# POPULATION CENSUS METHODS

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# POPULATION CENSUS METHODS

Department of Social Affairs
Population Division

Department of Economic Affairs
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# FOREWORD

This report deals with methods of obtaining information in population censuses, on the size of the population and its principal characteristics. The characteristics considered here are those which were listed by the Population Commission at its third session, as most important for investigation in the censuses to be taken by various Governments in or about 1950.[1] The recommendations of the Population Commission and other international bodies with regard to the methods of defining, collecting, and tabulating data on these subjects are presented with a survey of the methods actually used in the recent censuses of fifty-three countries throughout the world.

The report has been prepared as one means of implementing a resolution adopted by the Economic and Social Council at its fourth session, requesting the Secretary-General of the United Nations to offer advice and assistance to Member States, with a view to improving the comparability and quality of data to be obtained in the censuses of 1950 and proximate years (resolution 41 (IV), 29 March 1947). It is believed that the information on the methods used in the censuses of different countries which is presented here will be of substantial assistance to Governments in planning their population censuses so as to ensure maximum usefulness and international comparability of the results. In addition, this information will be useful to persons who use census statistics for international compilations or analyses, and who wish to study the questions of comparability and interpretation of the statistics, which result from the use of different definitions and methods in the various countries.

Preliminary information on most of the topics discussed here was previously given in a series of reports on various demographic characteristics as investigated in population censuses, which were published by the Statistical Office and the Department of Social Affairs under the title, *Studies of Census Methods*. The reports in that series are superseded by the revised information presented here.

A preliminary summary of *Studies of Census Methods* was presented in chapters V to XV, inclusive, of the provisional edition of the *Population Census Handbook,* issued by the Statistical Office of the United Nations in October 1949. Chapters V to XV of that *Handbook* are also superseded by the revised information presented here.

The report has been prepared by the Statistical Office of the United Nations Department of Economic Affairs and the Population Division of the United Nations Department of Social Affairs, in collaboration with the Food and Agriculture Organization of the United Nations and the International Labour Office, and edited by the Population Division. The parts prepared by each office are indicated in the table of contents.

[1] *Report of the Population Commission* (third session). United Nations document E/805. Lake Success, 26 May 1948. (Mimeo.)

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# I. INTRODUCTION

*(prepared by the Population Division of the United Nations)*

## A. Need for improvement of sources of information on world population

The lack of adequate information about the population of the world and of various countries and territories is a matter of considerable concern to the United Nations and affiliated international organizations, as well as to governmental agencies, research institutions and individual scientists all over the world. Such information is needed for studies of international problems such as the production and distribution of food supplies, conservation of resources, formulation of social policies and raising standards of living in the world's problem areas.

The inadequacy of the existing population statistics was brought out sharply in the first issue of the United Nations *Demographic Yearbook*.[1] A table in the *Yearbook* showing the growth of total population as indicated by figures from censuses taken since 1900 was filled out for only 147 of the 245 areas identified; these 147 areas contained only 73 per cent of the estimated world population. In some of the remaining areas not more than one census had been taken since 1900, and in others no population censuses had ever been taken. The coverage of tables showing certain important characteristics of the population was even smaller. For example, statistics of the population by age, sex, and marital status were presented for only 41 areas, containing 45 per cent of the world population. Moreover, the usefulness of the statistics presented was greatly impaired by major differences in the definitions and methods of collecting the census data, and by the unreliability of the figures for some countries.

## B. Activities of international organizations concerned with population censuses

### 1. Early attempts at standardization

The history of efforts on the part of international agencies to improve the coverage and comparability of population census statistics goes back at least to the second half of the nineteenth century. At a meeting of the International Statistical Institute held in St. Petersburg in 1872, certain standards were adopted with regard to the methods of population censuses and to the subjects on which information should be obtained.[2] The idea of a simultaneous census of the whole world took form at a later session of the Institute, held in St. Petersburg in 1897, when Joseph Körösi, a Hungarian statistician, proposed that all Governments take censuses in the year 1900, following the standards agreed upon in 1872.[3] From time to time since then, various organizations interested in population statistics for the world or for certain regions have adopted resolutions urging Governments to take censuses in certain years, or recommending certain subjects to be investigated and certain definitions and methods to be used. The earlier resolutions of this kind now have little interest except as evidence of the importance which international agencies continually attached to the need for better information in this field. The most recent recommendations of international bodies, however, are presented in this report.

### 2. Actions of the Population and Statistical Commissions

This subject was one of the first to occupy the attention of the United Nations Population and Statistical Commissions after their establishment in 1946 by the Economic and Social Council. At their first sessions, the two Commissions received reports on co-operative plans for population censuses of the American nations in 1950 which were being prepared under the auspices of the Inter-American Statistical Institute. The Statistical Commission recorded its welcome of this co-operative programme and expressed its belief that the experience so gained would be of value in connexion with possible projects in all countries of the world.[4] The Population Commission

[1] United Nations Statistical Office, *Demographic Yearbook, 1948*. Lake Success, 1949. p. 10.

[2] *Bulletin de l'Institut international de statistique. Tome XI, première livraison,* 1899. p. 200.

[3] Körösi, J. "Projet d'un recensement du monde." *Etude de statistique internationale.* Paris, 1881.

[4] *Report of the Statistical Commission* (first session). Economic and Social Council, Official Records, second year, fourth session. Supplement No. 6. Lake Success, 1947. pp. 9-10.

also welcomed this step in the development of international co-operation in census work and expressed a wish to encourage population censuses elsewhere in the world. While recognizing that it would not be practicable to plan for a complete world census of population in 1950, the Population Commission expressed the belief that much could be done to improve the co-ordination of national population censuses to be taken about that time, and recommended that the United Nations Secretariat take certain steps to encourage and assist Member States to this end.[5]

The Economic and Social Council received the reports of the two Commissions at its fourth session. The Council adopted a resolution recording its welcome of the co-operative population census programme of the American nations, recommending that all Member States planning population censuses about 1950 use comparable schedules so far as possible, and requesting, *inter alia,* that the United Nations Secretariat offer advice and assistance to all such Member States as were prepared to take comparable population censuses.[6]

In April 1947 the United Nations Secretariat, considering that the most effective assistance which it could render at that time was to initiate an exchange of information on census methods, requested each Government to submit information on the schedules, instructions, publications, etc., of the last population census, together with such preliminary information as might be available regarding plans for the next census. The materials received in response to this request were supplemented by referring to census volumes, yearbooks, and other official publications relating to recent censuses which were available at the United Nations headquarters and in neighbouring libraries. On this basis the Secretariat, in co-operation with the Food and Agriculture Organization and the International Labour Office, prepared a series of reports on the methods used in the censuses of various countries, for collecting and tabulating statistics on certain important subjects. These reports were published during the years 1947 to 1949, under the heading *Studies of Census Methods.* They were distributed to the national statistical agencies and submitted to the Population and Statistical Commissions at their second and following sessions, as an aid in their consideration of population census questions. The *Studies of Census Methods,* revised and consolidated, form the basis of the present publication.

At the second session of the Population Commission, held in August 1947, further consideration was given to international population census work.[7] The Commission drew up lists of topics on which, in its opinion, it would be desirable to obtain comparable information in the censuses to be taken about 1950, together with certain comments on the methods of conducting the censuses, on alternative definitions of the items listed, and on the problems of attaining international comparability. At the request of the Commission, these proposals were circulated, for comment, among the national statistical agencies. They received the support of the Statistical Commission at its second session, held in August and September 1947.[8]

The comments received from national statistical agencies on the proposals of the Population Commission were submitted to both the Population and Statistical Commissions at their third sessions, held in April and May 1948. The Commissions also received a series of draft recommendations regarding the subjects to be covered by population censuses, the definitions to be used, etc., prepared by the Secretariat in collaboration with the Food and Agriculture Organization and the International Labour Office. The Statistical Commission made a number of observations on these materials, including the following:[9]

"In reviewing the list of topics suggested and the recommended definitions, the Statistical Commission considers it not practicable to regard the list of subjects as a recommended minimum to be used by all Governments or to regard the definitions as equally applicable to all countries in view of the wide differences in national needs and statistical facilities. It does, however, consider that all countries taking censuses should try to provide comparable data on the following items: total population, age, sex, marital status and types of economic activities. It is recognized that for various reasons the other items on the list contained in the Secretariat draft would be applicable in various combinations to the purposes of smaller groups of countries, although the importance of

[5] *Report of the Population Commission* (first session). Economic and Social Council, Official Records, second year, fourth session. Supplement No. 5. Lake Success, 1947. pp. 7-8.

[6] *Resolutions adopted by the Economic and Social Council during its fourth session.* United Nations document E/437. Lake Success, 22 May 1947. Resolution 41.

[7] *Report of the Population Commission* (second session). United Nations document E/571. Lake Success, 29 August 1947. (mimeo.) pp. 5-7, 16-22.

[8] *Report of the Statistical Commission* (second session). Economic and Social Council, Official Records, third year, sixth session. Supplement No. 3. Lake Success, 1948. p. 13.

[9] *Report of the Statistical Commission* (third session). Economic and Social Council, Official Records, third year, seventh session. Supplement No. 5. Lake Success, 1948. p. 15.

these items is such that the attainment of comparability among even a limited number of countries would be a significant advance. This is not to imply that there are not other subjects on which it may be important to obtain international comparisons.

"The Statistical Commission points out the desirability of using statistical sampling methods in population censuses and notes that these methods could effectively be applied in some countries and under certain conditions even with respect to the five items listed . . . above."

The Population Commission noted the observations of the Statistical Commission and the comments received from Governments, and adopted the following list of twelve recommended subjects for inclusion in the population censuses to be taken about 1950:[10]

1. Total population
2. Sex
3. Age
4. Marital status
5. Place of birth
6. Citizenship (legal nationality)[11]
7. Mother tongue
8. Educational characteristics
9. Fertility data
10. Economic characteristics
    - (*a*) Total economically active and inactive population
    - (*b*) Occupation, industry, and industrial status
    - (*c*) Population dependent on various types of economic activities
    - (*d*) Agricultural population
11. Urban and rural population
12. Households (including relationship to household head)

In presenting this list of topics, the Population Commission expressed general agreement with the views of the Statistical Commission, and in particular with the opinion that statistics on total population, sex, age, marital status and economic characteristics were especially important. The Population Commission also made the following remarks:[12]

"The objects of the Commission in preparing this list of subjects and the accompanying explanatory notes are to provide a framework for the development of comparable data on the more important matters of demographic interest and thus to lay a sound factual groundwork for the work of the Commission. The Commission feels that the development of comparable data on these topics is essential for the study of world population problems.

". . . many Governments may wish to include subjects not mentioned in the list. Others may well find that it is not practicable to collect data on all the topics discussed. In this connexion the Commission emphasizes that the first consideration in taking a census is completeness and reliability of the results, and that it is in this context that coverage (in terms of the number of subjects included) and comparability should be considered."

With reference to each topic listed, the Commission adopted certain recommendations as to the types of data to be obtained and the definitions to be used. These recommendations are stated in the succeeding chapters of the present report, in connexion with the discussion of the types of data obtained in recent censuses and the methods used for obtaining data on each subject. In presenting its recommendations regarding types of data and definitions, the Commission stated:[13]

". . . it is recognized that in many instances the types of data mentioned below under each heading of the recommended list of subjects will not provide all of the information on that subject which will be needed for national purposes. It is hoped that in such cases the special information required for national purposes will be obtained, so far as feasible, by more detailed inquiries that will nevertheless provide at the same time the types of data recommended for international uses.

"The Population Commission has not attempted . . . to establish specific questions or instructions for census enumeration. It is believed that the techniques used in each census for obtaining the recommended types of data should be adapted to the special circumstances and needs of the country. In this connexion the Commission urges the Secretary-General . . . to clarify the content of the subjects proposed in such detail as may be desirable in the interests of international comparability and as may be requested by Member Governments."

Again at its fourth session in April 1949, the Population Commission discussed the problems of 1950 censuses of population. On this occasion it reiterated the view that statistics on total popula-

[10] *Report of the Population Commission* (third session). United Nations document E/805. Lake Success, 26 May 1948. (mimeo.), pp. 9-10, 15-22.

[11] The Commission noted, "For certain countries it may be desirable in addition to obtain data on other concepts of nationality".

[12] *Ibid.*, pp. 15, 16.

[13] *Ibid.*, pp. 16, 22.

tion, sex, age, marital status and economic characteristics were especially important, and emphasized that "for countries with little or no previous experience of census taking, it might well be preferable to concentrate on that more limited list".[14] The Commission then proceeded to draw up an extensive series of suggestions regarding desirable tabulations of the data to be obtained on each of the twelve topics mentioned in the report of its third session.[15] These suggestions also are set forth, topic by topic, in the succeeding chapters of the present report. The purposes of the Commission in drawing up these suggestions were explained in the following statement:[16]

"The Commission wishes to emphasize the desirability of adequate and internationally comparable tabulations of data from population censuses to be taken in or about 1950. Each country will naturally wish to consider the question of tabulation from the point of view of practicability in relation to its own census experience and to its own requirements. It may well be that countries with little previous census experience will wish to limit these tabulations to simple counts in the case of some of the items listed in their censuses. Even in such cases, however, it is clearly desirable that the tabulations should be so planned as to maximise international comparability. In the case of countries contemplating a wider range of data and prepared to undertake more detailed tabulations, the Commission draws attention to Annex 3 of the present report. This Annex, which is based on the work of the Commission's Committee on Population Statistics, lists a number of desirable tabulations on each of the topics recommended by the Commission for inclusion in census schedules, and indicates in some detail the groupings which might usefully be applied in these tabulations. The Annex is not a series of recommendations but rather a list of useful tabulations designed to facilitate the international comparability of census results."

Acting upon a suggestion previously submitted by certain members of the Social Commission, the Population Commission also considered at its fourth session whether or not to add the topic of physical and mental handicaps to the list of recommended subjects for investigation in 1950 population censuses.[17] It was the opinion of the Commission that this subject should not be added; however, the Commission requested the Secretary-General to circulate among Member Governments a document on the problems of obtaining information on physical and mental handicaps in population censuses. This document constitutes chapter XVIII of the present report.

### 3. Activities of the Committee on the 1950 Census of the Americas

In the meantime the programme for a co-operative census of the American nations in 1950 was being developed under the auspices of the Inter-American Statistical Institute. A Committee on the 1950 Census of the Americas, created by the Institute and consisting of officials of national statistical agencies responsible for population census work in the various American countries, held its first session in Washington in September 1947. All of the work of this Committee was done in close collaboration with the Population and Statistical Commissions and with the United Nations Secretariat. At its first session the Committee adopted a preliminary minimum list of subjects to be covered by the 1950 censuses of the American nations,[18] which was closely similar to that proposed by the Population Commission at its second session. At the second session of the Committee, held in Rio de Janeiro in February 1949,[19] a revised list of topics was adopted in a form which agreed closely with the recommendation of the Population Commission at its third session. With reference to each topic the Committee adopted certain standards as to the types of data to be obtained and the definitions to be used. These standards also were in close agreement with the recommendations of the Population Commission. Certain preliminary recommendations with regard to the tabulations of data on each subject were also adopted at this session of the Committee with a view to further consideration at a future session. The recommendations of the second session of the Committee on the 1950 Census of the Americas with respect to the types of data, definitions and tabulations on each subject are presented in the succeeding chapters of this report, together with the recommendations of the Population Commission.

