REPORTS AND INQUIRIES

The World Programme of Population Censuses: Prime Source of Essential Labour Data

The population census constitutes a periodical stock-taking of the people—their numbers, geographical distribution, ages, marital status, places of birth, nationality and other characteristics. In addition to providing demographic data, conventionally obtained in this way for many decades past, the census has tended to become in modern times an instrument for the collection and analysis of data reflecting the social and economic conditions of the nation. It provides in large measure the basic facts without which modern business life and government administration could not function effectively; it supplies the essential information for planning social and economic policy and is of vital interest to all concerned with labour and social affairs.

Under the leadership of the United Nations, statistical circles all over the world are beginning to enter the active phase of planning for the next round of decennial population censuses, to be concentrated around 1960 and 1961. International recommendations are being worked out with the participation of regional technical groups and specialised agencies associated with the United Nations. A strong drive is being made for world-wide coverage, greater international comparability of census results, and, on the practical side, more effective and efficient census methods.

In many countries census planning has already begun and will soon be entering the decisive phase. The present time is therefore appropriate for interested groups to consider their needs for information and how the next census can best meet them. Census authorities, for their part, desire to make the census as useful as possible within the resources available. Frequently, they set up consultative committees consisting of government and municipal administrators, industrialists, economists, social welfare workers, and associations of employers and workers. The nature and limitations of the large operation that constitutes the census are not widely understood, however, and it is the purpose of the present article to consider these briefly; special attention is given to data relating to the labour force, which is the focus of attention of those interested in labour affairs.

The large part that the census already held in the life of the people and its important functions in the future were emphasised long ago by far-seeing men such as President Garfield of the United States who said—

The chief instrument of American statistics is the census, which should accomplish a twofold object. It should serve the country, by making a full and accurate exhibit of the elements of national life and strength ; and it should serve the science of statistics by so exhibiting general results that they may be compared with similar data obtained by other nations. The census is indispensable to modern statesmanship.

From small beginnings the census has developed today into one of the largest operations of governments. Some form of population counting was necessary even in remote historical times for assessing the contribution which various communities could make to armies, public works, or, more recently, to community revenues for public administration. In the nineteenth century, and in some countries even earlier, a major purpose of population counts was the delineation of electoral districts. Although still useful directly or indirectly for some of these purposes, in modern times the census has much wider objectives ; it takes account of the needs of all sectors of the population, of labour, business men, government authorities and others concerned with social and economic affairs.

Census data serve many purposes. Data on the distribution of population by age are essential for estimating the cost of social security measures ; population data permit forecasts to be made of the needs of education services in staff and accommodation ; information on the location and characteristics of the population is needed for the framing of many aspects of national policy on such subjects as housing, health, and town planning. Business men make continuous use of census facts on the location and types of people who constitute the markets for all classes of consumer goods. An increasing amount of data on the labour force are being collected in response to the growing demand of users : occupation statistics, for example, are of value to vocational counsellors in technical schools and employment offices as well as to firms who want to know the occupational skills to be found among residents in localities where they may be planning to establish branch plants.

In general census statistics are essential for study and research concerning social and economic problems, the formulation of policy and the implementation of projects designed to raise levels of living and improve social conditions. Persons interested in labour questions, the promotion of workers' welfare, and related matters therefore have a particular stake in the national census.

Within the scope of the present article it is not possible to do more than review briefly some of the principal aspects of the population census most closely concerning labour affairs. Attention is devoted primarily to the relevant types of data most commonly collected ; some mention is made of their uses ; above all, it seems appropriate now, when most countries are planning their next decennial census, to note some of the limitations of labour data from past censuses, to draw attention to some recent attempts to improve these data, and to note some of the more important recommendations of the United Nations designed to improve their quality and international comparability.

Although of very great interest, the practical methods, or field operations, used in different countries have not been dealt with. It is likely that labour associations, unions, bodies conducting research into labour problems and others with related interests could be of considerable help to census authorities in connection with this, the practical aspect of the census, by helping to awaken public understanding of the nature and purposes of the census and the need to supply complete and correct answers to census questions.

International Co-operation

Although a census is taken primarily to satisfy national requirements, no one will doubt the importance of obtaining statistics which, while satisfying national needs, can also be compared with those of other countries. Attempts at simultaneous population censuses in countries of the British Commonwealth were made nearly one hundred years ago. The idea of a world census of population was first considered by the International Statistical Institute at its St. Petersburg meeting in 1872, and recommendations were subsequently submitted to governments in 1897.

