**Sources of Population Data**

Concerned with the regional differences in the earth’s covering of people and their characteristics, population geography is basically an empirical science. In order to achieve the objectives, it is necessary for a population geographer to have data or facts on human population. There are two main aspects of population on which geographers generally require data. These are:

1. the state of population at a given time for a territorial unit including its geographical distribution and its composition and
2. dynamics of population in time and space as a result of the combined effects of births, deaths and migration.

Data pertaining to these two aspects are collected in two different ways. While in the case of former, data is collected at a particular point of time, the latter refers to the recording of events on a continuous basis. The former, generally known as *stock data*, is represented by census and various social surveys, and provides information on size, distribution and various social, demographic and economic attributes of the population. The latter on the other hand is knowns as *flow data* and relates to the registration of such events as births, deaths and migration.

**The Census**

Census is the single largest source of data for population studies all over the world. Though modern census is the phenomenon of a more recent time in past – in the seventeenth and eighteenth centuries, evidences indicate that enumeration of people were carried out in different parts of the world even during the ancient time. The purpose of such enumeration was, however, very limited, i.e., tax collection, or military conscription, or both. The earliest example of modern type of census is known to have been conducted in New France (present day Quebec) in Canada, in 1665 and Iceland in 1703. The first periodical census began in the United Sates in 1790 and in Britain and France in 1802. By the middle of the nineteenth century, almost the whole of Europe had developed the system. At the present time, almost all the countries of the world, excluding a few exceptions (notably China), conduct census counting at regular interval.

The modern population census has been defined by the United Nations as “the total process of collecting, compiling and publishing demographic, economic and social data pertaining, at a specified time or times, to all persons of a defined territory”. In other words, enumeration of the entire population of a country or a region at a particular time is called a census. Periodicity is an important characteristic of a census in that such counting is done at a regular interval. Most of the countries, including India, conduct census every 10 years.

Another characteristic feature of a census is simultaneity, which implies that the entire population is counted simultaneously at a specified point of time. Since census involves counting of all the individuals of a country or a region, the actual exercise is invariably spread over a period of time, say a week or a fortnight. The actual counts, however, refer to a particular date and time known as reference date or census moment or census time.

Further, in the enumeration process, two approaches are adopted. These are: *de facto* and *de jure.* While in the *de facto* approach, used in Australia for instance, each individual is recorded at the place where he/she is found at the time of enumeration. As against this, in de jure approach, as in the United States, people are recorded at their normal or usual place of residence. In some countries, however, a combination of both the approaches is used, for example, in Brazil and England.

One of the major problems for a population geographer concerning census data is the difference in the level of detail provided, the accuracy of returns and the period of coverage across different countries of the world. This renders any international comparison very difficult. However, with the initiatives of the United Nations, a good amount of compatibility has been achieved in data, though limited to small number of variables, of different countries. Furthermore, the census data of the more advanced countries are, in general, more accurate and reliable than those of the underdeveloped or developing countries.

**Vital Statistics**

The data on vital events such as births, deaths, marriages, divorces, and adoption etc. are known as vital statistics. The continuous recording of such data is known as vital registration system or civil registration system. Though, a practise of collecting information on list of baptism, burials and wedding by churches is known to have existed much earlier time in Europe, vital registration system is a matter of nineteenth and twentieth centuries only. The first civil registration system was introduced in England and Wales in 1836 and Scotland in 1854. Britain, however, cannot be regarded as the birthplace of official vital statistics. Even before Britain, in Sweden, a law for making of tabular records of population had come in to existence as early as in 1748. This law provided for the regular recording of births, deaths along with other ancillary information for each parish.

Along with vital events, vital statistics also provide several other ancillary information. In case of birth, for instance, additional details on sex of the baby, mother’s age, the number of her previous children, the order of the birth, the residence of the parents etc. Likewise, in the case of death, information on date and place of death, sex, age and occupation of the deceased and the cause of death are recorded.

The vital statistics forms an important tool for studying the dynamics of the population of any country or region. However, as noted in the case of census data also, the vital statistics are marked with a great amount of inaccuracy in a larger part of the world, particularly among the developing countries including India. Many of the developing countries still do not have a system of continuous registration of vital events. This poses a serious problem for population geographer while mapping the world patterns of vital events. The inaccuracy of data vital events in developing countries due to poor coverage renders a researcher’s attempt on the study of population dynamics a very difficult task.

**Demographic Sample Surveys**

Demographic sample surveys form important source of population data. In sample surveys data are obtained from selected samples and the extent of statistical error and the data is minimized by regulating the size of the samples. The data thus obtained have several uses such as bringing up-to-date the results of a complete count taken some time in past, checking the accuracy and supplementing the data of current complete count etc.

The collection of data through sample surveys has many advantages over periodic complete counts. It requires a smaller number of staff or interviewers, and thus, is less expensive. With the help of more skilled interviewers and properly designed questionnaires, information on some specific topics can be obtained in detail through sample surveys, which are ordinarily not possible in periodic complete counts. The data obtained through sample survey are more reliable.

Despite these advantages, sample surveys cannot replace the complete counts. Sample surveys and periodic complete counts are basically complementary to each other. An efficient sampling requires stratification, and this can be achieved only if there is a suitable reference framework based on a recent count of some sort. Likewise, sampling becomes indispensable, at every stage of census enumeration: at the planning stage, in the enumeration itself, in the course of processing and tabulation of data, and in the post-enumeration checks of the accuracy of the data.

**International Publications**

The United Nations and its various organs, along with other international agencies such as the World Bank, publish population data for the world as a whole and for different countries separately at regular interval. The most important of them is Demographic Year Book, published by the UN. It provides data on such wide-ranging topics as population size, area, density, urban population, population growth, age-sex composition, number of births and birth rate, number of deaths and death rate etc. Sometimes the volume is devoted to special topics, which include fertility, mortality, marriage, divorce, migration, and population census statistics. The special volume includes detailed statistics regarding a particular topic. Besides, the UN also publishes the Populaiton and Vital Statistics Report quarterly which includes latest data on total population, total mid-year population and estimate of population for a recent reference year. Information on vital events includes total number of births, deaths, infant deaths, crude birth rates and crude death rates.

The United Nations Development Programme (UNDP) also publishes data on various social, economic and demographic aspects for the world and for different countries in its annual Human Development Report.