[14] *Report of the fourth session of the Population Commission.* United Nations document E/1313. Lake Success, 21 April 1949. (mimeo.), p. 6.
[15] *Ibid.*, Annex 2.
[16] *Ibid.*, pp. 6-7.
[17] *Ibid.*, pp. 9-10.

[18] *Resolutions of the first session of the Inter-American Statistical Institute* (IASI), Washington, D.C., 6-18 September 1947. Part I, resolutions 1-16 of the Committee on the 1950 Census of the Americas, resulting from its session of 2-8 and 16 September 1947. Presented to and approved by the first session of the Inter-American Statistical Institute at its closing meeting on 18 September 1947. *Serviço grafico do Instituto brasileiro de geografia e estatistica.* Rio de Janeiro, 1948.
[19] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas, Rio de Janeiro, D.F., February 14-25, 1949. Servico gráfico do Instituto brasileiro de geografia e estatistica. Rio de Janeiro, 1949.* pp. 21-23.

### 4. Recommendations of other international agencies

The recommendations of the Population and Statistical Commissions and of the Committee on the 1950 Census of the Americas supersede most of the actions of other international bodies with reference to the content and methods of population censuses. However, there remain a few relatively recent actions on the part of other agencies which are directly relevant to standards for 1950 censuses of population. These are the recommendations of the League of Nations Committee of Statistical Experts[20] developed during the period 1937-1939 with reference to statistics on economic activities of the population and on households; and those of the Sixth and Seventh International Conferences of Labour Statisticians, held in August 1947[21] and September 1949, with reference to statistics of the labour force, employment and unemployment. These recommendations also are set forth in the appropriate chapters of this report.

## C. Survey of methods used in recent censuses of different countries

This report contains, in addition to the recommendations of the international agencies, the results of a detailed survey of the methods and definitions used in the recent censuses of fifty-three countries for obtaining data on the various topics, and of the tabulated statistics on each topic presented in the census publications. The survey is not limited to the broad questions of methodology that have been dealt with by international bodies, but delves into the specific variations of definitions, procedures for collecting data and tabulations found in the censuses of different countries. Observations regarding the major uses of various types of data and the specific advantages and disadvantages of different methods are included. It is believed that this analysis will be useful to national statistical agencies in planning their population censuses so as to ensure the maximum degree of international comparability that is consistent with the differences in national circumstances and needs.

The survey covers all of the topics listed by the Population Commission as most important for inclusion in 1950 population censuses, with the exception of urban and rural population and statistics of households. It was not possible to complete studies on these two subjects in time for inclusion in this report; the chapters on urban and rural population (chapter XVI) and on households (chapter XVII) therefore contain little more than the relevant recommendations of international agencies. Two subjects not included in the Population Commission's list of topics are discussed here: the collation of results of population and agricultural censuses (chapter XV) and the collection in population censuses of data on physical and mental handicaps (chapter XVIII).

The aim in making this survey was to cover the most recent census of every independent country where a population census had been taken since 1925. Certain countries which were independent when the survey was made, though not at the time of the last census, are included. Censuses before 1925 were not considered because, in general, the methods used before that date tend to be outmoded. The omission of censuses of Non-Self-Governing Territories was necessary because of the shortage of time and personnel available for the work. On the whole the censuses that have been carried out in such territories have covered a narrower field of subjects than the censuses of independent countries; the tabulations have also been less detailed, and the results, in general, have been less reliable.

A few independent countries where population censuses are known to have been taken since 1925 were excluded from the survey because information concerning their censuses could not be obtained, or was obtained too late for inclusion. Among them are Albania (1930 census), Ceylon (1946 census), Iceland (1940 census), Iraq (1947 census), Korea (1944 census), and Lebanon (1942 census). Countries which no longer existed as independent nations at the time of the survey were excluded, though censuses had been taken during the period of their independence since 1925; an example is Estonia (1934 census). In some cases where it was not possible to locate copies of the actual census forms and instructions, inferences as to the nature of the questions and definitions used were made on the basis of the available tabulations. In the case of some other countries, where censuses had been carried out very recently, it was ncessary to refer to a previous census for an analysis of the tabulations, because the tabulations of the most recent census were not available when the survey was made.

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[20] League of Nations. *Statistics of the Gainfully Occupied Population: Definitions and Classifications Recommended by the Committee of Statistical Experts.* Studies and Reports on Statistical Methods, No. 1. Geneva 1938; *Housing Statistics.* Studies and Reports on Statistical Methods, No. 5. Geneva, 1939. p. 9.

[21] International Labour Office. *International Standards for Statistics of Employment, Unemployment and the Labour Force, Cost of Living and Industrial Injuries, Adopted by the Sixth International Conference of Labour Statisticians.* Montreal, 1947.

# II. TOTAL POPULATION

*(prepared by the Statistical Office of the United Nations)*

## A. Sources of incomparability in total population figures

The most important object of a census is to determine the total population of the country and of its geographical subdivisions. Different definitions of the total population are used in the censuses of different countries. In some censuses the population is enumerated on a *de facto* basis; that is, all persons are counted in the area where they are physically found on the date of the census. In other censuses a *de jure* count is made, the population of each area being defined as persons who usually reside in the area, regardless of their actual location at the census date. Various combinations and modifications of these two concepts are also used. So far as national population totals are concerned, these differences in definition do not ordinarily have a great effect on the results, but their effect may be much more important in the figures for minor geographical areas or for certain population classes such as the foreign-born. The definitions recommended by international bodies and those used in recent censuses are discussed in part B.

Under either a *de facto* or a *de jure* definition, the census may exclude certain population groups, such as nomadic tribes and aboriginal populations. Such exclusions may detract substantially from the comparability of the statistics for the country affected with those for other countries. Practices in recent censuses with regard to the inclusion or exclusion of these groups are also discussed in part B.

A still more important source of incomparability is failure to enumerate the population accurately in accordance with the definitions chosen. Most census enumerations are believed to fall at least slightly short of complete coverage, though in some instances the count may be exaggerated. The amount of the error in some cases is so large as to invalidate the results almost entirely, both for international comparisons and for local analyses. In a few censuses estimates of the amount of under-enumeration or over-enumeration have been made, but in most cases it is an unknown quantity. This aspect of the problem is discussed briefly in part C.

## B. Definitions of total population

### 1. Definitions recommended by international agencies

The Population Commission, at its third session (in May 1948), made the following recommendation regarding the definition of the total population to be used in census taken about 1950:[1]

"It is recommended that data for the total population in the country as a whole at the time of the census (with the exceptions of military and diplomatic personnel noted below) be obtained in addition to any data on a *de jure* or other basis which may be desired for national purposes . . . Foreign military and diplomatic personnel located in the country should be excluded from the total population as defined for this purpose. Military and diplomatic personnel of the given country located abroad at the time of the census should be enumerated."

This definition is based on a modified *de facto* concept. The exceptions for military and diplomatic personnel can be regarded as concessions to avoid particularly difficult and delicate problems of enumeration.

The Statistical Commission at its third session (in April and May 1948), made the following observation:[2]

". . . the Commission in particular mentions that the concepts of *de facto* and *de jure* population should be clarified. In this connexion it is pointed out that necessary further consultations should proceed expeditiously so that Governments may obtain the materials to be provided early enough to be of service to them in planning their next population censuses."

The Committee on the 1950 Census of the Americas, at its second session (in February

[1] *Report of the Population Commission* (third session, *op. cit.*), Annex A, p. 16.

[2] *Report of the Statistical Commission* (third session, *op. cit.*), p. 15.

1949), adopted a definition of the total population for use in the American censuses which agreed closely with that recommended by the Population Commission. The Committee recommended:[3]

"(*a*) That data be obtained on the total population present in each country at the time of the census (with the exception of military and diplomatic personnel, mentioned below), in addition to any other statistical data considered necessary for national purposes.

"(*b*) Military and diplomatic personnel of other countries, stationed in the country where the census is being taken, should be excluded from the total population as defined for census purposes. In those countries in which such groups are enumerated, they should be tabulated separately.

"(*c*) Military and diplomatic personnel of the country, located abroad at the time of the census, should be included in the total population.

"(*d*) Countries having important groups of inhabitants which cannot be enumerated individually (for example, groups which live outside the socio-economic structure of the country) should estimate their number and investigate certain of their characteristics through the best available means, presenting these data separately. Where it is considered impossible to make such an estimate, the census reports should indicate that the population total does not include these groups".

The Committee noted: "The definition of 'total population' recommended here is not, strictly speaking, either the *de facto* or the *de jure*. It is suggested that the terms *de facto* and *de jure* not be used in relation to the topic of total population."[4]

## 2. Relative merits of *de facto* and *de jure* definitions

The primary advantages of a *de facto* enumeration are simplicity and objectivity of definition. Enumerators or respondents can simply be instructed to report all persons who were present in each dwelling or other place of enumeration at the specified time. No elaborate instructions are required with reference to the inclusion or exclusion of persons who are away from home under different circumstances or for different reasons. There are no borderline cases of persons who may be enumerated or not, depending on the judgment of the enumerator or respondent. The *de facto* concept is especially advantageous from the standpoint of international comparability, for it is an unequivocal standard that can be applied universally without regard to differences in local conditions.

The simplicity of the concept is marred by the exceptions for military and diplomatic personnel which have been recommended by international agencies. These exceptions make it necessary to determine what is military and diplomatic personnel. It must be decided, for example, whether or not such personnel includes coast guards, members of military and naval reserves, officers on leave or furlough, honorary consuls, and employees of a military or diplomatic establishment, who may be nationals either of the country where the establishment is located or of that which it represents. Decisions must also be made regarding dependants of military and diplomatic officers who accompany them on their missions. Differences in the decisions taken in these matters in different censuses may somewhat impair the comparability of results, though the borderline groups are unlikely to be numerically very important. On the other hand, if a strict *de facto* definition were applied without these exceptions, serious difficulties might be involved in the attempt to enumerate armed forces and diplomatic representatives of a foreign country located in the census-taking country.

In a *de jure* enumeration, more complicated definitions and instructions are necessary to ensure complete and consistent reporting. Generally speaking, the purpose in this kind of enumeration is to allocate each individual to his usual place of residence, though there are many variations in the *de jure* concepts used for the censuses of different countries. The main difficulty is that many persons do not have a single fixed place of abode. Examples are: children away at school; individuals or families that have left home for long or indefinite periods to travel or work elsewhere; itinerant workers and others who have no fixed residence; families that maintain two residences, e.g., one in the city and another in the country, etc. Even though detailed instructions and other special measures are taken to ensure a uniform basis for their enumeration, such persons are likely to be omitted or counted more than once. Even those persons who have a definite place of residence, but who are absent at the time of the census may be omitted, counted more than once, or assigned to the wrong area, if the persons who report for them are not well informed. The methods used in the censuses of different countries to regulate the enumeration of such persons

[3] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . . (op. cit.)*, p. 21.

[4] *Ibid.*, footnote, p. 21.

under a *de jure* concept are diverse and could not well be standardized for the sake of international comparability.

In spite of its complexity, a *de jure* enumeration may give more accurate results under some conditions than a *de facto* one, if the enumeration has to be spread over a considerable time interval. The aim of a census is to give a "snapshot" picture of the population at a certain point of time, but in fact it is never quite instantaneous. The limitations of man-power available for census work, of money that can be spent on it, of transportation facilities, etc., make it impossible to carry out the enumeration everywhere simultaneously. In some cases a period of weeks or even months may be required. A constant time reference may be preserved so far as possible by making the questions refer to a fixed time, regardless of the time when each individual is enumerated. But as the interval between the census date and the time of enumeration lengthens it becomes more and more difficult to get accurate information, and the results are increasingly affected by changes occurring in the meantime. If the population does not move much during the census-taking period, the resulting errors in the population totals under either a *de facto* or a *de jure* definition may not be great. But among a mobile population the dangers of double counting or omission multiply as the period of enumeration is extended. In particular, a *de facto* count of a very mobile population is subject to serious error if the enumeration is spread over a long period. A *de jure* count under such conditions is also likely to be inaccurate, but the errors in this case may be smaller if most of the people who move during the interval retain a stable place of usual residence. Whatever definition of the population is chosen it is evidently desirable to fix the census date at a time when population movement is likely to be at a minimum.

A *de jure* enumeration is necessary in some countries to fulfil certain legal requirements: notably to provide statistical bases for the apportionment of electoral representatives, tax assessments, monetary grants, etc., among the areas of the country. In some countries the legal authority for the census explicitly requires a *de jure* enumeration. This requirement, of course, does not preclude obtaining *de facto* statistics in addition. Procedures for obtaining both *de facto* and *de jure* counts simultaneously have been applied successfully in the censuses of many countries, as explained below. These procedures have the advantage of providing statistics which are appropriate for a variety of uses.

Local requirements for population statistics in connexion with the planning and administration of certain social services, such as housing and education programmes which apply only to the resident population, are better fulfilled by *de jure* than by *de facto* figures. There are also other uses for which *de jure* figures seem preferable, including, perhaps, the preparation of base figures for the calculation of birth and death rates. But for some purposes it is not enough to know the resident population of an area like New York City, for example, where a large stream of visitors continually coming and going keeps the actual population normally at a higher level. *De facto* figures would be useful, for example, to municipal authorities analysing the requirements for police protection, medical services, hygiene and transportation, and to businessmen estimating the demand for products or services purchased by residents and visitors alike.

From the standpoint of international uses the choice between *de facto* and *de jure* measures is less important, except as it affects the accuracy of the enumeration. In international analyses, the chief need is for statistics on the total population of various countries, rather than of particular areas within countries. For a country as a whole, the difference between a *de facto* and a *de jure* total is likely to be small under ordinary circumstances. The difference between the number of residents temporarily outside the country and the number of non-residents temporarily within it ordinarily amounts to only a small percentage of the total population. Under some conditions, however, the difference may be substantial. It has been very important in some countries during the last decade, when large military forces were located outside their home countries, and in a few countries that attract many tourists it is important even in normal times. Under these conditions the use of *de facto* definitions in some countries and *de jure* definitions in others constitutes an important obstacle to international comparisons and to the derivation of complete and unduplicated figures for combinations of two or more countries.

As already pointed out, the *de facto* definition is much more suitable than the *de jure* for uniform application in different countries. The purposes for which *de jure* statistics are most appropriate appear to be primarily national and internal rather than international. Where the *de jure* concept is chosen, for national purposes, as the sole basis for allocating the population to various areas within the country, it may not be difficult to obtain separate figures on residents

of the country who are abroad and on non-residents present in the country at the time of the census (with the exception of military and diplomatic personnel.) In this way totals for the country as a whole can be derived in accordance with the recommendations of international agencies.