Between the two world wars the League of Nations, through its Committee of Statistical Experts, did much valuable work to promote census taking and improve the methodology of censuses. The Economic and Social Council of the United Nations, through its Statistical and Population Commissions, continued and expanded this work with a view to promoting the holding of censuses in as many countries of the world as possible in or around 1950. One of the most successful regional projects was the 1950 Census of the Americas, sponsored by the Inter-American Statistical Institute, which is affiliated to the Organisation of American States.

Regionally agreed definitions for use in obtaining statistics about the economic characteristics of the populations were used in the census of British West Indies Territories, 1946. As a result of this experiment in regional co-operation more thought is being given to the development of uniform plans for current labour statistics suitable for the region.

To make the most recent experience available for the use of countries in planning their censuses, the United Nations undertook an exhaustive study of census practices and techniques and published several valuable handbooks on methodology.[1] The United Nations also recommended concepts and definitions designed to improve the international comparability of census results and drew up a model minimum programme for census statistics.

These international recommendations are at present under review in connection with the world programme of population censuses to be taken in or around 1960. Regional bodies such as the Conference of Statisticians of Asia and the Far East, the Conference of European Statisticians, the Conference of Statisticians of the Arab States, and the Inter-American Statistical Institute have participated actively. An important development in 1957 was the endorsement by the Ninth International Conference of Labour Statisticians of the International Standard Classification of Occupations.[2] Everything indicates that international recommendations will be widely applied in the 1960 round of population censuses and that a record number of countries will be taking censuses at about that time.

National Census Activity

Each new decade sees more censuses than the last. Between 1945 and 1954, 65 sovereign countries took censuses: 92 non-metropolitan

[1] See, for example, United Nations: *Population Census Methods*, Population Studies, No. 4 (New York, 1949); and *Application of International Standards to Census Data on the Economically Active Population*, Population Studies, No. 9 (New York, 1951).

[2] See "The Ninth International Conference of Labour Statisticians", in *International Labour Review*, Vol. LXXVI, No. 3, Sep. 1957, pp. 278-291.

territories were also covered. The total population concerned was about 1,445 million persons or 59 per cent. of the estimated world population. These figures will undoubtedly be exceeded in the ten years from 1955 to 1964. Information already available shows that the whole American Continent and Europe (including the U.S.S.R.) will be covered (generally in 1960 or 1961), with the possible exception of Uruguay and Albania, for which no plans have been announced. (Uruguay has not taken a population census since 1908.) In Oceania it is not customary, as it is elsewhere, to hold population censuses at the end of the decade; in Asia and the Far East, on the other hand, a little less than half the countries expect to take censuses in 1960 or 1961. Many of the remaining countries have chosen a year between 1955 and 1958.

A number of countries in Africa and Asia (e.g. Afghanistan, the Mongolian People's Republic, Indonesia and Ethiopia and Eritrea) are expected to take their first census, or their first since the 1930s, in the near future. No firm date has been announced in respect of some of these countries, nor for Saudi Arabia, Yemen, and a few other countries in the Middle East, and it is very doubtful in some cases whether a census will actually be taken by 1964. Hence the chief gaps in the world census programme will again be Africa and the Middle East; but the record established between 1945 and 1954 will nevertheless be broken.

Scope of the Decennial Census

Until comparatively recently there was a tendency in many countries for more or less simultaneous inquiries on various topics to be made at the time of the decennial census. Thus, in addition to population and housing, other topics such as agriculture, forestry, fishing, retail and wholesale trade, and manufacturing have sometimes been covered. Around the turn of the century, the widespread introduction of mechanical data-processing methods tended to encourage the inclusion of more subjects, while at the same time the volume of data tabulated from the population and housing census continuously increased. The long delays—five years or even longer—before the census results were published could be attributed largely to the concentration of population, housing, and so-called " economic censuses " in a single year.

To make more rational use of census staff and equipment and to permit preparation and publication of the results within a reasonably short period, many countries are now avoiding simultaneous censuses on population and other subjects. As a rule, however, an inquiry on housing is conducted in conjunction with the population census proper as it is most convenient to obtain housing information while the enumerators are visiting each dwelling place. There is an intimate connection between " families " and " households ", as there is between households and dwelling places; statistics of the latter are only meaningful in terms of the people who live in them.

The population and housing census is a very large undertaking and developments in the last few decades have so expanded its scope that much thought has been given to problems of processing. As a result the operations involved have been simplified and the tabulation programme has been trimmed to eliminate unnecessary detail. Among the techniques utilised to rationalise census work is " sampling ". On the one hand, this has enabled certain data to be obtained with less effort and delay and at lower cost; on the other, it has made it feasible to produce additional data that could not formerly be made available

because of the enormous effort and cost that would have been involved where all persons in the population were considered instead of only a sample.

