistics refers to numerical data collected and published by a variety of public and private organisations (The Rowntree Foundation, for example, publishes statistics on poverty).

Official statistics are statistics published by government agencies or other public bodies such as international organisations. They provide quantitative or qualitative information on all major areas of citizens' lives, such as economic and social development, living conditions, health, education, and the environment.

Official statistics result from the collection and processing of data into statistical information by a government institution or international organisation. They are then disseminated to help users develop their knowledge about a particular topic or geographical area, make comparisons between countries or understand changes over time, make information on economic and social development accessible to the public, allowing the impact of government policies to be assessed, thus improving accountability.

Government produces official statistics for informed debate, decision-making and research both within Government and by the wider community. Objective, reliable, timely, trustworthy and accessible official statistics give people confidence in the integrity of Government and public decision-making.

Hence, in producing official statistics it is important that the relevance, reliability and integrity

of official statistics is maintained, and is perceived as such. For this purpose, the cooperation from respondents and providers of information has to be maintained, and information given on a confidential basis must remain so.

2. Types of Official Statistics Users

There are three types of official statistics users; they are those with a general interest, business interest or research interest. Each of these user groups has different needs for statistical information.

Users with a general interest:

Users with a general interest include the media, schools and the general public. They use official statistics in order to be informed on a particular topic to observe trends within the society of a local area, country and region of the world.

Users with a business interest:

Users with a business interest include decision makers and users with a particular interest for which they want information that is more detailed. For them, official statistics are an important reference, providing information on the phenomena or circumstances about their own work focusing on. For instance, those users will consider some official statistics before launching a product, or deciding on a specific policy or on a marketing strategy.

As with the general interest users, this group does not usually have a good understanding of statistical methodologies, but they need more detailed information than the general users.

Users with a research interest:

Users with a research interest are universities, consultants and government agencies. They generally understand something about statistical methodology and want to dig deeper into the facts and the statistical observations. They have an analytical purpose in inventing or explaining interrelations of causes and effects of different phenomena. In this field, official statistics are also used to assess a Government's policies.

One common point for all these users is their need to be able to trust the official information. They need to be confident that the results published are authoritative and unbiased. Producers of official statistics must maintain a reputation of professionalism and independence.

There are two sources of data for statistics.

Primary or "statistical" sources are data that are collected primarily for creating official statistics, and include statistical surveys and censuses.

Secondary, or "non-statistical" sources, are data that have been primarily collected for some other purpose (administrative data, private sector data etc.).

Statistical survey or sample survey:

A statistical survey or a sample survey is an investigation about the characteristics of a phenomenon by means of collecting data from a sample of the population and estimating their characteristics through the systematic use of statistical methodology. Various survey methods can be used such as direct interviewing, telephone, mail and online surveys.

The main advantages are that the Primary, or "statistical" sources are data that are collected primarily for creating official statistics, and include statistical surveys and censuses.

Disadvantages include the high cost of data collection and the quality issues relating to nonresponse and survey errors.

Census:

A census is a complete enumeration of a population or groups at a point in time with respect to well-defined characteristics (population, production). Data are collected for a specific reference period. A census should be taken at regular intervals in order to have comparable information available.

Therefore, most statistical censuses are conducted every 5 or 10 years. Data are usually collected through questionnaires mailed to respondents, via the Internet, or completed by an enumerator visiting respondents, or contacting them by telephone.

An advantage is that censuses provide better data than surveys for small geographic areas or sub-groups of the population. Census data can also provide a basis for sampling frames used in subsequent surveys.

The major disadvantage of censuses is usually the high cost associated with planning and conducting them, and processing the resulting data.

Register:

A register is a database that is updated continuously for a specific purpose and from which statistics can be collected and produced. It contains information on a complete group of units.

An advantage is the total coverage even if collecting and processing represent low cost. It allows producing more detailed statistics than using surveys. Different registers can be combined and linked together based on defined keys (personal identification codes, business identification codes, address codes etc.). Moreover, individual administrative registers are usually of high quality and very detailed.

A disadvantage is the possible under-coverage that can be the case:

- If the incentive or the cultural tradition of registering events and changes are weak
- If the classification principles of the register are not clearly defined or
- If the classifications do not correspond to the needs of statistical production to be derived from them

Even though different types of data collection exist, the best estimates are based on a combination of different sources providing the strengths and reducing the weakness of each individual source.