### 3. Definitions used in recent censuses

Official publications, including schedules and instructions to enumerators, relating to the fifty-three censuses covered by this study were consulted in an effort to determine the coverage of the enumeration and the method of allocating the population to areas within the country. The information obtained in this way was supplemented by referring to the explanations which were submitted by various Governments in response to a questionnaire sent out in 1948 by the Statistical Office of the United Nations, to obtain material for the first issue of the United Nations *Demographic Yearbook*.

As shown in table 1, the methods of enumeration used in thirty-one of the fifty-three censuses would permit the derivation of both *de facto* and *de jure* population figures. In many of these censuses persons were enumerated on a *de facto* basis, i.e., in the places where they were found at the time of the census, but the place of their usual residence was also recorded on the schedule. This procedure was followed in the censuses of Egypt (1937), Union of South Africa (1946), Guatemala (1940), Paraguay (1936), Syria (1947), France (1946), Greece (1940), Hungary (1941), England and Wales (1931), Northern Ireland (1937), Scotland (1931) and New Zealand (1945). For obtaining *de jure* statistics this method has the disadvantage of making no provision for the enumeration of residents temporarily outside the country.

A better method of obtaining both *de facto* and *de jure* figures, which provides for the inclusion in the *de jure* count of persons temporarily out of the country, is to enumerate at each dwelling both the persons who usually reside there but are temporarily away, and those who are present but have a usual place of residence elsewhere. These two categories, of course, must be separately identified on the census schedules. The accuracy of the results may be improved by recording for the former group their location at the time of the census, and for the latter their usual place of residence. A procedure of this type was applied, for example, in the censuses of Denmark (1940), Norway (1946) and Poland (1931). In such cases, the number of persons enumerated in each area as residents temporarily away in other parts of the country can be verified by comparison with the numbers of persons temporarily present in other areas who reported the given area as their usual place of residence. If place of residence has been obtained in sufficient detail, an even more exact check can be made by examining the individual census schedules for persons away from their usual place of residence, to make sure that they have been properly enumerated both at home and at their location on the census date.

In most of the remaining sixteen censuses where both *de facto* and *de jure* enumerations were made, the methods were similar to those used in the Danish, Norwegian and Polish censuses, but the information on usual place of residence or present location of persons temporarily away from home was either not recorded, or recorded in too little detail to permit such thorough checks of accuracy.

Of the twenty-two censuses where only one type of enumeration was made, *de jure* statistics were obtained in eleven and *de facto* statistics in eleven.

(*a*) De facto *definitions*. In *de facto* enumerations exceptions were sometimes made either to the definition of the total population as all persons present in the country at the time of the census or to the rule of allocating the population to particular areas on the basis of location at the time.

One such exception was the exclusion of foreign armed forces located within the country, which agrees with the recommendations of the Population Commission and the Committee on the 1950 Census of the Americas. This was done in the *de facto* enumerations in Belgium (1947), Denmark (1940) and New Zealand (1945). However, the complementary procedure of including national armed forces located outside the country, which has also been recommended by the international agencies, was not followed in the *de facto* enumerations for Denmark and New Zealand.

In the census of Italy (1936), *de facto* figures included Italian armed forces located outside the country, together with civilians accompanying them. National armed forces outside the country were also included in the *de facto* enumeration in the Union of South Africa (1946). No exceptions to the *de facto* rule for either foreign or national armed forces were mentioned in the available sources of information regarding any of the other censuses examined. It should be noted, however, that very few of the countries concerned had any significant numbers of foreign armed forces within their territory when the censuses

## Table 1. *De facto* and *de jure* enumerations of total population in recent censuses

("x" indicates that the given type of enumeration was made, "–" that it was not made)

| Country | Census year | *Both* de facto *and* de jure | De facto *only* | De jure *only* |
|---|---|---|---|---|
| AFRICA: | | | | |
| Egypt | 1947 | x[1] | – | – |
| Union of South Africa | 1946 | x[1] | – | – |
| AMERICA: | | | | |
| Argentina | 1947 | x | – | – |
| Brazil | 1940 | x | – | – |
| Canada | 1941 | – | – | x |
| Chile | 1940 | – | x | – |
| Colombia | 1938 | – | x[2] | – |
| Costa Rica | 1927 | – | – | x[3] |
| Cuba | 1943 | – | – | x |
| Dominican Republic | 1935 | – | – | x[4] |
| El Salvador | 1930 | x[5] | – | – |
| Guatemala | 1940 | x[1] | – | – |
| Honduras | 1945 | – | x[6] | – |
| Mexico | 1940 | – | – | x |
| Nicaragua | 1940 | – | – | x |
| Panama | 1940 | – | x | – |
| Paraguay | 1936 | x[1] | – | – |
| Peru | 1940 | – | x[7] | – |
| United States of America | 1940 | – | – | x |
| Venezuela | 1941 | – | x | – |
| ASIA: | | | | |
| India | 1941 | – | x | – |
| Japan | 1940 | – | – | x |
| Philippines | 1947 | – | – | x |
| Syria | 1947 | x[1] | – | – |
| Turkey | 1940 | – | x | – |
| EUROPE: | | | | |
| Austria | 1934 | x | – | – |
| Belgium | 1947 | x | – | – |
| Bulgaria | 1946 | x | – | – |
| Czechoslovakia | 1947 | – | x | – |
| Denmark | 1940 | x | – | – |
| Finland | 1940 | – | – | x |
| France | 1946 | x[1] | – | – |
| Germany | 1939 | x | – | – |
| Greece | 1940 | x[1] | – | – |
| Hungary | 1941 | x[1] | – | – |
| Ireland | 1946 | – | x | – |
| Italy | 1936 | x | – | – |
| Luxembourg | 1947 | x | – | – |
| Netherlands | 1947 | x[8] | – | – |
| Norway | 1946 | x | – | – |
| Poland | 1931 | x | – | – |
| Portugal | 1940 | x | – | – |
| Romania | 1930 | x | – | – |
| Spain | 1940 | x | – | – |
| Sweden | 1945 | – | – | x |
| Switzerland | 1941 | x | – | – |
| United Kingdom | | | | |
| England and Wales | 1931 | x[1,9] | – | – |
| Northern Ireland | 1937 | x[1] | – | – |
| Scotland | 1931 | x[1] | – | – |
| USSR | 1939 | x[10] | – | – |
| Yugoslavia | 1931 | x | – | – |
| OCEANIA: | | | | |
| Australia | 1947 | – | x | – |
| New Zealand | 1945 | x[1] | – | – |

[1] The usual place of residence was to be indicated for all persons not enumerated at their usual residences. No provision was made for persons temporarily out of the country.

[2] When no one was found at home to answer the census questions after several calls at a household, information about the persons living there was secured from neighbours. In this way it seems possible that some persons who were actually absent from their homes may have been counted twice, since they may also have been enumerated in some other area.

[3] Instructions called for the enumeration of all persons habitually living at the place of enumeration on the day of the census. No further definition was given.

[4] Instructions to enumerators imply that the *de jure* method of enumeration was used, except for persons away from their usual residences who believed no information

*Footnotes continued on page 11*

were taken, or armed forces of their own in other countries.

Exceptions to a strict *de facto* definition were also made in the case of diplomatic personnel in some censuses, but not in exactly the manner more recently recommended by the international agencies. In the census of Belgium (1947), the *de facto* enumeration excluded members of foreign diplomatic corps located in the country, and also their families and alien servants living with them, but apparently did not include Belgian diplomatic personnel located elsewhere. On this point the procedure of the census of Australia (1947) was similar to that of the Belgian census. No indications of special rules regarding the inclusion or exclusion of diplomatic personnel were found in the other censuses.

In maritime countries, seamen who are aboard ships at the time of the census constitute a special problem of some importance in a *de facto* count. The procedure in some censuses (for example, that of England and Wales in 1931) was to enumerate only those whose ships were in port, allocating them to the population of the neighbouring land areas. In some other censuses (for example, those of Portugal in 1940 and Australia in 1947) men on ships in national ports or on ships sailing between national ports, were also included on a similar basis. In some censuses it seems possible that all seamen on vessels at the time of the census were excluded from the *de facto* count.

(*b*) De jure *definitions*. Census statistics of the *de jure* population usually represent, in a general way, persons whose usual place of residence is in the census-taking country, distributed among the component areas in accordance with the location of their place of residence. In most cases these statistics might perhaps more accurately be described as relating to the "resident" population. In fact, in the publications of some censuses terms such as "resident" and "domiciled" population have been used instead of *de jure* population. In the legal systems of most countries, the place where an individual maintains his usual residence is the place which determines his legal and political rights and duties. The resident population of an area is therefore ordinarily at least a close approximation of its legal population.[5]

Different criteria have been used in different countries for determining the place of usual residence. In some countries where population registers are maintained, the residents of an area have been defined for census purposes as persons inscribed in the registers for that area. This has been done, for example, in the censuses of Finland (1940), the Netherlands (1947) and Sweden (1945). This definition has the advantage of being simple and objective, but its utility obviously depends on the laws and practices governing the registration of newcomers to each locality.

In countries not having population registers the criteria used for identifying the *de jure* population of each area have generally been vague, and in some cases both vague and complicated. In some censuses no more specific instructions were given to enumerators or respondents than to list the persons whose "usual residence" is in the given dwelling or other place of enumeration, those who

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*Footnotes to Table 1, continued*

was reported for them at their usual residences. Such persons were enumerated where found. No provision was made on the schedule for indicating their usual residence.

[5] The instructions stated that the census was to be taken on a *de facto* basis, but also stated that it was to include all persons present and temporarily absent. It was further stated that it would be possible to distinguish persons coming from other countries who were passing through El Salvador on the day of the census. This was done by asking the usual residence of each person. Furthermore, this question could be used to check on possible double enumeration of persons temporarily away from their usual residences. Since no method was given for indicating on the schedule which of the enumerated persons were temporarily out of the country, the *de facto* enumeration, even of the population of the whole country would not be entirely accurate. A *de jure* enumeration, however, was made possible by the use of the question on usual residence.

[6] The enumeration was made on a *de facto* basis but each person was asked whether his usual place of residence was in an urban or rural place.

[7] The enumeration in rural areas was not on a strict *de facto* basis because of practical difficulties in applying the definition.

[8] Although the census was taken on a *de jure* basis, there was a special question on the whereabouts of persons not present in the municipality at the time of the census. If such persons were elsewhere in the country, the exact address of the temporary residence was to be given.

[9] In obtaining the "resident" population, persons with no fixed address at all and persons with home addresses abroad were treated as part of the resident population of the area of enumeration.

[10] All persons were enumerated where they were present on the census night. Temporary dwellers were to indicate their permanent dwelling. In addition, persons temporarily absent from their places of permanent residence were enumerated at these places, with an indication that they were temporarily absent.

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[5] In some Far Eastern countries, the legal population has been determined by the so-called "native place", which may have no relation to the usual place of residence. For example, in Japan the legal residence (*honseki*) of a household has been the place where its family records (*koseki*) were kept. If an individual changed his place of usual residence, he might change his place of *honseki*, but he need not do so. This conception of legal residence has had a very important influence on the statistics obtained from population registers in Far Eastern countries. It is not important, however, in relation to modern census statistics for these countries, which do not refer to legal residence.

"usually" sleep there, etc., including "household members temporarily absent" and excluding "visitors". In other censuses these vague concepts have been supplemented by certain rules for the reporting of groups recognized as special problems, such as persons away on military service, at school or in institutions.[6] The dangers of omission and double counting which result from the use of such poorly defined and cumbersome criteria of enumeration have already been mentioned.

In those censuses where special rules have been established governing the allocation of certain types of persons to a place of usual residence, the rules have been diverse. In the census of Canada (1941), for example, it was provided that students away at school and naval personnel should be enumerated as residents of their home areas, but institutional inmates in general should be allocated to the areas where the institutions were located. In the census of the United States (1940), persons attached to military posts were considered as residents of the areas where the posts were located; crews of United States merchant vessels in port were allocated to the areas where the ships were located; and persons with no usual place of residence were enumerated wherever they were found. In the census of Portugal (1940), persons at military posts were considered as residents of the areas where the posts were located; persons confined to institutions for less than five years were enumerated as residents of their home areas; and single persons under twenty-one years of age who were away from home were allocated to the home area.

The special problems of inclusion or exclusion of military and diplomatic personnel, which were discussed above in connexion with the *de facto* concept, are pertinent also to *de jure* enumerations. Military and diplomatic personnel stationed outside the home country may or may not be regarded as retaining their usual place of residence in the home country. The reports of most of the censuses using a *de jure* concept have not stated what rules were followed with reference to these groups. However, in the census of France (1946), French armed forces stationed outside the country and the personnel of occupation authorities located in Germany and Austria were excluded from the *de jure* population figures. In the census of the United States (1940) foreign diplomatic personnel located in the country were excluded from the enumeration, and United States diplomatic personnel located elsewhere were included. Since persons on military posts were considered as residents of the areas where the posts were located, those who were stationed outside the United States were excluded from the population figures for the country.

Residents who are temporarily outside the country at the time of the census constitute a difficult problem in a *de jure* enumeration. In accordance with the general concept of the *de jure* population it is evidently proper to include them, but in practice it may be virtually impossible to obtain a complete enumeration of them. If the respondent for each household is required to list all persons whose usual residence is in the household, including those who are temporarily absent, some of the residents abroad will be enumerated but others will be omitted, either through carelessness or because nobody competent to report for them remains at home. Special arrangements can be made through official channels for the enumeration of military and diplomatic personnel and also perhaps of other government employees abroad, but this is not likely to be practicable in the case of other residents abroad.

(*c*) *Exclusion of nomads, aborigines and similar groups.* In some censuses the definition of the total population, under both *de facto* and *de jure* concepts, has excluded certain population groups which were difficult to enumerate because of their inaccessible location, their peculiar habits of life, or their hostility to the governing authorities of the country. For example, the census of Syria (1947) did not cover nomadic Bedouin tribes. Nomads were excluded also from the census of Egypt (1947). The census of Australia (1947) excluded all full-blooded aborigines. Certain tribal Indians were excluded from the census of Venezuela (1941). Except in the case of Australia, these omissions were of considerable importance in proportion to the total population of the countries concerned, and substantially impaired the validity of the census figures as measures of the total numbers of inhabitants. It is possible that some groups of these types were omitted also from the censuses of certain other countries, for which full information as to coverage is not available.

[6] More definite criteria, however, have been used in a few cases. For example, in the 1940 census of Iceland, it was provided that "Persons residing in a place more than a half year without intermission shall be registered there, although they have a lawful domicile in another place, unless the absence is caused by staying in a hospital or work in the interest of the home."

## C. Under-enumeration and over-enumeration

However important the differences in definitions and coverage may be, they are much less serious obstacles to international comparisons and to the derivation of regional and world population totals than the errors of enumeration which occur in many censuses. The accuracy of enumeration depends on the skill, experience and integrity of the organization planning and executing the census, on the adequacy of the funds and other resources available for the work, and on the special difficulties of enumeration in each area. Reliable census figures cannot be expected in countries where the tradition of census-taking is not firmly established; where personnel technically qualified for the planning and field operations is scarce; where the population is illiterate, suspicious of official inquiries and unaccustomed to statistical reporting; where facilities for transportation and communication are poor; and where the financial resources of the census-taking authorities are meagre. These conditions prevail at present in a large part of the world. Even in the statistically more advanced countries it is recognized that the accuracy of census figures is not perfect, and that in some instances under-enumeration or over-enumeration may be sufficient to have an important bearing on the interpretation of the results.