Even with the use of sampling techniques, the magnitude of the undertaking called " the census " has reached astounding proportions. The results of the United States 1940 census of population and housing comprise 40,000 pages of published material. It was in this census that new ground was broken with the greatly expanded data on the labour force discussed below.

Census Statistics and Labour Affairs

Government, business and labour circles have common interests in the basic economic and social data provided by the census. Although the various associations and unions representing organised labour do not, in the strict sense, initiate economic activities, or decide and implement general economic policy—these being the prerogatives of entrepreneurs and public (i.e. government) agencies—the policies pursued by these representatives of labour have very important economic consequences. Accordingly, labour leaders need the data concerning general economic and social conditions which also form the background of private and government enterprise, and of public social and economic policy.

In addition all those concerned with labour affairs have a special interest in promoting the compilation of particular kinds of statistical data from the census, as well as from other sources. Specialised statistics are frequently needed to throw light on the economic and social problems affecting different industries or workers in different occupations. Moreover, census data are needed as " benchmark " (or base year) data for use in compiling current statistics between censuses on such subjects as employment and labour supply for all those concerned with labour questions.

It is during the planning stage, which may begin from two to three years before the census day, that the needs of users of census data must be carefully considered. Within the financial and other resources available the kinds of information to be sought, the measures to be taken to obtain satisfactory census returns and the programme for processing the data have to be decided in advance. Once the plans are well advanced the possibility of introducing changes is quite limited, although some flexibility remains as regards the degree of detail in which the data are to be produced and published. Some countries arrange to produce additional detailed data on particular areas or groups at the expense of the organisation requiring the data.

Most census authorities make special arrangements for receiving and considering suggestions from the general public. Advisory committees are sometimes set up representing respondents (i.e. householders) as well as various types of users of census data (e.g. research institutes, government officials, municipal administrators, industrialists, traders, economists, statisticians, social welfare workers, employers' associations and trade unions). While census authorities welcome suggestions for the forthcoming censuses and frequently take the initiative in these matters, for a number of reasons the attention paid to this question varies greatly from country to country. In some cases the scope and programme of the census are laid down rather rigidly in legislation or ordinances. In many others the resources available for the census

do not permit much flexibility and the advantage of consultation may therefore be limited. But experience in some of the countries which rely heavily on census data, the United States and Canada for instance, suggests that there is much to be gained from such advance consultation.

Labour Force Statistics and Related Data

The population census, unlike any other form of statistical inquiry, provides detailed information about each and every person who can be located throughout the whole country at the time of the census, except for temporary visitors from abroad, foreign diplomats and other special categories who are usually specifically excluded. In nearly all censuses each person of working age is asked to supply answers to certain questions regarding his or her economic activities, if any; the replies are used by the census authorities to identify returns relating to persons in the labour force and persons outside it.

On the basis of the information obtained the composition of the labour force may then be expressed in terms of the personal characteristics of its members (place of residence, age, sex, marital status, number of dependants, etc.—details which are obtained also for persons outside the labour force), and according to their "economic characteristics" or how and where they earn a living, in other words, their occupation, the industry in which they work and their status in the enterprise (employer, worker on own account, employee or unpaid family worker). In some countries information is collected concerning the amount of income or wages earned during the past year, hours worked in a specified week and other aspects of employment.

As a rule, data on the labour force account for a large proportion of the total volume of census data published. For this reason alone suggestions for inclusion in the census of additional items of labour force data are likely to be subjected to a very critical review. Furthermore, experience shows that every expansion of the census questionnaire not only implies additional operations to be fitted into the census programme, and hence entails additional costs, but also tends to impair the quality of the replies to the questionnaire as a whole. This arises from the natural human resistance to answering long questionnaires. Another important consideration is whether it is likely (or can be demonstrated by a pre-census test) that replies to a proposed new question can be given readily and with sufficient precision by the persons who usually supply the answers to census questions relating to the different members of the household.

If the questionnaire is filled in by the head of the household—who is normally given adequate time to do so and has the opportunity of himself questioning the various members of the family—the difficulties of getting correct responses are usually much smaller than in the case where census interviewers fill in the answers themselves. Frequently, they have to depend on the housewife alone for all the information about the family. In either case, however, questions that would require long or complicated instructions to guide the respondent (or the interviewer) are generally unpractical. They are time-consuming and seldom give good results. Enough has been said to indicate that the design of the census questionnaire is of paramount importance and to show that, in practice, there are strong limitations on the type of information that can be successfully obtained in a census.