The Ministry of Statistics and Programme Implementation (MOSPI) is the nodal agency for planning and facilitating the integrated development of the statistical system in the country. The Ministry has two wings viz. National Statistical Organisation (NSO), commonly called 'Statistics Wing' and the 'Programme Implementation (PI) Wing'. The NSO consists of the Central Statistics Office (CSO) including Computer Centre and the National Sample Survey Office (NSSO).

3. National Sample Survey

National Sample Survey:

The National Sample Survey Office (NSSO) under the Ministry of Statistics & Programme Implementation was established in 1950, with the objective of obtaining comprehensive and continuing information relating to social, economic, demographic, industrial and agricultural statistics through sample surveys on countrywide basis. It has been, therefore, instrumental in developing a strong database that has helped the Central as well as State Governments in development planning and policy formulations.

The NSSO has four Divisions namely, Survey Design & Research Division (SDRD), Data Processing Division (DPD), Field Operations Division (FOD) and Coordination & Publication Division (CPD) to carry out different responsibilities. Each of these divisions except the CPD is headed by Additional Director General. All these four divisions function under the guidance of Director-General & Chief Executive Officer (DG&CEO).

SDRD located at Kolkata is responsible for planning of the survey, finalization of sample design, schedules, instructions and tabulation programme, report writing, etc.

DPD with its headquarters at Kolkata process the data collected through socio-economic surveys through its six Data Processing Centers across the country.

The Field Operations Division (FOD) is responsible for collection of data from the field on various surveys of the NSSO. The FOD with head quarters at New Delhi functions through a network of 6 Zonal Offices, 49 Regional Offices and 116 Sub-Regional Offices spread throughout the length and breadth of the country.

CPD coordinates the activities of all the Divisions.

The National Sample Survey Office (NSSO) functions under the overall direction of National Statistical Commission (NSC). The National Statistical Commission has the requisite independence and autonomy of decision making in the collection, processing and the publication of NSS data.

The autonomy includes:

- The choice of subjects or items on which data have to be collected in a given field of investigation or in a given period
- The frequency with which the data on any item are to be collected
- The preparatory or pilot work to be undertaken on different subjects
- The sample design to be adopted
- The tabulation to be prepared
- The form in which the data are to be collected and processed and
- The analysis and publication of results

The Survey Design and Research Division (SDRD) is a professional organ of NSSO, mandated to do the job of:

- Planning of the survey
- Formulation of sample design

- Drawing up of schedules of enquiry
- Formulation of concepts and definitions
- Preparation of instruction manual for survey field work
- Training of field and data processing personnel on survey methodology
- Formulation of scrutiny check points
- Drawing up of tabulation programme
- Preparation of survey reports
- · Analysis and presentation of survey results and
- Undertaking studies for the improvement of survey methodology

Every year NSSO conducts not only large-scale sample surveys in the form of NSS Rounds covering a variety of socio-economic topics, but also other important surveys in the field of Industrial Statistics (Annual Survey of Industries), Agricultural Statistics and Retail Prices.

The Socio-Economic Surveys conducted by NSSO are in the form of rounds, each round being normally of one-year duration. The subject coverage of SE inquiries for different rounds is decided based on a 10-year time frame.

In this cycle, 1 year is devoted to land and live stock holdings, debt and Investment.

1 year to social consumption (education and health care, etc.).

2 years to quinquennial surveys on household consumer expenditure, employment & unemployment situation.

And 4 years to non- agricultural enterprises, namely, manufacturing, trade and services in unorganized sector.

The remaining 2 years are for open rounds in which subjects of current/special interest on the demand of Central Ministries, State Governments and research organisations are covered.

The Annual Survey of Industries (ASI) is an important survey of the Central Statistical Organisation (CSO), MOS&PI and NSSO (FOD) conducts its fieldwork. It is a statutory survey conducted under the provisions of the Collection of Statistics Act, 1953 and rules [COS Act] framed there under in 1959. The ASI provides data on various vital aspects of the registered manufacturing sector for use in the estimation of national income, studies of industrial structure and policy formulation. It generates data on input, output, employment, wage bill, capital formation etc. on an annual basis.

Urban Frame Survey (UFS) is conducted on a continuing basis to provide an updated frame of First Stage Units (FSUs) for conducting Socio-economic enquiries in urban areas. The UFS blocks are updated taking into account the change in the population of cities and towns and in newly formed towns.