The completeness of enumeration can be estimated by a well-planned verification carried out immediately after the original enumeration in a scientifically selected sample of the areas. Where this has not been done, the extent of under-enumeration or over-enumeration can sometimes be estimated afterwards by comparing the census figures with data from other sources, such as nominally complete population registers. Tests of completeness can also be made by examining the consistency of the returns for certain population groups, such as males and females in various age classes, or by comparing the results of successive censuses for individual localities or population categories. However, a scientific appraisal of the accuracy of census results has been avoided by the official statistical agencies of some countries. The result is an unfounded impression in the minds of uncritical users of the figures that they are perfectly reliable. In some countries there is a progressive tendency to discuss frankly the defects in census statistics, but until this practice becomes general it will be difficult to determine with any precision the degree of reliability of the figures for most areas of the world.

Where there is under-enumeration, its amount is likely to be greater in some localities and population classes than others. The groups most likely to be omitted are those whose complete enumeration requires the greatest care and patience on the part of both the officials planning the inquiry and the enumerators. Examples are people who live in isolated localities that are difficult to reach; those whose dwellings are in unusual or unobtrusive places such as outbuildings, houses off the main roads or paths, boats, tents, cellars, and primarily non-residential buildings; persons who have moved during the census-taking period or who have no fixed dwelling place; residents of hotels and lodging-houses; persons whose working hours are such as to make them hard to find home; illiterates and persons who do not speak the principal language of the country. Certain sex-age groups are particularly difficult to enumerate completely, notably infants and young men, and in some countries it is difficult to obtain complete reports on unmarried women. If the amount of under-enumeration is considerable the statistics will therefore give a false picture not only of the size of the population, but also of its composition and geographical distribution. If an estimate is obtained of the deficiency in enumeration as a percentage of the total enumerated, it will not be valid to apply that percentage as a constant correction to the enumerated figures for individual areas or population classes.

# III. SEX AND AGE

*(prepared by the Statistical Office of the United Nations)*

## A. Uses of data on sex and age

The classification by sex is one of the most important in almost all types of population statistics, and at the same time one of the easiest to obtain in a census. Its importance is attested by the fact that a classification by sex has been obtained in probably every census where any attempt was made to go beyond a simple count of the number of inhabitants.

The determination of the age distribution is also one of the primary objectives of almost all population censuses. Information on the age structure of the population is essential for many purposes, including the analysis of the factors of population change and the preparation of current population estimates and forecasts; the calculation of morbidity and mortality rates as a guide for public health activities and as a measure of their success; actuarial analyses, for commercial and other purposes, of the probability of survival and related measures; analysis of the factors of labour supply and of manpower for military purposes; and the study of problems of dependency represented by persons in the very young and very old age groups. In addition, data on age are of fundamental importance as a basis for the analysis of other data obtained in the population census, such as the statistics of marital status, educational characteristics, fertility, economic activities and ethnic groups — all of which become much more meaningful for demographic, economic and sociological analyses when they are presented for various age groups. The applications of data on age are, in fact, so numerous and so varied that it is of the utmost importance in a population census to obtain detailed information on this subject with the greatest possible accuracy.

## B. Difficulties of enumerating ages

Unlike the sex classification, an accurate enumeration of the population classified by age involves many difficulties. In all censuses there are some errors in the reporting of ages, and in some cases these errors seriously impair the value of the data for important uses. For example, there is a tendency in many censuses to find an excessive number of men reporting their age as twenty-one years, and for women in certain age ranges to understate their ages. In general, there is a tendency to report ages in even numbers, particularly in numbers ending in zero, and in those ending in five.

The reasons for such mis-statements are too uncertain and too complex to permit unassailable generalization. Some are due to ignorance of correct age; some arise from carelessness and preference for certain digits as zeros, fives, and even numbers, and possibly unconscious aversion to certain odd numbers such as seven and thirteen; and some are wilful misrepresentations arising from motives of an economic, social, political or purely individual character. From figures alone it cannot be decided what part each of these factors plays in age mis-statement at a census. Graduation of the age data is very useful in eliminating the effects of such mis-statements; such graduated data are published in the reports of some censuses. In such cases it is necessary that the methods used for graduation be stated in the census reports so that for detailed study the significance of the figures may be evaluated.

Among populations which have essentially non-numerical cultures, such as are found in many areas of Africa, Asia and Oceania, the very concept of age expressed as a number is foreign to the majority of the people. Where censuses have been taken in such areas, it has commonly been considered feasible only to distinguish certain broad groups which have a recognized social status and which bear a rough relation to age groups, such as infants not yet weaned and persons past the age of puberty. However, in all of the censuses examined for the purpose of this study, data were obtained on chronological age in detail.

## C. The definition of age

The standard practice in the population censuses of almost all countries has been to measure age in terms of completed years (or months or

days) as of the date of the census. Thus, in terms of years, age is generally reckoned as of the last birthday before the census date. This is the definition of age which the Population Commission proposed when it included age in its list of recommended topics to be investigated in 1950 population censuses.[1] It was also the one adopted by the Committee on the 1950 Census of the Americas.[2] In only two of the censuses investigated for this study was a different definition used. In the 1940 census of Guatemala, age was to be reported as of the nearest birthday, and in the 1930 census of Romania as of the next birthday. Among the censuses in which the usual definition of age was used, there was some variety in the methods employed to obtain the age classification.

## D. Methods of determining ages

Two principal methods have been used in recent censuses to obtain data on age.

The first method is to ask for the date of birth. This has the advantage of permitting the ready derivation of a classification by age in months and even days, as well as years. It is considered by many statisticians to be conducive to precise answers, because the question is so specific that it does not encourage answers in approximate terms. Moreover, the recording of date of birth on the census schedule has distinct advantages from a non-statistical point of view where the schedules are used as legal or administrative records, as they are in many countries. On the other hand, answers to the question on date of birth will in many cases be incomplete or incorrect, especially where a large proportion of the population is uneducated. Moreover, the method has the disadvantage that it requires the computation of ages either by the enumerators, by the office staff, or by relatively complex procedures of mechanical tabulation.

The second method, to ask directly for the age at the last birthday, has the advantage of being simpler. The question is often easier to answer, for in many cases the respondent may not have exact information on the date of birth but may nevertheless be able to report the age with fair accuracy. This may be the case if the respondent is illiterate, or if he is giving information for another member of the household, particularly for a lodger or for another person not a member of his immediate family. However, the question on age at last birthday may encourage approximate answers on the part of persons who would give exact information if date of birth were requested. The choice between the two methods may therefore depend on the conditions existing in each country.

Table 2 shows that data on age were obtained in the most recent censuses of all fifty-three countries examined for this study.

Of the fifty-three censuses included in table 2, in twenty-eight only the age at last birthday was asked,[3] and in seventeen only the date of birth. In five of the censuses, both types of questions were used. Schedules were not available for the remaining three censuses — Germany, Finland, and Yugoslavia, so that the precise questions could not be ascertained. It is evident from the tabulations, however, that date of birth was asked in the German census, and, in the case of Finland, date of birth was available from the population register. The age-at-last-birthday method can be called the American method; in fifteen of the eighteen American censuses listed in the table only this method was used. On the other hand, the date-of-birth method is typically European; it was used exclusively in fifteen of the twenty-six European censuses. The five censuses where both questions were asked may represent a new trend in methodology. These censuses are widely distributed geographically — in the Union of South Africa, Bulgaria, Brazil, Nicaragua and Poland. All of these except the census of Poland were taken in 1940 or later. In the latter three censuses, the two questions were used as alternatives. A report on date of birth was preferred in the censuses of Brazil (1940) and Poland (1931), but a statement or estimate of age at last birthday was called for if the date of birth was not known. In the census of Nicaragua (1940), year of birth was asked only of persons whom the enumerator suspected of reporting incorrect age. In the Union of South Africa (1946) for non-"Native" races, and in Bulgaria (1946) age and date of birth were *both* to be reported. These combinations of the two methods unite the advantages which each may possess under certain circumstances. A combined method may be especially advantageous in countries where a substantial part of the population is well educated but a large part is highly illiterate.

[1] *Report of the Population Commission,* (third session) *op. cit.*, p. 16.

[2] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . .* (*op. cit.*), p. 21.

[3] The term "age at last birthday" is used for convenience, although in two cases the actual questions referred to age at nearest or next birthday, as noted in the preceding section.

## Table 2. Types of questions on age asked in recent censuses

("x" indicates that the given type of question was asked; "–" that it was not asked; ".." that information was not available)

| Country | Census year | Age at last birthday: Completed years | Age at last birthday: Completed months for children under 1 year old | Age at last birthday: Days for children under 1 month old | Date of birth: Year | Date of birth: Month | Date of birth: Day |
|---|---|---|---|---|---|---|---|
| AFRICA: | | | | | | | |
| Egypt | 1947 | x | – | – | – | – | – |
| Union of South Africa | 1946 | x[1] | x[2] | – | x[3] | x[3] | x[3] |
| AMERICA: | | | | | | | |
| Argentina | 1947 | – | – | – | x | x | x |
| Brazil | 1940 | –[3] | – | – | x[3] | x | x |
| Canada | 1941 | x | x | – | – | – | – |
| Chile | 1940 | x | – | – | – | – | – |
| Colombia | 1938 | x | – | – | – | – | – |
| Costa Rica | 1927 | x | – | – | – | – | – |
| Cuba | 1943 | x | x | – | – | – | – |
| Dominican Republic | 1935 | x | – | – | – | – | – |
| El Salvador | 1930 | x | x | – | – | – | – |
| Guatemala | 1940 | x[4] | x | x | – | – | – |
| Honduras | 1945 | x | x | x | – | – | – |
| Mexico | 1940 | x | x | x | – | – | – |
| Nicaragua | 1940 | x | x | x | –[5] | – | – |
| Panama | 1940 | x | – | – | – | – | – |
| Paraguay | 1936 | x | x | x | – | – | – |
| Peru | 1940 | x | x | x | – | – | – |
| United States of America | 1940 | x | x | – | – | – | – |
| Venezuela | 1941 | x | x[6] | x | – | – | – |
| ASIA: | | | | | | | |
| India | 1941 | x | x[7] | – | – | – | – |
| Japan | 1940 | – | – | – | x | x | x |
| Philippines | 1948 | x | x | – | – | – | – |
| Syria | 1947 | – | – | – | x | x | x |
| Turkey | 1940 | x | x | – | – | – | – |
| EUROPE: | | | | | | | |
| Austria | 1934 | – | – | – | x | x | x |
| Belgium | 1947 | – | – | – | x | x | x |
| Bulgaria | 1946 | x | x[8] | x | x | x | x |
| Czechoslovakia | 1947 | – | – | – | x | x | x |
| Denmark | 1940 | – | – | – | x | x | x |
| Finland | 1940 | .. | .. | .. | x[9] | x[9] | x[9] |
| France | 1946 | – | – | – | x | x | x |
| Germany | 1939 | .. | .. | .. | x | .. | .. |
| Greece | 1940 | – | – | – | x | x | x |
| Hungary | 1941 | – | – | – | x | x | x |
| Ireland | 1946 | – | – | – | x | x | – |
| Italy | 1936 | – | – | – | x | x | x |
| Luxembourg | 1947 | – | – | – | x | x | x |
| Netherlands | 1947 | – | – | – | x[10] | – | – |
| Norway | 1946 | – | – | – | x | x | x |
| Poland | 1931 | –[3] | – | – | x[3] | x | x |
| Portugal | 1940 | x | – | – | – | – | – |
| Romania | 1930 | x[11] | – | x | – | – | – |
| Spain | 1940 | x | x | x | – | – | – |
| Sweden | 1945 | – | – | – | x | x | x |
| Switzerland | 1941 | – | – | – | x | x | x |
| United Kingdom | | | | | | | |
| England and Wales | 1931 | x | x | – | – | – | – |
| Northern Ireland | 1937 | x | x | – | – | – | – |
| Scotland | 1931 | x | x | – | – | – | – |
| USSR | 1939 | x | x | – | – | – | – |
| Yugoslavia | 1931 | ..[12] | .. | .. | .. | .. | .. |

Table 2. Types of questions on age asked in recent censuses (cont.)

("x" indicates that the given type of question was asked; "–" that it was not asked; ".." that information was not available)

| Country | Census year | Age at last birthday: Completed years | Age at last birthday: Completed months for children under 1 year old | Age at last birthday: Days for children under 1 month old | Date of birth: Year | Date of birth: Month | Date of birth: Day |
|---|---|---|---|---|---|---|---|
| OCEANIA: | | | | | | | |
| Australia ..... | 1947 | x | – | – | – | – | – |
| New Zealand ..... | 1945 | x[12] | x[12] | – | – | – | – |

[1] For "natives" (Bantu) the "exact or approximate age" was to be given.

[2] These questions were not asked of the "Native" (Bantu) population.

[3] Date of birth was to be given if known; if not, the age claimed by the respondent was to be reported.

[4] Age was to be reported as of the nearest birthday; that is, if more than 6 months had passed since the last birthday, age at the next birthday was to be given.

[5] Year of birth was asked of persons whom the enumerator suspected of reporting incorrect age.

[6] Age in months was to be reported for children up to the age of 5 years.

[7] Age was to be reported in both years and months, if known, for persons of all ages. If exact age was not known, the approximate age in years only was to be given.

[8] For infants under 1 year, months and days were to be given.

[9] Information on full date of birth was available from the population registers on which the census was in large part based.

[10] Year of birth only was required. Since the census date was 31 December, the exact age in years could be derived for all persons.

[11] The question referred to age at next birthday.

[12] Data on age were obtained, but the type of question asked is not known.

[13] For Maoris whose age was not known exactly, it was to be given "as correctly as possible."

Table 2 also shows differences in the details of procedures for obtaining data on age by each general method. In the majority of censuses where questions on age at last birthday were asked, the age was to be reported in terms of completed years for persons over one year of age, and in months for children under that age. In some cases a report on age in days for children under one month was called for. It is believed that these devices are conducive to the complete and uniform enumeration of young children. For example, if only a report on age in years is required, the age "1" may commonly be reported erroneously for infants not having attained their first birthday. In almost all cases where date of birth was called for, the report was to include the month and day as well as the year of birth.

## E. Age groups used in tabulations of results

The Population Commission, at its fourth session, made the following proposals regarding the classification of age in census tabulations of the total population by sex and age:[4]

"It is desirable that data on age at last birthday be tabulated for each sex in at least the following age groups: under 1 year; single years from 1 to 4; and 5-year groups from age 5 to the end of life.

"Where a more detailed tabulation is feasible, each single year of age may be tabulated separately, by sex. In addition to providing information on the number of persons in various special age groups which are of interest in connexion with studies of school attendance, marriage, literacy, economic and social characteristics, etc., this tabulation will give a useful indication of the degree of reliability of the data on ages.