In the last few decades most censuses have included the following : data on the total labour force and its demographic composition (national manpower resources) ; utilisation of manpower (employment, underemployment, unemployment) ; the distribution of the labour force according to status (as employers, own account workers, employees and unpaid family workers) ; the distribution of manpower among the various industries and occupations. A few recent censuses have also covered certain conditions of employment (wages and time worked) or obtained information on items such as profession or trade learned and length of training ; secondary occupations (cases of dual occupation) ; and transportation used for travelling to work, or distance travelled. It is of interest to examine more closely some of these statistics which are of special interest for labour affairs and to note some of the more difficult census problems associated with them.

National Manpower Resources

That data on national manpower resources are essential is obvious. The question is rather what kinds of data about the labour force should be given the highest priority. Those interested in young workers could not be fully satisfied with data for the age-group " under 20 years " ; it is important, therefore, to consider what census tabulations should give details for young workers at each age (i.e. 14, 15, etc.). Social insurance administrators also would be interested in these data, as well as corresponding data, by single years of age, for workers aged 60 and over.

Detailed data on labour force characteristics by local government areas, or smaller units such as counties, are essential for certain purposes, e.g. for business men considering setting up a plant or business in a given area. These details are also needed for analysing labour force growth in the different areas in inter-censal periods, and they are of great interest to trade union organisers. The needs of different classes of users for detailed census data probably greatly exceed the resources available to census authorities. However, before the census programme is finally determined it is important that these needs be made known.

Apart from the question of the form and the degree of detail in which labour force statistics should be compiled in the census, there are other problems to be solved. A basic difficulty is to find the most useful and practical definition of the labour force ; the persons who belong to the labour force can then be distinguished and useful statistics may be compiled.

From earlier remarks it might be concluded that the identification of persons in the labour force is a simple and straightforward matter. This is by no means the case. Consider, for example, persons who are to be classified as agricultural workers. In many parts of the world agricultural workers constitute the majority of the labour force and they are an important element almost everywhere. Much agricultural employment is a family matter ; the farm is both a place of business and a home. The work of family members such as wives and children, as well as that of domestic servants who may spend some time at farm work as well as at household tasks, would have to be taken into account in connection with measuring the total labour input devoted to agricultural production.

It is impracticable in the census, however, to include among those recorded as agricultural workers persons whose contribution to farm work is negligible. How much work must such a person do on the farm to be counted as a member of the agricultural labour force ? As a basis for international comparisons, the international recommendation is that account should be taken of those unpaid family workers who work for at least one-third of the usual weekly hours of work. It is recognised, however, that it is particularly difficult to obtain reliable information about the hours actually worked on the farm by family members and other part-time farm workers. The problem of farm household domestics is similar to that of other workers with dual occupations, and an attempt must be made to determine whether they work mainly on household duties or agricultural work.

Certain other classes of persons are difficult to classify, either as " in " or " out " of the labour force. Examples are the long-term unemployed (whose interest in accepting work may often be doubted if there exists a strong demand for labour) ; and intermittent, seasonal and casual workers (who may intersperse periods of work with periods of voluntary idleness). It is also evident that in order to compile a figure representing the labour force a reference date must be selected and a short period of reference, such as a day or a week, is nearly always chosen. There are great difficulties in using a longer period. In the course of a long period many people enter the labour force, or leave it, either voluntarily or as a result of invalidity or death ; some may take up work and " retire " again within the period considered. Over a whole year, for example, more persons will contribute some labour to the nation's productive effort (i.e. labour input) than would be at work at any particular moment during the year.

So far, censuses have not thrown much light on total labour input. A near approximation has been made in the form of statistics of persons classified according to total weeks worked in 1949 (the year preceding the census) by persons alive in 1950, as tabulated from the 1950 Census of the United States. Such data give an idea of the manpower resources actually utilised in the economy. Statistics of employment and unemployment at different dates in the year, as compiled each month in many countries, also give an idea of the extent of utilisation of the current supply of manpower, especially if data on hours worked also are available.

As most censuses obtain data on the economic characteristics of individuals who were economically active on the census day, or during the week preceding the census, the results reflect primarily the current activities of individuals and thus provide a measure of the current labour force, i.e. the actual supply of manpower. The potential supply of labour at the same date is another matter, but is one of great significance.