Consumer Price Index CPI (Urban): FOD also undertakes the regular price collection work for about 1114 Quotations from 310 towns for the market survey for the Consumer Price Index (CPI) Urban town / city is divided into compact area / UFS blocks with natural or permanent boundaries.

Besides the regular socio-economic surveys of NSSO taken up through 10-year survey cycle, NSSO from time to time, also undertakes pilot enquiries and ad-hoc or special surveys. Such surveys are either conducted for methodological studies or based on specific requests received for such surveys from other agencies.

4. Data Processing Division

The Data Processing Division (DPD) of NSSO is primarily mandated to undertake the processing, the tabulation and the dissemination of data collected through Nation Wide Large Scale Sample Surveys on various Socio-economic issues conducted by National Sample Survey Office (NSSO) under the Government of India.

This is the task of transforming large volume of raw data into the final form of key indicators or estimates in tabular format with due process of scrutiny and validation. This is carried out by a large number of trained and experienced technical officials in Electronic Data Processing Cadre under the overall supervision and guidance of the officers of Indian Statistical Service.

The role of DPD starts from the initial stage of formulation of the Sample Design for NSS Surveys by SDRD. Wherein, apart from providing input for the formulation it has to undertake the job of sample selection. Later on DPD undertakes the job of software development for Data Entry, Data Verification, Computer Edit, Other Data Validations, Howler Checks, Tabulation, etc.

DPD also assists the States by providing complete IT solutions in all their data processing related activities and through periodic training/workshop and other interactive methods. With the advent of Information Technology, DPD is now introducing modern technology to

reduce time and effort in data capturing and transmission besides improving quality of unit level data.

It also helps other countries/organisations in enhancing their capacity building particularly in data processing/analysis by conducting various need based training programmes.

The main functions of DPD inter-alia include:

- Maintenance of sampling frame and updating of Urban Frame Survey Database
- Selection of samples and preparation of sample lists
- Manual checking of identification particulars and pre data entry scrutiny
- In-house development of validation and tabulation software
- Data entry & verification of filled-in schedules
- Validation of data through various stages covering both content check and coverage check
- Preparation of directory and multiplier files for estimation of parameters
- Tabulation of validated data as per approved tabulation plan
- Processing & tabulation of monthly rural retail price data and release of Quarterly Rural Price Bulletin
- Assistance to state statistical agencies in processing of NSS state sample data
- Providing training in application of computer and on data processing
- Compilation and tabulation work for: Various analytical studies, Methodological studies etc undertaken by NSSO in support of working Group/Steering Committee
- Special users/Committees/Ministries/Depts./Orgs
- Organising scrutiny feedback workshop for FOD
- Providing technical guidance/assistance to NSS Data Users. Meeting data requirements (Adhoc tabulation/drawing of Samples etc.) and user's queries

5. Field Operations Division

The Field Operations Division (FOD), is one of the four Divisions of the National Sample Survey Office. It is responsible for conducting surveys in the field of Socio- Economic, Industrial Statistics, Agricultural Statistics, Prices, etc. as per the approved programmes. It is also responsible for updating the frame for conducting Socio-Economic Surveys in urban areas.

This division is headed by Additional Director General (ADG), an Additional Secretary Level Officer. In Headquarters, four Deputy Director Generals as well as other officers in the rank of Director/Joint Director/Deputy Director/ Assistant Director assist him. Deputy Director Generals head all the Zonal Offices, while the head of Regional Offices are Deputy Director General/ Director level officers except for Port Blair, which is headed by Assistant Director.

The Field Operations Division (FOD) of NSSO collects data from 603 Villages on prices of specified commodities generally consumed by agricultural / rural labourers for compilation of Consumer Price Index (CPI) (base year 1986-87) for Agricultural / Rural Labourers on behalf of the Labour Bureau. The number of items/commodities covered is about 260.

The Field Operations Division of NSSO has the overall responsibility of providing technical guidance to the States in developing suitable survey techniques for obtaining timely and reliable estimates of crop yield, bringing out uniformity in definitions and concepts and providing assistance in training the State field personnel. It also undertakes supervision over the primary fieldwork of the State Governments in respect of area enumeration, area aggregation and crop cutting experiments.

Here's a summary of our learning in this session, where we have understood:

- The methods of collection of official data
- The National Sample Survey
- The Central Statistical Organisation