"Persons whose ages are not stated should be tabulated as a separate group, except where their ages have been estimated either by the enumerators or respondents in accordance with specific instructions for determining the approximate ages in such cases, or by the staff in the central census office using careful methods of estimating ages from other information on the census schedules. Where persons with age not stated have been allocated to specific age groups by these or other methods, the methods should be clearly stated in the census reports."

The age groups adopted as a minimum by the Committee on the 1950 Census of the Americas were nearly the same as those which the Population Commission listed as desirable: under one year, 1-4 years, five-year groups from 5 to 84 years, 85 years and over.[5]

Table 3 sets forth the age groups shown in the tabulations of the total population by sex and age presented in the reports of recent population censuses. For four of the fifty-three censuses, no information was available on the age groups used,

[4] *Report of the fourth session of the Population Commission,* (*op. cit.*), pp. 24-25.

[5] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . .* (*op. cit.*), p. 29.

## Table 3. Age classifications used in tabulations of age by sex in recent censuses

("–" indicates that the given classification was not shown; ".." that information was not available; "*" that the census year is different from that shown in table 2.)

| Country | Census year | Age range covered by classifications: By single years | By 5-year groups only; such as 0-4, 5-9, 10-14 | By other groupings used | Treatment of unstated ages |
|---|---|---|---|---|---|
| AFRICA: | | | | | |
| Egypt | 1937* | 0 to 4 | 5 to 59 | 10-year groups 60 to 99, 100 and over | Given |
| Union of South Africa | 1936* | 0 to 106[1] | – | 107 and over | Given |
| AMERICA: | | | | | |
| Argentina | 1947 | .. | .. | .. | .. |
| Brazil | 1940 | 0 to 19 | – | 10-year groups 20 to 99, 100 and over | Given |
| Canada | 1941 | 0 to 94 | – | 95 and over | Not given but method of classification explained |
| Chile | 1940 | 0 to 100 | – | 101 and over | Not given |
| Colombia | 1938 | 0 to 98 | – | 99 and over | Not given |
| Costa Rica | 1927 | 0 to 4 | 5 to 99 | 100 and over | Given |
| Cuba | 1943 | Under 1, 10 to 13 | 0 to 9, 20 to 99 | 14-19, 100 and over | Not given |
| Dominican Republic | 1935 | Under 1 | 0 to 84 | 85 and over | Not given |
| El Salvador | 1930 | – | – | 0-1, 2-4, 5-7, 8-14, 15-17, 18-22, 23-29, 10-year groups 30 to 99, 100 and over | Not given |
| Guatemala | 1940 | 0 to 100 | – | 101 and over | Given |
| Honduras | 1945 | 0 to 4 | 5 to 99 | 100 and over. For children under 1 year, 0-9, 10-19, 20-29 days; 1-5, 6-11 months | Not given |
| Mexico | 1940 | 0 to 4 | 5 to 99 | 100 and over. For children under 1 year: under 1 month; 1-11 months | Given |
| Nicaragua | 1940 | Under 1 | 0 to 84 | 1-4, 85 and over | Given |
| Panama | 1940 | – | 0 to 39 | 10-year groups 40 to 89, 90 and over | Not given |
| Paraguay | 1936 | .. | .. | .. | .. |
| Peru | 1940 | 0 to 99 | – | 100 and over | Given |
| United States of America | 1940 | 0 to 99 | – | 100 and over | Estimated |
| Venezuela | 1941 | 0 to 99 | – | 100 and over. For children under 1 year: under 1 month, 1-5, 6-11 months | Given |
| ASIA: | | | | | |
| India | 1931* | 0 to 4 | 5 to 69 | 70 and over | Estimated |
| Japan | 1940 | 0 to 120 | – | – | Not given |
| Philippines | 1939* | 0 to 98 | – | 99 and over | Given |
| Syria | 1947 | .. | .. | .. | .. |
| Turkey | 1935* | 0 to 98 | – | 99 and over; also centenarians | Given |
| EUROPE: | | | | | |
| Austria | 1934 | 0 to 104 | – | – | Given |
| Belgium | 1930* | 0 to 99 | – | 100 and over | Given |
| Bulgaria | 1934* | 0 to 89 | – | 90 and over | Given |
| Czechoslovakia | 1930* | 0 to 109 | – | 110 and over | Given |
| Denmark | 1940 | 0 to 99 | – | 100 and over | Given |
| Finland | 1940 | 0 to 105 | – | – | Given |
| France | 1946 | .. | .. | .. | .. |
| Germany | 1939 | 0 to 100 | – | – | Not given |
| Greece | 1940 | .. | 0 to 84 | 85 and over | Not given |
| Hungary | 1941 | 0 to 99 | – | 100 and over | Given |
| Ireland | 1936* | 0 to 99 | – | 100 and over | Estimated |
| Italy | 1936 | 0 to 99 | – | 100 and over | Given |
| Luxembourg | 1935* | 0 to 98 | – | – | Not given |
| Netherlands | 1930* | 0 to 99 | – | 100 and over. For children under 1 year: 1 month, 2, 3, 4, 5, 6-7, 8-9, 10-11 months | Given |
| Norway | 1930* | 0 to 104 | – | – | Given |
| Poland | 1931 | 0 to 99 | – | – | Given |
| Portugal | 1940 | 0 to 119 | – | – | Given |
| Romania | 1930 | 0 to 99 | – | 100 and over | Given |
| Spain | 1940 | 0 to 99 | – | 100 and over | Not given |
| Sweden | 1945 | 0 to 94 | – | 95 and over | Not given |
| Switzerland | 1941 | 0 to 99 | – | 100 and over | Given |

**Table 3. Age classifications used in tabulations of age by sex in recent censuses (cont.)**

("–" indicates that the given classification was not shown; ".." that information was not available; "*" that the census year is different from that shown in table 2.)

| Country | Census year | Age range covered by classifications: By single years | By 5-year groups only; such as 0-4, 5-9, 10-14 | By other groupings used | Treatment of unstated ages |
|---|---|---|---|---|---|
| United Kingdom | | | | | |
| England and Wales... | 1931 | 0 to 99 | – | 100 and over | Not given |
| Northern Ireland ..... | 1937 | 0 to 99 | – | 100 and over | Not given |
| Scotland ..... | 1931 | 0 to 99 | – | 100 and over | Not given |
| USSR[2] ..... | 1939 | – | 15-19 | 0-7, 8-11, 12-14, 10-year groups, 20 to 59, 60 and over | Given |
| Yugoslavia ..... | 1931 | 0 to 119 | – | 120 and over | Given |
| OCEANIA: | | | | | |
| Australia ..... | 1933* | 0 to 104 | – | 105 and over | Given[3] |
| New Zealand ..... | 1936* | 0 to 106 | – | – | Given |

[1] Ages 107 and 108 were shown separately for the Asiatic and "Coloured" populations. For "natives" (Bantu) ages were shown by single years to 107, and a final group of 108 and over was given.

[2] The age classification appearing in available publications was not presented by sex.

[3] Adjusted and "smoothed" ages were also given by single and five-year groups. Unstated ages were adjusted by assuming that they came from ages over 15 years.

either because the results of the censuses had not been published when this study was made, or because the publications were not available.

In the great majority of the censuses, the reports showed the population of each sex by single years of age throughout most of the life span (up to 89 years or more). In twelve censuses, however, either no single years were shown or else such tabulations were made for only small segments of the population. For two of these censuses — those of Brazil (1940) and Greece (1940) — data were preliminary and may be available later in greater detail. There were two censuses (El Salvador, 1930; USSR, 1939), where peculiar age groups were presented, neither in single years nor in five-year groups. The classification by single years up to 5 and by five-year groups thenceforth, which was recommended by the Population Commission as a desirable minimum, was provided by all but nine of the censuses for which information was available.

In the censuses of three countries (Honduras 1945, the Netherlands 1930, and Venezuela 1941), the age group under one year was classified by months or days of age. Data on ages of infants in months or days were obtained on the schedules of several other censuses, but the results were not published.

Although tabulations of the total population of each sex by single years of age were given in the reports of most censuses, a grouping of ages was almost universally presented in the tables giving statistics on other population characteristics cross-classified by sex and age. It would obviously be impracticable to make all such cross-tabulations by single years of age. A problem of international comparability therefore exists in the choice of age groupings for use in cross-tabulations.

An important consideration in the choice of such groupings is the bias which may be introduced by errors in the reporting of ages, and particularly by the tendency to report ages ending in zero or five, where the true age is one or two years above or below. From this point of view it might seem advantageous at first thought, in the construction of five-year groups, to place the favoured ages at the centre of the groups, so as to avoid undue bias; for example, to use the groups 13-17, 18-22, etc. It has been shown, however, that a grouping such as 5-9, 10-14, 15-19, etc., usually gives the minimum difference between enumerated and graduated distributions.[6] In a decennial age grouping, this principle would lead to the choice of groups such as 15-24, 25-34, etc., since the accumulation at ages ending in zero is generally much greater than that at ages ending in five.

In practice, the most common system of five-year age grouping used in recent censuses has been that of groups beginning with multiples of five, i.e. 10-14, 15-19, etc. This is the system proposed by the Population Commission and the Committee

[6] Australia. Commonwealth Bureau of Census and Statistics. *Census of the Commonwealth of Australia, 30th June 1933. Statistician's Report.* Commonwealth Government Printer, Canberra, 1940. pp. 50-52.

on the 1950 Census of the Americas, both for tabulations of the whole population by sex and age and for cross-tabulations with other characteristics. This system, if generally adopted, would greatly facilitate international comparisons and compilations. In some censuses groups such as 11-15, 16-20, etc., have been used, and in a few censuses such groups as 12-16, 17-20, etc., have been tabulated.

In the formation of ten-year age groups there are two systems in common use: first, that of groups beginning with ages that end in zero, such as 10-19, 20-29, etc., and second, groups beginning with ages that end in five, such as 15-24, 25-34, etc. The former system seems to have been more widely used than the latter, but the latter is the one suggested by the two international agencies. The use of these two conflicting systems causes great difficulty in international comparisons. In countries where groupings such as 10-19, 20-29, etc., have been customary it would seem desirable, so far as practicable, to make the tabulations in the future by five-year groups, so as to maintain convertibility both to the proposed international standards and to the classifications used previously.

Besides the five-year and ten-year groups, certain other groupings of ages are of interest from both national and international viewpoints. The "productive" and "dependent" ages are of special importance from an economic point of view, and the reproductive ages from a demographic point of view, though these groups can be specifically defined only by arbitrary choices of limits. Other groups of special interest, the definitions of which vary from country to country according to national laws and practices, are the voting ages, school ages, and ages of military service.

## F. Classifications of persons not reporting their ages

It is common experience in census taking that some persons do not state their ages. In the majority of the censuses examined such persons were tabulated as a separate category. But in seventeen censuses they were not separately tabulated and it was not explained how they had been classified in the tabulations of age groups. In four of the censuses in which "age unstated" was not given as a separate category (Canada 1941, United States 1940, Ireland 1936, and India 1931), it was explained that the ages of such persons had been estimated. For Canada and the United States detailed explanation of the methods used in estimating unknown ages were given.[7] In another census, that of Australia (1933), unknown ages were estimated in addition to being shown as a separate group.

For the sake of a clear indication of the meaning and reliability of the statistics it is desirable that persons whose ages are not stated should be tabulated as a separate group, except where their ages are estimated either by the enumerators or by respondents in accordance with specific instructions for determining the approximate ages in such cases, or by the staff in the central census office using careful methods of estimating ages from other information on the census schedules. In that case the methods of assignment used should be clearly stated in the census reports.

[7] In this connexion: W. Edwards Deming. *The Elimination of Unknown Ages in the 1940 Population Census.* United States Bureau of the Census, Washington, D.C., January 1942. See also: Canada. Dominion Bureau of Statistics. *Eighth Census of Canada 1941. Administrative Report of the Dominion Statistician.* Ottawa, 1945. pp. 101-105.

# IV. MARITAL STATUS

*(prepared by the Statistical Office of the United Nations)*

## A. Uses of data on marital status

Marital status is another fundamental classification of the population which, like sex and age, has been obtained in the censuses of almost all countries. The uses of data on this subject are too diverse to permit a full description here, but a brief mention of a few of the most important applications will be helpful for an understanding of the problems of international standardization of marital status classifications and tabulations.

From the demographic point of view, the marital status of the population has an obvious importance as a factor influencing population growth. An evaluation of its importance in this connexion requires a tabulation of the marital status data in relation to sex and age, so that the influence of failure to marry, of the age at marriage, and of the prevalence of widowhood and divorce upon the reproductive capacity of the population in reproductive ages can be determined. This type of analysis becomes especially fruitful if the marital status data for various sex and age groups are further classified by measures of fertility such as the distribution by number of children born, and by population characteristics such as birthplace or nationality, race, religion, occupation and economic status or income, so that different patterns of marital status among various population groups can be studied and their influence upon trends in the composition of the population determined.

In addition to their demographic importance such statistics have an evident value for the study of sociological and medical problems connected with bachelorhood, spinsterhood, widowhood and divorce. In countries where polygamous marriage is common, census data on this type of union will provide valuable information for the study of this social custom. Data on marital status are also of primary importance in many kinds of economic analyses, including the enumeration of "consumer units", the estimation of demand for housing and other goods, and the analysis of problems of dependency and of factors affecting the supply of labour.

The value of census data on this subject is such as to give prime importance to the attainment of international comparability in marital status classifications and cross-tabulations, and to the standardization of definitions of the principal marital status categories. At present there is enough diversity of practices in the censuses of different countries to hinder seriously international studies based on these statistics.

## B. The categories of marital status

### 1. Categories recommended by international agencies

The Population Commission recommended at its fourth session that the following marital status categories be identified in population censuses: (*a*) married, including persons in stable *de facto* unions; (*b*) widowed, not remarried; (*c*) divorced, not remarried; (*d*) single, that is, not married, widowed, or divorced in the sense just stated. The Commission also indicated that in some countries it would be desirable to subdivide category (*a*) into: (*a*-1) persons formally married; and (*a*-2) persons in *de facto* unions. Where feasible the Commission also suggested that married persons living apart from their spouses, though not divorced, be classified separately from those living together.[1]

On this point the recommendation of the Committee on the 1950 Census of the Americas was less clear-cut:[2]

"a. It is recommended that data be collected for the following categories: Single (never married); married; widowed (not remarried); divorced (not remarried).

"b. It is recommended that those countries which find it possible and appropriate to do so investigate, in addition: common law unions;

[1] *Report of the fourth session of the Population Commission, (op. cit.)*, pp. 25-26.

[2] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . . (op. cit.)*, p. 22.

separated *de facto* (married persons not divorced, but living apart); separated legally.

"c. For the investigation of marital status, it is recommended that the minimum age be taken as that specified by civil law, or by the customs of the country. It is further recommended that, in tabulation, the necessary measures be taken to assure international comparability."