The proportion between the number of persons in a given population group who are members of the labour force and the total number of persons in the group is referred to as the " labour force participation rate " for that group. Labour force participation rates for persons of each sex in the different age groups are computed from census data and are analysed to aid in assessing the future labour force. The labour force in most countries is continuously expanding through natural increase of the population and changes in its age composition, and in some cases also through immigration. It is important to have information on these aspects for planning economic development needs over the years ahead.

Utilisation of Manpower

Statistics showing the extent of utilisation of available manpower, i.e. statistics of employment, underemployment and unemployment are in constant demand. No single figure tells more about the welfare of labour and the economic health of the nation than the proportion of the labour force that is unemployed. Intelligent and effective collective bargaining requires a knowledge of the level of employment in the industries concerned, the relative importance of the employment provided by these industries in different areas and the trends in such employment.

Data on inter-censal changes in the volume of employment by industries and occupations—and, conversely, changes in levels of unemployment or underemployment in different industries and occupations—provide indicators of economic development; they also focus attention on the sectors of the labour force where manpower shortages or surpluses exist. Census data thus indicate the direction that practical manpower policy should take and give valuable guidance to those concerned with vocational training and technical education.

In industrialised economies unemployment fluctuates with changes in the general level of economic activity, and also to some extent with the seasons. It is evident, therefore, that the date on which the population census is taken and the period of reference to which the questions on employment and unemployment relate have a marked effect on the results obtained. The questions must relate to the same date, or period, for both employment and unemployment in order to determine in which of the two categories an individual should be placed.

The difficulty involved in framing census questions on employment and unemployment has not been fully appreciated by some census authorities in the past. Very often the respondents were simply asked to state whether they operated their own farm or business or were employed or unemployed. Misleading answers were often obtained because there was a lack of precision about the inquiry. To many respondents the intent was not clear, e.g. they might say they were " unemployed " if they did no work on the census day, when in fact they had a regular job but were ill or taking a day off. Casual and seasonal workers frequently do not know how to reply to such a vague question. To assist census staff to decide border-line cases, and in order to compile statistics on the duration of unemployment, a supplementary question is commonly added to ascertain the date since the respondent last worked.

Although as a result of these shortcomings the statistics of unemployment obtained in some past censuses have been rather poor, the effect on the statistics of employed persons—who outnumber the unemployed many times over—has not generally been very important. It must be admitted, however, that in some of the least developed areas of the world, where socio-economic organisation is primitive, the concepts of employment and unemployment appropriate to industrialised economies have very little, if any, application. It is also true that in somewhat more advanced areas—i.e. areas with a more developed economic organisation and some specialisation of labour, but still relatively underdeveloped, primarily agricultural and suffering from chronic underemployment—there may be comparatively few persons wholly unemployed in the sense that they have lost their jobs, or have never been

able to get work. In such cases special intensive investigations concerning the incidence of underemployment, intermittent employment and seasonal unemployment are needed.

During the last twenty years a great deal of attention has been given to techniques of obtaining more precise information on the employment status of individuals, i.e. whether or not they have jobs and whether they are actually working or not. The most important recent development in census-type statistics of employment and unemployment was initiated in the United States, where the so-called " labour force concept " was first adopted for the census of 1940. In this census, and in the United States Current Population Survey (commonly called the Labour Force Sample Survey), attention is concentrated on the current manpower supply, i.e. manpower in use, or persons actually having jobs, and persons offering to work during a specified week.

For this purpose a distinction is drawn between persons who worked during the week of the census, or survey, and those who had a job but were not at work due to illness, vacation or other reasons; the identification of unemployed persons is taken out of the realm of personal attitudes by applying, so far as possible, an objective criterion, namely that the individual was " looking for work " (with the proviso that persons not looking for work for the reason that they were ill or had good grounds for believing that there were no suitable jobs open in their community are also counted as unemployed).

A similar approach to the definition of employed and unemployed persons was adopted in a resolution of the Eighth International Conference of Labour Statisticians in 1954. The Conference ruled that persons temporarily or indefinitely laid off from their jobs should be considered as unemployed for statistical purposes.

It is clear, therefore, that there are many different ways of presenting information about a particular group of workers ; the numbers grouped under the heading " unemployed " can vary according to the basis adopted for the particular purpose in hand. The modern trend towards more precise classification and more detailed analysis of labour force categories has faced census authorities with a number of difficulties, both methodological and financial.

In view of the great complexity of distinguishing the unemployed in a general population census, and particularly in view of the long period which may be required to tabulate the data, censuses are often regarded as less suitable than other statistical approaches, such as a sample survey of the labour force, for determining the level of unemployment. Excellent results have been obtained in labour force sample surveys, where the interviewers can profit from more rigorous training than census enumerators and can acquire skill with experience.

The sample survey, however, is suitable only for providing broad aggregates with a very limited number of subdivisions—e.g. by region, sex and major branch of activity. It is not, therefore, a complete substitute for a census. Countries which are able to study unemployment both through the census and through a sample survey may find that the latter provides sufficient information on changes in the number of the unemployed, but may have to depend on the census for information on the characteristics of the unemployed and their distribution by local government area, occupation, and other features essential to programme planning or administrative action.

Few countries have yet attempted to obtain statistics of underemployment, either in censuses or otherwise. Techniques of statistical

investigation in this field are not yet well developed.[1] In view of the complex nature of the questionnaire needed for inquiries on underemployment, it is unlikely that countries will be disposed to include such inquiries in their general censuses. Nevertheless, it may be possible to obtain, without much difficulty, some information on hours worked, and on part-time employment, and so to provide some indication of the extent of underemployment.

The general inclination appears to be towards using specially designed sample surveys and highly trained interviewers for inquiries on underemployment. Conducting a special sample survey in conjunction with the general population census, in countries where underemployment is significant, would appear to have great advantages. Where a system of regular labour force sample surveys is in use, data on underemployment can be obtained from time to time, as is done in Japan and Puerto Rico.

Classifications by Industry, Status and Occupation

The collection and classification of data on the economic activities of the population are among the most complex of investigations that come within the ambit of the census. The problem of classification is never completely solved ; it is complicated by the development of new fields of industrial enterprise and by the splitting and overlapping of fields previously clearly definable, by the emergence of new occupations, by further specialisation and division of labour and by the growing social requirement for a more adequate and detailed knowledge of the facts of economic life. As pointed out elsewhere, there are practical difficulties in obtaining precise and detailed information in response to census questionnaires. A further difficulty is to design classifications of industries, occupations, etc., in such a way that they permit the most useful presentation to be made of the information actually collected. It is especially in this connection that attempts to achieve international comparability of census results encounter many obstacles.

Despite the difficulties, recognition of the advantages of international comparability of census results in a world that is becoming continuously more economically integrated has resulted in much progress in recent years. International standard classifications of industries and of occupations are now available. The former is in wide use ; the latter, of quite recent origin, appears likely to be adhered to by many countries in future statistical work.

Employed persons may be classified according to their jobs in several different ways—by the nature of the business or establishment in which the job is located, or by the relationship of the individual to the enterprise (as employer, employee, etc.), or by the kind of work performed by the individual.[2]

The first approach is classification according to the nature of business carried out by the establishment, i.e. *classification by industry* (branch of economic activity). It is the classification most widely used in economic statistics because it provides groupings of great utility for economic analysis. The census data on the distribution of the labour force by

[1] The subject was considered by the Ninth International Conference of Labour Statisticians (Geneva, 1957), which adopted a recommendation regarding measurement of "visible" underemployment. In this connection see "The Measurement of Underemployment", in *International Labour Review*, Vol. LXXVI, No. 4, Oct. 1957, pp. 349-366.

[2] For a more detailed treatment see : United Nations, *Application of International Standards to Census Data of the Economically Active Population*, op. cit.

industry are among the most important and the most widely used to illustrate the economic structure of the nation.

For international purposes the *International Standard Industrial Classification of All Economic Activities* was developed by the United Nations Statistical Commission.[1] When information is obtained from the individual (as in a population census) he is classified on the basis of the principal product produced or treated, or the type of service rendered by the establishment in which he is currently employed, e.g. grain farming, coal mining, bread baking, manufacture of rubber tires, rail transport, education, laundering.

The second way of classifying people in their jobs is according to the relationship of the individual to the enterprise, or *classification by status* (as employer, employee, etc.).

The Population and Statistical Commissions of the United Nations, adopting earlier proposals by the Sixth International Conference of Labour Statisticians, have recommended the use for purposes of international comparisons of four basic status categories: employers and workers on own account, i.e. self-employed persons who operate their own business in anticipation of an excess of revenues over expenses, but distinguished on the basis of whether they regularly employ paid assistants or work on their own account without employees; employees (including salaried managers) working for a stated wage or salary per unit of time, or a percentage commission on production, sales, or the like ; and unpaid family workers assisting without normal wages in an enterprise operated by a member of the same household.