The Committee did not make clear in which of the major categories persons in "common law" or *de facto* unions should be included if not enumerated as a separate category. It was also unclear whether the "separated *de facto*" and the "separated legally" should be considered as sub-groups of the married, or as belonging, perhaps, to the divorced group.

### 2. Principal categories enumerated in recent censuses

Table 4 shows the principal categories of marital status enumerated in the recent censuses of fifty-three countries.

In fifty of the fifty-three censuses, at least the three major groups, married, widowed and single, were distinguished. The exceptions are the 1940 census of Japan, where the widowed were combined with the divorced or separated, and the 1939 census of the Soviet Union, where only the married were enumerated separately, the widowed, divorced and single being combined. It was not possible to determine for the census of Yugoslavia (1931) which marital status groups were enumerated separately. The category "divorced" was also distinguished in the great majority of the censuses, the exceptions being found in the censuses of Colombia (1938), Ireland (1946) and Spain (1940), in addition to those of the USSR and Japan. In some of these countries divorce is not legally recognized. A separate category consisting mainly of persons whose marriages had been annulled was used in several other countries, e.g. Brazil (1940) and Chile (1940). In fourteen censuses, "separated" was enumerated as a marital status category.

The apparent uniformity of the major marital status categories enumerated in the various censuses conceals important variations in the definitions of the categories, and in many instances a lack of exact definition which is highly damaging to international comparability as well as to the usefulness of results for national analyses. So far as the widowed are concerned, it may be assumed in the absence of an exact definition that the category is understood to mean "widowed, not remarried". The other categories, however, are subject to important variations of interpretation, especially with reference to the classification of persons living as husband and wife but not formally or legally married, and of "separated" persons, not divorced but not living with their spouses. Table 5 illustrates the variations among the different censuses in the classification of these groups.

### 3. Classification of persons in de facto unions

In six of the fifty-three censuses persons not formally married (or whose marriages were not "registered") but living together as man and wife were enumerated separately, and in three others it was specifically provided that such persons should be reported as married. In four censuses the available information indicates that persons in *de facto* marital unions were neither enumerated separately nor included in the category "married" by virtue of this status. Among these, in the census of Hungary (1941) it was specified that such persons were to be enumerated according to their legal marital status, i.e. single, married, etc., depending on the individual case. The same procedure was followed in the census of Bulgaria (1934), but a special designation was used to identify those who had children in such unions. In the remaining forty censuses, it could not be determined what classification was intended for such persons, in most cases because the census schedules and instructions did not indicate how they should be reported. For a number of these countries, however, it is certain that these persons were not enumerated separately.

In countries where *de facto* marital unions are not common the failure to specify the classification desired does not constitute a very important source of uncertainty in the interpretation of results. In many parts of the world, however, such unions are numerically very important; for example, they are known to be common in a large part of Latin America. Under those conditions, the separate enumeration of persons in *de facto* unions appears to be essential for a clear determination of the sizes of the single and the formally married categories, as well as for a realistic picture of the composition of the population with respect to marital status. If the desired classification of such persons is not clearly stated, some of them may be reported as married while others are returned as single, so that the interpretation of the results will be in doubt. Even if it is explicitly stated in the instructions that these persons are

## Table 4. Principal categories of marital status enumerated in recent censuses

("x" indicates that the given category was enumerated separately; "–" that it was not; ".." that information was not available.)

| Country | Census year | Married | Widowed | Divorced | "Separated" | Single |
|---|---|---|---|---|---|---|
| AFRICA: | | | | | | |
| Egypt | 1947 | x | x | x | – | x |
| Union of South Africa | 1946 | x | x | x | – | x |
| AMERICA: | | | | | | |
| Argentina | 1947 | x | x | x[1] | – | x |
| Brazil | 1940 | x | x | x[2] | x | x |
| Canada | 1941 | x | x | x | x | x |
| Chile | 1940 | x | x | x[3] | – | x |
| Colombia | 1938 | x | x | – | – | x |
| Costa Rica | 1927 | x | x | x | x | x |
| Cuba | 1943 | x | x | x | – | x |
| Dominican Republic | 1935 | x | x | x | – | x |
| El Salvador | 1930 | x | x | x | – | x |
| Guatemala | 1940 | x | x | x | – | x |
| Honduras | 1945 | x | x | x | – | x |
| Mexico | 1940 | x | x | x | – | x |
| Nicaragua | 1940 | x | x | x | – | x |
| Panama | 1940 | x | x | x | – | x |
| Paraguay | 1936 | x | x | x | – | x |
| Peru | 1940 | x | x | x | – | x |
| United States of America | 1940 | x | x | x | –[4] | x |
| Venezuela | 1941 | x | x | x | – | x |
| ASIA: | | | | | | |
| India | 1941 | x | x | x | – | x |
| Japan | 1940 | x | –[5] | –[5] | –[5] | x |
| Philippines | 1948 | x | x | x | – | x |
| Syria | 1947 | x | x | x | – | x |
| Turkey | 1940 | x | x | x | – | x |
| EUROPE: | | | | | | |
| Austria | 1934 | x | x | x | x | x |
| Belgium | 1947 | x | x | x | – | x |
| Bulgaria | 1946 | x | x | x | – | x |
| Czechoslovakia | 1947 | x | x | x | x | x |
| Denmark | 1940 | x | x | x | x | x |
| Finland | 1940 | x | x | x | .. | x |
| France | 1946 | x | x | x | – | x |
| Germany | 1939 | x | x | x | .. | x |
| Greece | 1940 | x | x | x[6] | – | x |
| Hungary | 1941 | x | x | x | – | x |
| Ireland | 1946 | x | x | – | – | x |
| Italy | 1936 | x | x | x | x | x |
| Luxembourg | 1947 | x | x | x | x | x |
| Netherlands | 1947 | x | x | x | x | x |
| Norway | 1946 | x | x | x | x | x |
| Poland | 1931 | x | x | x | x | x |
| Portugal | 1940 | x | x | x | x | x |
| Romania | 1930 | x | x | x | – | x |
| Spain | 1940 | x | x | – | – | x |
| Sweden | 1945 | x | x | x | – | x |
| Switzerland | 1941 | x | x | x | – | x |
| United Kingdom | | | | | | |
| England and Wales | 1931 | x | x | x | – | x |
| Northern Ireland | 1937 | x | x | x | – | x |
| Scotland | 1931 | x | x | x | – | x |
| USSR | 1939 | x[7] | – | – | – | – |
| Yugoslavia | 1931 | .. | .. | .. | .. | .. |
| OCEANIA: | | | | | | |
| Australia | 1947 | x | x | x | x | x |
| New Zealand | 1945 | x | x | x | x | x |

[1] The category "divorced" included persons legally separated, or those having obtained divorces outside the country.

[2] For Brazilians, this category included only persons whose marriages had been annulled.

[3] The question referred only to annulments.

[4] Married persons living apart from their spouses were to be reported on the schedule as "married", but those not enumerated in the same household with their spouses were identified in the process of coding and tabulated separately.

[5] Widowed, divorced, and separated persons were combined in a single category.

[6] The category enumerated was "legally separated", which in Greece is equivalent to divorced.

[7] The only question on marital status was whether or not married.

## Table 5. Methods of classifying persons in *de facto* marital unions and "separated" persons in recent censuses

("x" indicates that the given type of classification was made; "–" that it was not made; ". ." that the method of classification could not be determined from the available information)

| Country | Census year | *Persons in* de facto *unions* | | *"Separated" persons* | | |
|---|---|---|---|---|---|---|
| | | *Enumerated separately* | *Included in "married" by virtue of* de facto *union* | *Enumerated separately* | *Included in "married"* | *Included in "widowed" or "divorced"* |
| AFRICA: | | | | | | |
| Egypt | 1947 | – | –[1] | – | .. | .. |
| Union of South Africa | 1946 | – | x[2] | – | .. | .. |
| AMERICA: | | | | | | |
| Argentina | 1947 | .. | .. | – | .. | x[3] |
| Brazil | 1940 | .. | .. | x | – | – |
| Canada | 1941 | .. | .. | x | – | – |
| Chile | 1940 | – | .. | – | .. | .. |
| Colombia | 1938 | – | .. | – | .. | .. |
| Costa Rica | 1927 | .. | .. | x | .. | .. |
| Cuba | 1943 | – | .. | – | .. | .. |
| Dominican Republic | 1935 | – | .. | – | .. | .. |
| El Salvador | 1930 | – | .. | – | .. | .. |
| Guatemala | 1940 | – | .. | – | .. | .. |
| Honduras | 1945 | – | .. | – | .. | .. |
| Mexico | 1940 | x | – | – | x | – |
| Nicaragua | 1940 | x | – | – | .. | .. |
| Panama | 1940 | x | – | – | .. | .. |
| Paraguay | 1936 | – | .. | – | .. | .. |
| Peru | 1940 | x | – | – | .. | .. |
| United States of America | 1940 | .. | .. | – | x[4] | – |
| Venezuela | 1941 | – | .. | – | .. | .. |
| ASIA: | | | | | | |
| India | 1941 | .. | .. | – | .. | .. |
| Japan | 1940 | x[5] | – | – | – | x[6] |
| Philippines | 1948 | – | x | – | .. | .. |
| Syria | 1947 | .. | .. | – | .. | .. |
| Turkey | 1940 | – | – | – | .. | .. |
| EUROPE: | | | | | | |
| Austria | 1934 | .. | .. | x | – | – |
| Belgium | 1947 | .. | .. | – | .. | .. |
| Bulgaria | 1946 | –[7] | .. | – | x | – |
| Czechoslovakia | 1947 | – | .. | x | – | – |
| Denmark | 1940 | .. | .. | x | – | – |
| Finland | 1940 | .. | .. | .. | .. | .. |
| France | 1946 | .. | .. | – | x | – |
| Germany | 1939 | .. | .. | .. | .. | .. |
| Greece | 1940 | .. | .. | – | – | x[3] |
| Hungary | 1941 | – | – | – | – | x |
| Ireland | 1946 | .. | .. | – | .. | .. |
| Italy | 1936 | .. | .. | x | – | – |
| Luxembourg | 1947 | .. | .. | x | – | – |
| Netherlands | 1947 | .. | .. | x | – | – |
| Norway | 1946 | .. | .. | x | – | – |
| Poland | 1931 | x | – | x[8] | – | – |
| Portugal | 1940 | – | .. | x[9] | – | – |
| Romania | 1930 | .. | .. | – | .. | .. |
| Spain | 1940 | .. | .. | – | .. | .. |
| Sweden | 1945 | .. | .. | – | .. | .. |
| Switzerland | 1941 | .. | .. | – | x | – |
| United Kingdom | | | | | | |
| England and Wales | 1931 | .. | .. | – | .. | .. |
| Northern Ireland | 1937 | .. | .. | – | .. | .. |
| Scotland | 1931 | .. | .. | – | .. | .. |
| USSR | 1939 | – | x[10] | – | .. | .. |
| Yugoslavia | 1931 | .. | .. | .. | .. | .. |

[1] For purposes of the census, it was assumed that this type of union did not exist in Egypt.

[2] For "natives" (Bantu) only. It was provided that those living together as husband and wife even though not married either by Christian rites or native custom should be reported as married.

[3] Persons legally separated were included in "divorced".

[4] Tabulations show married persons whose spouses were not members of the household.

[5] Unregistered marriages were enumerated separately.

[6] "Widowed", "divorced" and "separated" were combined in a single category.

[7] Persons in *de facto* unions were enumerated according to their legal status, but a special designation was used to identify those who had children in such unions.

[8] Persons separated in fact but not legally separated were also enumerated separately.

Table 5. Methods of classifying persons in *de facto* marital unions and "separated" persons in recent censuses (cont.)

("x" indicates that the given type of classification was made; "–" that it was not made; ". ." that the method of classification could not be determined from the available information)

| Country | Census year | *Persons in* de facto *unions* | | *"Separated" persons* | | |
|---|---|---|---|---|---|---|
| | | *Enumerated separately* | *Included in "married" by virtue of* de facto *union* | *Enumerated separately* | *Included in "married"* | *Included in "widowed" or "divorced"* |
| OCEANIA: | | | | | | |
| Australia | 1947 | .. | .. | x[11] | – | – |
| New Zealand | 1945 | .. | .. | x | – | – |

[9] Legally separated.

[10] Persons whose marriages had not been registered were included among the married.

[11] This category included persons separated legally or otherwise.

to be returned either as married or as single, some doubt is likely to remain because the instructions may be disregarded in a significant number of cases. Separate enumeration of this category, where it is numerically important, has the advantage not only of clarifying the definitions of the other categories, but also of providing flexibility in the data so that they can readily be adapted to different types of analyses. From the legal point of view, for example, persons in *de facto* unions may be related to the single, but for purposes of economic analyses and of studies of the conditions affecting reproduction, they are more properly combined with the formally married. Separate enumeration of the category in countries where it is important would make it possible, for international comparisons, to group the statistics for all countries in accordance with the standard recommended by the Population Commission. Separate enumeration of the persons in *de facto* unions, in those censuses where it has been attempted, appears to have been successful.

### 4. Classification of "separated" persons

In fourteen of the fifty-three censuses the "separated" were enumerated as a separate marital status category; in five censuses (United States 1940, Mexico 1940, Bulgaria 1946, Switzerland 1941 and France 1946) they were to be reported as married; and in the census of Japan (1940) they were combined with the widowed and divorced. Persons legally separated were classified with the divorced in the censuses of Argentina (1947), Greece (1940) and Hungary (1941). In thirty of the censuses, it could not be determined how persons living apart from their spouses, but not divorced, were to be classified, though it might be presumed that they would be reported for the most part as married.

In most of the fourteen censuses where "separated" were treated as a distinct marital status category, the meaning of "separated" was not definitely stated on the census schedules or in the available field instructions. In some cases, the term was undoubtedly used to refer to persons legally separated, that is, separated by judicial action or by legalized agreement between the parties to the marriage. This definition was specifically stated in the census of Portugal (1940). In the census of Australia (1947) the definition used was "separated legally or otherwise". Such a definition leaves much room for uncertainty as to the circumstances in which persons not actually together with their spouses at a given time might be reported as "separated".

In countries where legal separation is not common, it is evidently useful, if practicable, to obtain statistics on *de facto* separations, for many of the same purposes for which statistics of the legally separated or divorced are used. Even where legal separation is fairly common, *de facto* separation, either permanent or for extended periods but with no legal basis, may be numerically more important. As the Population Commission indicated, data for persons separated legally or otherwise are desirable in order to make the marital status figures most useful for demographic, economic and sociological analyses. For example, in

analysis of the factors affecting marital fertility, or of the number and characteristics of consumer units, the separated should be distinguished from married persons living together. However, the experience in some censuses where the legally separated were numerated as a distinct category has indicated that it is difficult to obtain an accurate count of them, and it may be still more difficult to get a reliable enumeration of married persons living apart though not legally separated.

One way of solving this difficulty, which may be feasible in many censuses, is that which was used in the United States in 1940. All "separated" persons were to be reported as married, but in the coding of the census schedules those married persons whose spouses were not enumerated as living in the same household were classified as a distinct category. The result of this procedure depends to a considerable extent on whether the census is taken on a *de facto* or a *de jure* basis. In a strictly *de facto* enumeration, many persons absent from their spouses for only very short periods would be classified, according to this procedure, as "separated".