Statistics showing numbers of persons in the various status groups are extremely valuable for administrative purposes, among others. They may be used to estimate the number of employers in a specified industry who would be affected by proposed legislation. The numbers of employees who would be encompassed in a proposed social security scheme and their approximate distribution by number of dependants and by age may be urgently needed ; these data could be estimated from the census tables. Analysis of the shifts in the distribution of the labour force according to status is extremely useful in the study of the impact of economic change or development.

The third classification dealing with individuals in their jobs (i.e. by the kind of work performed by the person) is *classification by occupation.* In this case the individual is classified according to the nature of his work regardless of the kind of establishment in which it is performed or of his status. For example, a carpenter or a truck driver or a waiter is classed as such whether he works in a factory, a retail store, a hotel, or for a shipping company. The worker is also classified according to the occupation performed whether he operates a business on his own account or works as a paid employee.

In order to facilitate international comparisons of occupational statistics and to provide a classification which, after suitable adaptation, may be put into use in any country which so desires, the I.L.O. has taken the lead in developing the International Standard Classification of Occupations (I.S.C.O.). This classification was endorsed by the Ninth International Conference of Labour Statisticians, which met in Geneva in 1957.

Occupational data are useful as an indicator of the level of development of an economy. The occupational make-up of a population is

[1] Statistical Papers, Series M, No. 4 (New York, United Nations, 1949).

influenced by the extent of division of labour, the degree to which factory-type operations have evolved and the methods of transport and distribution employed. Thus a study of occupational trends in an economy reveals, through the changing patterns of numbers engaged in different kinds of work, the nature of economic development that has taken place.

Administrative uses of occupational data are many. In appraising the manpower resources of a country in connection with a production programme, for example, it is necessary to have detail by occupation. The kinds of workers needed as immigrants, or, conversely, who could be spared as emigrants, must be identified with reference to their occupations. Vocational guidance, apprenticeship and training authorities, placement services, labour unions and others interested in employment problems are all regular users of occupational data.

Occupational data are also important for social research. Broad occupational groups such as the major groups of the I.S.C.O.—clerical workers; professional, technical and related workers; service, sport and recreation workers; etc.—are significant groups with a certain homogeneity from the viewpoint of social attitudes and behaviour. These categories are of considerable use in studies dealing with such subjects as fertility and mortality rates among various social groups, family size and composition, family income, consumption patterns and housing policy. In order better to meet the needs for data of this kind, a further type of stratification of the labour force has been attempted in a few European countries. The first step is to identify population groups showing greater homogeneity in economic and social characteristics, i.e. social classes or socio-economic groups. The range of economic and social relationships is very wide even in a single country and the problem of finding a suitable set of social-status or socio-professional groups for international purposes is extremely complex. This difficult question is under consideration by the Conference of European Statisticians in connection with its review of the United Nations draft proposals for the 1960 round of population censuses. It constitutes a sizable project in itself.

The I.S.C.O. has been developed according to the general principle of classifying together workers performing similar functions. Similarity of function, however, can be related to a number of factors, including education and training, material worked with, tools and equipment used, working environment and others. Each of these factors has been of particular importance in the formulation of certain occupational classes in the I.S.C.O., for example, education and training for professional, technical and related workers; material worked with for leather cutters, lasters and sewers; tools and equipment for watchmakers, jewellers, engravers; working environment for miners, quarrymen and related workers. This does not exhaust the list of particular factors used but it indicates their wide range.

The task of classifying occupations of the population into groups so chosen as to bring together like types would be a difficult operation even if all occupations were recorded in precise terms on the census schedule. It is made more difficult by the failure of many persons to state exact descriptions or specific occupations, either from carelessness or a lack of knowledge of occupational designation. Some conventional occupational descriptions are clear-cut and others are indefinite or have dual or even triple meanings, and occupational terms frequently vary from one enterprise to another and one region to another.

A source of ambiguity is the use by some persons of the title of their trade union to designate their occupation ; many unions are in fact organised on an industry basis and cover a wide variety of occupations. Some occupations are quite closely associated with particular industries or products and have practically the same name. Perhaps this is one reason why the concepts of industry and occupation are sometimes confused.

The general experience of census authorities has shown that the same degree of precision could not be achieved in occupational data as in statistics of other items included in the census inquiries. The duties of clerical workers, for example, are multifarious and census descriptions seldom provide a satisfactory basis for classification into specific occupation groups. Many persons do not use their individual designations but use collective descriptions such as bank officer or official, railway official, public servant, postal official, whereas in fact some of these persons would be cashiers, postal clerks, letter carriers, station masters and various other specific occupational types. However, despite their limitations, census data on the occupational distribution of the labour force are useful for many purposes.