## C. Tabulations of data on marital status

### 1. Tabulations recommended by international agencies

In its recommendations regarding the statistical tables to be prepared on the basis of 1950 census inquiries relating to marital status, the Population Commission suggested that the marital status classification should show at least the major categories mentioned above, plus the category "marital status unstated". In this connexion the Commission added:[3]

"It is felt that elimination of the class 'marital status unstated' may lead to serious errors; hence this class should be tabulated separately. If such cases are assigned to specific marital status categories, the methods used should be clearly indicated.

"It is exceedingly useful to tabulate each of the above marital status categories, for each sex, by at least the following age groups: under 15 years, 5-year groups from 15 to 74, 75 years and over."

The Committee on the 1950 Census of the Americas made substantially the same recommendation regarding tabulations of marital status by sex and age, proposing the use of five-year age groups from 15 to 84, 85 years and over.[4]

### 2. Marital status categories tabulated in recent censuses

A review of the marital status tabulations published in the reports of those censuses for which tabulations were available indicates that in general the categories distinguished in the tabulations corresponded to those enumerated on the census schedules, as shown in table 4. In a few censuses however, including those of Brazil (1940) and Norway (1930) the category "separated", which had been distinguished on the census schedules, was combined in the tabulations wtih the divorced.

In several censuses, the tabulations did not show the number of persons for whom marital status was unstated, and it could not be determined how such persons had been classified. This was the case in the censuses of Chile (1940), Colombia (1938), El Salvador (1930), Honduras (1945), Panama (1940), India (1931), Finland (1940), Ireland (1936), Norway (1930), Spain (1940), Sweden (1945), Switzerland (1941), England and Wales (1931) and Northern Ireland (1937). As in the case of age statistics, the elimination of the category "unstated" without explanation of the methods used introduces an element of uncertainty, not only into international comparisons, but also into the interpretation of the figures for the individual countries concerned.

### 3. Tabulations of marital status by sex and age groups in recent censuses

Table 6 shows the age groups by which marital status data were tabulated, for each sex, in the censuses of the various countries. There were a few censuses, namely, those of Costa Rica (1927), the Dominican Republic (1935), Honduras (1940) and Romania (1930), for which tabulations of marital status data were available, but without any classification by age groups.

[3] *Report of the fourth session of the Population Commission* (*op. cit.*), p. 26.

[4] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . .* (*op. cit.*), p. 29.

## Table 6. Age classifications used in tabulations of marital status data by sex and age in recent censuses

("–" indicates that the given classification was not shown; ".." that information was not available; "*" that the census year is different from that shown in table 4)

| Country | Census year | Minimum age included in marital status tabulations | Age range covered by 5-year groups | Age range covered by 10-year (but not 5-year) groups | Other age groups tabulated |
|---|---|---|---|---|---|
| AFRICA: | | | | | |
| Egypt | 1937* | 16 years | – | 20 to 59 | 16-19, 60 and over |
| Union of South Africa[1] | 1936* | 0 years | 15 to 99 | – | 100 and over |
| AMERICA: | | | | | |
| Argentina | 1947 | .. | .. | .. | .. |
| Brazil | 1940 | 0 years | – | 0 to 79 | 80 and over |
| Canada | 1941 | 15 years | 15 to 89 | – | 90 and over |
| Chile | 1940 | 0 years | 0 to 99 | – | Single years 0 to 100, 101 and over |
| Colombia | 1938 | 0 years | 0 to 94 | – | Single years 0 to 98, 99 and over |
| Costa Rica[2] | 1927 | – | – | – | – |
| Cuba | 1943 | 12 years | – | 20 to 59 | 12, 13, 14-19, 60 and over |
| Dominican Republic[2] | 1935 | – | – | – | – |
| El Salvador | 1930 | 0 years | – | 30 to 99 | 0-1, 2-4, 5-7, 8-14, 15-17, 18-22, 23-29, 100 and over |
| Guatemala | 1940 | 14 years | – | 21 to 100[3] | 14, 15-17, 18, 19-20, 21, 22-30, 101 and over |
| Honduras[4] | 1945 | – | – | – | – |
| Mexico | 1940 | 16 years for male, 14 years for female | – | – | 14-19, 20-39, 40 and over[5] |
| Nicaragua | 1940 | .. | .. | .. | .. |
| Panama | 1940 | 15 years | 15 to 39 | 40 to 69 | 70 and over |
| Paraguay | 1936 | .. | .. | .. | .. |
| Peru | 1940 | 15 years | 15 to 99 | – | Single years 15 to 99, 100 and over |
| United States of America | 1940 | 14 years | 15 to 84 | – | 14, single years 15 to 34, 85 and over |
| Venezuela | 1941 | 0 years | 15 to 99 | – | 0-14, single years 15 to 99, 100 and over |
| ASIA: | | | | | |
| India | 1931* | 0 years | 0 to 69 | – | Single years 0 to 4, 70 and over |
| Japan | 1940 | 0 years | 15 to 119 | – | 0 to 10, single years 11 to 120 |
| Philippines | 1939* | 10 years | 10 to 24 | 25 to 64 | 65 and over |
| Syria | 1947 | .. | .. | .. | .. |
| Turkey | 1935* | 0 years | 0 to 94 | – | 95 and over |
| EUROPE: | | | | | |
| Austria | 1934 | 0 years | 0 to 104 | – | 105 |
| Belgium | 1930* | 0 years | 0 to 99 | – | 100 and over |
| Bulgaria | 1934* | 0 years | 0 to 89 | – | 90 and over |
| Czechoslovakia | 1930* | 0 years | 0 to 109 | – | 110 and over |
| Denmark | 1940 | 0 years | 0 to 99 | – | Single years 0 to 99, 100 and over |
| Finland | 1940 | 0 years | 0 to 104 | – | Single years 0 to 104 |
| France | 1946 | .. | .. | .. | .. |
| Germany | 1939 | 0 years | 0 to 99 | – | Single years 0 to 100 |
| Greece | 1940 | .. | .. | .. | .. |
| Hungary | 1941 | 0 years | 0 to 99 | – | Single years 0 to 99, 100 and over |
| Ireland | 1936* | 15 years | 15 to 99 | – | Single years 15 to 99, 100 and over |
| Italy | 1936 | 0 years | 0 to 99 | – | 100 and over |
| Luxembourg | 1935* | 0 years | 15 to 99 | – | Under 15 years |
| Netherlands | 1930* | 0 years | 0 to 99 | – | 100 and over |

[1] The age distribution shown is that presented for the non-"native" population. For "natives" (Bantu) the only groups given were under 21 years and 21 years and over.

[2] Data on marital status were tabulated without a classification by age.

[3] The published age groups are 21–30, 31–40, etc., instead of the standard groups 20–29, 30–39, etc.

[4] Data on marital status were tabulated without a classification by age but the question was asked only of persons 12 years and over.

[5] Also shown separately are single persons 20 years of age and 21 years of age, females 14–15 years of age married in civil ceremonies, and persons 16–17 and 18–19 years married in civil ceremonies.

[6] In some tabulations of marital status, 15 years was shown as a minimum age. However, all persons under this age were, in a summary table, classified as single.

**Table 6. Age classifications used in tabulations of marital status data by sex and age in recent censuses (cont.)**

("–" indicates that the given classification was not shown; ". ." that the information was not available; "*" that the census year is different from that shown in table 4)

| Country | Census year | Minimum age included in marital status tabulations | Age range covered by 5-year groups | Age range covered by 10-year (but not 5-year) groups | Other age groups tabulated |
|---|---|---|---|---|---|
| EUROPE (cont.): | | | | | |
| Norway | 1930* | 0 years[6] | 0 to 104 | – | Single years 0 to 104 |
| Poland | 1931 | 15 years | 15 to 79 | – | Single years 15 to 39 |
| Portugal | 1940 | 14 years | 15 to 119 | – | Single years 14 to 119 |
| Romania[2] | 1930 | – | – | – | – |
| Spain | 1940 | ..[7] | 15 to 84 | .. | Under 15, 85 and over |
| Sweden | 1945 | 0 years | 0 to 94 | – | 95 and over |
| Switzerland | 1941 | 0 years | 0 to 99 | – | 100 and over |
| United Kingdom | | | | | |
| England and Wales | 1931 | 0 years | 0 to 99 | – | Single years 0 to 99, 100 and over |
| Northern Ireland | 1937 | 0 years | 0 to 99 | – | Single years 0 to 99, 100 and over |
| Scotland | 1931 | 0 years | 0 to 99 | – | Single years 0 to 99, 100 and over |
| USSR | 1939 | .. | .. | .. | .. |
| Yugoslavia | 1931 | ..[7] | 15 to 49 | 50 to 59 | Under 15, 60 and over |
| OCEANIA: | | | | | |
| Australia | 1933* | 0 years | 0 to 99 | – | 100 and over |
| New Zealand | 1936* | 16 years | 20 to 89 | – | 16-19, 20, 21-24, 90 and over |

[7] The data on marital status by age did not appear in the available census publications but were furnished in response to the demographic questionnaire circulated to governments by the Statistical Office of the United Nations. It was not possible to determine from the form in which the data appear whether any minimum age was applied.

In more than half of the censuses, the tabulations gave at least the amount of detail in age grouping of the data on marital status which was suggested by the Population Commission and the Committee on the 1950 Census of the Americas, showing five-year intervals from 15 to 74 or 84 years. In many of these, greater detail was shown, the tabulations being made by single years rather than five-year groups, and the classification by single years or five-year groups being carried up to 90, 100 or even higher ages.

Among those censuses in which marital status data were tabulated by age, the deficiencies in age grouping most commonly found, by comparison with the standard proposed by the Population Commission were: (*a*) failure to give totals of the population under 15 years of age subdivided by marital status; and (*b*) presentation of data by ten-year rather than five-year groups for a part of the age span 15 to 74 years. The first deficiency occurred in thirteen of the censuses examined, where tabulations were limited to the population over a stated minimum age. In five of these censuses the minimum age was 15 years. This method satisfies the recommendation of the Committee on the 1950 Census of the Americas, but not that of the Population Commission. The resulting limitation of the usefulness of the data for international comparisons is not great because the numbers of persons married at ages under the minimum tabulated were undoubtedly relatively small in the countries concerned. However, in countries where marriage at an early age is common, it is especially important that the data on marital status should not exclude the younger ages. The second type of deficiency was observed in eight censuses. In addition there was one census (Guatemala 1940) in which ages were tabulated in ten-year groups beginning with ages ending in 1, and one census (Mexico, 1940) where the age grouping tabulated was not sufficiently fine to yield even ten-year groups. On the whole, however, the disparity of age groupings used in various censuses for the tabulation of marital status data is a less important source of non-comparability than the differences in definitions, and the failure in some censuses to make any tabulations of marital status by age groups.

## D. Supplementary census inquiries relevant to marital status

In a few censuses the inquiries aimed at distinguishing the major categories of marital status at the time of enumeration have been supplemented by other related questions which provided valuable information for certain demographic, economic and sociological analyses.

Supplementary questions on age at marriage, date of marriage, or duration of marriage for the married, on date or duration of widowhood or divorce for persons in those categories at the time of the census, and on the number of times married or marital status prior to the current

marriage, are especially valuable as means of analysing fertility and reproduction of the population (see chapter V). Questions of this type have been asked in recent censuses of Belgium (1947), Bulgaria (1946), France (1946), Germany (1939), Greece (1940), Ireland (1946), the Netherlands (1947), Norway (1930), Spain (1940), the United States (1940) and other countries. In addition to fertility analyses, the results may be used for such purposes as studying the probability of re-marriage after widowhood or divorce, the average duration of widowhood or divorce, and related questions of dependency and social insurance. Information on age at first marriage is also of particular significance in those countries where child marriage is an important social problem.

In countries where polygamy is practised it may be useful to determine its extent by means of special questions on the population census schedules. In the census of Egypt (1947) married persons were asked whether they were living in monogamous or polygamous unions.

# V. FERTILITY[1]

*(prepared by the Population Division of the United Nations)*

## A. Major types of fertility data and their uses

Data on fertility, that is, the frequency of births in a population, form an almost indispensable basis for studying the prospects of population growth in a country, the probable development of its age structure, and the possible effects on population growth of economic and social changes, public health measures and other factors. Knowledge of the fertility of different groups of the population, such as religious or ethnic groups, makes it possible to predict changes in the composition of the population. The study of the fertility of different groups also throws light on the conditions which influence fertility. Information on fertility is also important in many different scientific fields (sociology, anthropology, genetics, medicine, etc.).

The methods most generally used for the study of fertility are based on data obtained from censuses on the one hand and birth registration on the other. Measures of fertility are computed by relating the number of births occurring in a given group of the population to the number of persons in that group enumerated at the census. For this purpose tabulations of the population by age and sex, marital status and other characteristics (depending on the nature of the birth-registration data) are useful.

There are, however, methods by which fertility may be studied by means of census data alone. They may be used where birth-registration statistics do not exist or where they are inadequate. In cases where adequate birth-registration figures are available, census data can provide important supplementary information on fertility.

One way of utilizing census data for the study of fertility is to form the ratios of young children enumerated to the population of reproductive age. The normal census tabulations of the population by sex and age groups usually provide the materials for calculating such ratios for a country as a whole and for certain geographical subdivisions.

Some comparisons between the fertility of different groups of the population may be made from tabulations of household data intended primarily for other purposes. Tabulations of households by the number of children living in the household, particularly if restricted to children under a certain age, and tabulations of married couples (or married men, etc.) with the number of children living in the same household may be used for this purpose. Sometimes data of this type have been tabulated especially to facilitate the analysis of fertility. For example, tabulations made from the 1940 census of Denmark give the total number of children living in the same household with married couples of various durations of marriage, age of wife at marriage, etc.

Closely related to tabulations of this type are tabulations of the number of children living (whether in the same household or not) for married couples or married persons of various categories. A special question on the schedule is required to provide this information. Such tabulations have been made with a view to the study of fertility, though they also serve other purposes. In conjunction with tabulations on the number of children born, they have been used for the study of infant and childhood mortality.

The types of tabulations so far mentioned can be used, as has been said, to compare the fertility of different groups of the population. They are not, except under special circumstances mentioned below, suitable for the study of fertility as defined above, i.e. the frequency with which births occur. Fertility in this sense has many aspects. There are two distinct types of census inquiries specially designed for the study of the frequency of births: (*a*) special tabulations based on the analysis of the composition of household, and (*b*) data on the number of children born. These two kinds of inquiries were mentioned by the Population Commission in its recommendations for censuses to be taken around 1950, and they form the subject of the present report. The two types of inquiries serve somewhat different purposes

[1] See also: United Nations. Department of Social Affairs. *Fertility Data in Population Censuses.* Series A, Population Studies, No. 6. Lake Success, 1950.

and also require different enumeration and tabulation procedures. They will accordingly be treated separately.