Conditions of Work

In considering that aspect of the social and economic conditions of the people referred to here as " conditions of work ", it must be borne in mind that the population census is an inquiry addressed to individuals and not to enterprises and similar economic units. Most countries also conduct economic censuses, i. e. inquiries concerning the agricultural, mining, manufacturing and other sectors of industry; in these, the questionnaires are directed to the management of each enterprise. Some kinds of information about workers are more appropriately obtained in the population census while others are best collected from enterprises.

What may appear to be duplication is sometimes necessary because an economic census (or censuses) conducted in or about the same year as the population census may cover only one or two branches of industry, while the population census covers the whole population.

As a general rule more precise information can be obtained from managements of enterprises than from persons who answer population census questionnaires ; the latter tend to rely largely on their memory, while the replies of enterprises are normally based on business records.

Information on aspects of working conditions such as pension schemes, paid vacations, labour turnover, industrial injuries and occupational diseases are obtained in some cases from managements and in others from the individuals concerned or from administrative authorities' records. Although it would be possible to include some of these items in the census, inquiries on them require complicated questionnaires and are better undertaken separately.

In addition, it is not always necessary to question all enterprises or all managements on such matters ; a representative sample of workers or of enterprises can be selected for interview or be sent questionnaires. In this manner careful attention can be given to detail and more reliable data obtained than would be possible in the census.

The principal items relating to conditions of work covered in recent national population censuses, as revealed by a United Nations survey of 52 censuses, are hours worked in a specified week and income during

the year preceding the census. Although perhaps more closely related to regularity of employment, or to unemployment and underemployment, a further item may also be mentioned, namely number of weeks worked in the year preceding the census. Only about twelve countries obtained data on hours or weeks worked ; about half of these obtained data on days or hours worked in a given week. Approximately the same number of countries obtained information on income, most commonly on wages and salaries earned.

There are many reasons why the majority of censuses have not included these items. In the first place there is the fear of overloading the census schedule with questions, thus greatly increasing the time needed for collecting and processing census data and the cost ; some countries met this difficulty in part by obtaining the information from a sample rather than from all respondents. Secondly, there are considerable technical difficulties in obtaining complete and accurate information on these topics, in some cases arising out of the method of collection of household census schedules. Thirdly, it is believed that respondents are very reluctant to answer questions on income. Finally, some statistics on hours worked, income and weeks worked in the year are often available from other sources, even though they do not provide the same possibilities for analysis as do census data in which relationships between the income and other characteristics of income earners can be given prominence.

It is in underdeveloped countries that statistics of hours worked and of incomes would be particularly valuable in planning economic development and for other purposes ; but it is precisely in these countries that the difficulties of obtaining such data in a population census are likely to be greatest. Incomes and hours worked are notoriously difficult to measure in respect of farmers and farm workers, handicraftsmen, traders and some other groups that are numerically important in underdeveloped economies. Any attempt to collect information in the census on weeks worked in the preceding year is likely to result in incomplete coverage and inaccurate information because memories are not to be relied upon. Even in the case of hours worked in a specified week, it has been found that the results suffer if the data are not collected within the next week and, likewise, answers on other questions become less and less precise with the lapse of time.[1]

From the above it may be concluded that the census is likely to be a suitable means of obtaining the above-mentioned data only in a few countries where the psychological attitudes of the people and other conditions are especially favourable. The various regional conferences and committees of statisticians from different countries have concluded that these items should not figure in the list of topics recommended for inclusion in the 1960 round of censuses, which is soon to be given final form by the United Nations. The Conference of European Statisticians decided that income should appear as an optional topic in a supplementary list.

Despite the difficulties involved, each country will wish to consider seriously the advantages of obtaining census data on income, even restricted to wages and salaries earned. As pointed out by the Conference

[1] It may be noted that data on employment status in the 1950 census of the United States pertained to the calendar week preceding the enumerator's visit. This week, defined as the " census week ", is not the same for all respondents because not all persons were enumerated during the same week. In 1940 a fixed week of reference was used for all persons regardless of the actual date of enumeration.

of European Statisticians, however, special sample surveys are perhaps a more appropriate means for collecting the data in question. This is equally true of data on hours worked and weeks worked during the preceding year. Nevertheless, where such surveys are not yet in use the possibility of utilising the next population census should be examined.

The additional census costs could be limited by putting the necessary supplementary questions to a representative sample of the population as was done for example in the 1950 Census of the United States, where the questions on weeks worked and income in 1949 were asked of a 20 per cent. sample of persons aged 14 years and over.[1]

[1] In this census the question on hours worked in the census week was put to all persons aged 14 years and over.