## B. Recommendations of international agencies

At its third session, the Population Commission made the following recommendation:[2]

"It is recommended that one or more of the following types of data on fertility be obtained in each census:

(*a*) Ratios of children under five years of age to women of child-bearing age, derived from data on sex and age;

(*b*) Classifications of women by number of their children under five years of age living in the same household, derived from data on sex, age, and household relationship.

"In addition, where more elaborate inquiries are feasible, data may be obtained for women by number of children born alive and, for women married at the time of the census, by duration of marriage."

At its fourth session, the Commission made the following suggestions regarding tabulations on fertility:[3]

"Some information about fertility can be obtained without any special tabulations by expressing the number of children under a certain age (for example, under 5 years) as a ratio to the number of adults of suitable age (for example, women 15 to 44 or men 20 to 49 years old). The tabulation of population by sex and age groups . . . provides the materials for calculating such ratios for the whole country and for whatever geographical sub-divisions are presented in that tabulation. Wherever feasible, however, it is recommended that such data be supplemented by one or more of the types of tabulations designed specifically for fertility analysis, which are described below.

"(a) *Tabulations based on analysis of the composition of households*

"Tabulations of this type can be made without any special census questions relating to fertility. They are derived from an inspection of the returns for children under a specified age enumerated in each household, and for adults in the same household. The children are allocated to the adults who may be presumed to be their parents, on the basis of the household relationships entered on the schedules or of other available indications, such as identity of surnames and the order of enumeration. Tabulations are made for various age groups and other categories of the adult population of either sex, by marital status, showing numbers of adults in each group and the total numbers of their children.

"Where fertility tabulations of this type are made, it is generally preferable that the data for children refer to those under 5 years of age. (In countries where the census enumeration of infants is nearly complete, it may be advantageous to tabulate in addition data for children under 1, since more accurate analysis of fertility can thus be obtained.) The tabulations should be made for the following age groups of the adult population: 5-year groups from 15 to 34 years, 10-year groups from 35 to 54 years, 55 years and over. The marital status groups distinguished should be (i) married . . .[4] and (ii) others. The adult population may be further classified into groups identified on the basis of occupation, industrial or social status, mother tongue, birthplace, citizenship, literacy, education or other data on the census schedule which are relevant to the study of fertility differentials in each country. In the case of characteristics by which both parents can be classified, such as occupation and education, tabulations for both sexes are useful.

"(b) *Tabulations based on questions regarding number of children born*

"Where the census schedules contain questions regarding the number of children born to each woman, the details of the tabulations must be determined with reference to the specific questions asked, and in the light of the aspects of fertility that are of most interest in each country. The following general types of tabulations, however, are suggested for data on this subject:

(i) Number of women reporting the number of children born (including those reporting that they have borne none), total number of children reported and number of women not reporting, tabulated for (*a*) married women and (*b*) widowed and divorced women in each ten-year age group from 15 to 74 years; and

(ii) Number of women reporting each number of births (0, 1, 2, etc., up to 9, 10-14, 15-19, 20 and more), and number not reporting, classi-

[2] *Report of the Population Commission* (third session, *op. cit.*), p. 18.

[3] *Report of the fourth session of the Population Commission, (op. cit.)*, pp. 30-32.

[4] The Commission specified that "married" should be defined here in the same way as recommended for tabulations of marital status. See chapter IV.

fied by marital status for each age group as specified for tabulation (i).

"If questions on the year of marriage, duration of or age at marriage are also included in the census schedule, it is useful to tabulate at least the number of women reporting, the total number of births reported, and number not reporting, by age at the time of the census (as in tabulation (i) . . . ) in combination with the age at marriage (in 5-year groups from 15 to 34, 35 to 44, and 45 and over). This tabulation should cover married, widowed and divorced women (though the tabulation need not distinguish the marital status groups).

"The above tabulations may be made for various sections of the population in the manner suggested for tabulations based on the analysis of the composition of households. Tabulation (i) . . . , being simpler than the others, may be undertaken for a larger number of categories."

The Committee on the 1950 Census of the Americas at its second session, held in February 1949, made the following recommendation:[5]

"Tabulations on fertility should be prepared, based on questions already included in the census schedule, endeavouring to take account of the recommendations of this Committee and of the United Nations on this topic. It is left optional with the country whether a special question on fertility will be asked, such as 'Number of children born alive to this woman?' "

The Committee left to its Co-ordinating Board the responsibility of studying the tabulations which might be recommended on this subject, and making proposals for consideration at the Committee's next session.

## C. Tabulations of young children enumerated

### 1. The nature of the data

The first of the two types of tabulations on fertility which were recommended by the Population Commission is based on the analysis of the composition of households. This type of tabulation provides the means of analysing the ratios of children to adults of childbearing age in various sections of the population (industrial or occupational groups, religious communities, ethnic groups, etc.). As the Commission pointed out, tabulations of this type require no special questions on fertility. They can be derived from an inspection of the returns for children under a specified age (say five years) enumerated in each household and for persons of reproductive age enumerated in the same household. The use of a household schedule simplifies the process. The children are allocated to the adults who may be presumed to be their parents, on the basis of the household relationships entered on the schedules or of other available indications such as identity of surnames and the order of enumeration. The tabulations show, for each category of the adult population whose fertility is studied (industrial or occupational groups, religious communities, etc.), both the distribution of the adults by age (and usually by some marital status groups) and the number of children under a certain age who are presumed to be their offspring. From such a tabulation various measures of fertility may be obtained by relating the numbers of children to the numbers of persons of reproductive age.

Such tabulations were undertaken in the 1931 census of England and Wales[6] and the 1940 census of the United States. More recently data obtained by the U.S. Bureau of the Census from sample surveys have repeatedly been tabulated in the same way.[7] The tabulations in England and Wales relate to children under one, those in the United States to children under five.

The same type of tabulation can be derived if questions are asked at the census on the numbers and ages of the surviving children of each person (whether or not they are living in the same household). In this case, the number of surviving children under a specified age may be tabulated in relation to the ages and other characteristics of their parents as described above, without any special process of identification. However, data on surviving children, which have been collected in many censuses, are not usually tabulated in this way. In many cases, the tabulations give no breakdown by the age of the adult population and usually the upper age limit of the children covered is not low enough (even when there is an age limit) to permit the type of analysis here considered. The upper age limit in tabulations which are limited to children under a certain age is usually over ten years. At the 1930 census of Belgium, however, surviving children under six were tabulated by age of father for the whole population; but for subdivisions, such as regions and industrial groupings, the number of children

[5] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . . (op. cit.)*, p. 22.

[6] The fertility tabulations of the 1931 census of England and Wales have not yet been published.

[7] U.S. Bureau of the Census. *Current Population Reports.* Series P-20, No. 8, "Differential Fertility: June 1946", and Series P-20, No. 18, "Fertility: April 1947".

under six was presented without classification by age of father.

### 2. The uses of the data

The ratios of children to the population of parental age serve as substitutes for the ratios of births to population, i.e. fertility rates in the ordinary sense. For a country the ratio of young children to, say, women aged 15-44, as shown by the census, will hardly be used to study fertility if birth registration is fairly complete. But the tabulations described above give the number of young children enumerated with persons of various ages and thus make it possible to compute child-adult ratios for various age groups. This is of special interest for countries where the age of mother or the age of father is not recorded at birth registration. However, the allocation of children to parents by indirect criteria (enumeration on the same schedule, etc.) is uncertain and the numbers of children enumerated are, because of the effects of infant mortality and other factors, uncertain indices of the numbers of births. These uncertainties may have a varying effect on the resulting fertility measures for adults in different age groups. The experience of England and Wales in 1931 suggests that the use of tabulations of children for the study of fertility variations by age is not altogether satisfactory.[8] The 1940 United States tabulations for the white population, however, gave better results from this point of view. The rates for non-whites derived from the census tabulations do not agree in some important age groups with those derived from birth registration.[9]

The main interest is, however, likely to be attached to the study of differential fertility by means of over-all measures, like reproduction rates, rather than the fertility of individual age groups. By means of special tabulations of census data on young children indices of fertility may be computed for groups of the population whose births cannot be distinguished by means of registration data. For example, the fertility of persons of different income groups can be studied even though no data on this subject are obtained at registration, provided that information on income is required at the census. Even when registration data on such characteristics of the parents are available, they may not provide a satisfactory basis for the study of differential fertility. In England and Wales it has been found that statements of father's occupation at birth registration are not always comparable with census data on occupation.[10] Similarly, tabulations of data derived from the 1940 United States census have shown that the place of residence of the parents as indicated at birth registration is not necessarily identical with the place of residence recorded at the census.[11] Fertility indices obtained by relating registration data to population figures derived from the census may therefore be misleading. Rates derived from census tabulations of adults and the children enumerated with them are not subject to this defect.

### 3. Tabulations of the data in relation to other characteristics

The data for children under one enumerated at the 1931 census of England and Wales were tabulated by occupation, for regional groups, and for urban and rural aggregates of areas.

The data for children under five enumerated at the 1940 census of the United States were tabulated by race, urban or rural residence, native or foreign parentage, relationship to head of private household, occupation, educational level, whether the home was owned or rented and its rental value, migration status (whether living in the same place in 1940 as in 1935), and employment status of women (whether employed, seeking work or not economically active).

All the characteristics mentioned, of course, relate to the adult population, not to the children enumerated with them. The measures of fertility which may be derived depend on the classification by age and marital status employed in the tabulation and on whether the data on children have been tabulated for men or for women or for both sexes. The latter problem is here discussed first, because the marital status and age classifications which are most suitable depend to some extent on whether the tabulation relates to both sexes or if not, to which.

### 4. Paternal and maternal fertility

The fertility tabulations of children under five enumerated at the 1940 census of the United States were tabulations of women and the chil-

[8] R. R. Kuczynski. *The Measurement of Population Growth.* New York, Oxford University Press, 1936. Chapter III.

[9] U.S. Bureau of the Census. *Sixteenth Census of the United States. Differential Fertility 1940 and 1910—Standardized Fertility and Reproduction Rates.* Washington, D C. 1944. p. 4.

[10] "The Registrar-General's Decennial Supplement", 1921, part II; and also W. A. B. Hopkin and J. Hajnal, "The Analysis of the Births in England and Wales, 1939, by Father's Occupation". Part II, *Population Studies,* vol. I, No. 3. December 1947. pp. 285-288.

[11] Wilson M. Grabill, "Alternative Bases for Fertility Statistics". Paper read before the Population Association of America, May 1948.

dren enumerated with them. No tabulations of men and children enumerated with them were made.

The tabulations from the 1931 census of England and Wales included data on both men and women and the children enumerated with them. Further details of these tabulations are given below. The Population Commission stated, in its suggestions for tabulation, "In the case of characteristics by which both parents can be classified, such as occupation and education, tabulations for both sexes are useful."

Many measures of fertility (including reproduction rates) may be computed from the census data both for the population of men and for that of women. The two values thus found will normally differ. The study of both paternal and maternal measures is important for several types of differential fertility studies, particularly where the sex and age composition of the groups whose fertility is being compared differs substantially. This point arises, for example, in analysing geographical areas heavily affected by migration. In studies of the variation of fertility by certain social and economic characteristics also it is important to consider the relationship between paternal and maternal fertility. For example, both men and women can be classified by educational level and the fertility of the groups distinguished may be analysed. The fertility of men who have had university education may differ from that of women who have had university education, among other reasons, because male university graduates are usually a far larger section of the total male population than female graduates are of women as a whole, and many of the male graduates are likely to be married to women who are not graduates. University trained men and women cannot be considered component parts of one population in the sense in which the men and women in a country as a whole form parts of the population of that country. Characteristics such as occupation which are mainly applicable to one sex may be regarded as extreme examples of this problem.

### 5. Marital status

The fertility tabulations from the 1931 census of England and Wales were for married men and for married women enumerated in the same household as their husbands.

Some of the tabulations of children under five made from the 1940 census of the United States included children enumerated with women of every marital status, including the single women. Most of the tabulations covered only children under five enumerated with women who were married at the census date or had been married. Separate tabulations were made for women of the following marital status categories: (1) married once, husband present,[12] (2) married more than once, husband absent, (3) married unknown times, husband present, (4) married, husband absent, (5) widowed and divorced. In most of the cross-tabulations with other characteristics, however, only two groups were identified: (1) married once, husband present, (2) other ever-married women. Some tabulations (for example, by occupation of husband) were made only for women "married once, husband present".

It will be seen, therefore, that the marital status classifications adopted in the various tabulations discussed differ in two respects: in the categories of persons for whom children are tabulated at all and in the categories into which the persons covered by the tabulation are subdivided.

In regard to the first point, it has been found in the United States that the number of children enumerated with single women and with single, widowed and divorced men is small. The number of children who have to be omitted from the tabulation because they cannot be allocated to their parents is much larger. There is, therefore, no significant loss involved in the exclusion of children enumerated with persons in the marital status categories mentioned.

There may, however, be countries in which the omission of persons in these marital status categories (particularly of single women) from the tabulation would result in important losses. The number of children likely to be enumerated in a country with persons in a given marital status category depends not only on the fertility of such persons, but also on the extent to which they live in the same household with their children. In countries where marriage habits and related customs are different, there may well be an appreciable number of, say, single women who have children living in the same household with them.

For the computation of reproduction rates and other indices of fertility, it is desirable to be able to relate the children of persons of a given age to all the persons of that age. It is, therefore, desirable, even though the children enumerated

[12] The term "husband present" means that the wife was enumerated in the same household with her husband. "Married once" refers to a woman who has been married once only and is still married at the census. The other terms used have a similar meaning.

with persons of certain marital status groups are not tabulated, to tabulate the number of adults of every marital status by all other classifications found in the tabulation of young children. This was done in all the tabulations made from United States data. The required tabulation is, of course, often made for other purposes (e.g. a tabulation of men by age and occupation will usually be made for other purposes than the computation of indices of fertility for men of different occupations).

Special interest attaches to the fertility of married persons. Whatever the categories covered in the tabulation, it will usually be desired to tabulate the married persons and their children separately from persons of other marital status and their children. The slightly more limited category of married persons who are enumerated in the same household as their spouses is, however, often more convenient, for it is possible to tabulate the adults in this category and the children enumerated with them by characteristics of their spouses. For example, in the 1931 census of England and Wales, married women and their children were tabulated by age (of the married woman) and by her husband's occupation. It is thus possible, for example, to study the effect of the age distribution of their wives on the fertility of married men in different occupations. The 1940 data for the United States were tabulated by the education of the wife in combination with the education of the husband. Various tabulations by the occupation of the husband were also made.

#### 6. Age

Children enumerated with persons so old that they are unlikely to be parents have sometimes been excluded from fertility tabulations of young children. Thus in the census of England and Wales in 1931 the tabulation of infants enumerated with married men related only to married men under 55. In the case of the tabulation of infants enumerated with married women there was an upper age limit of 45. The tabulations of children under 5 from the United States census of 1940 related only to children enumerated with women aged 15 to 49.

In the United States tabulations, a five-year age grouping of the adults was generally used within the age-ranges to which the tabulations applied; single year age groupings were given for a few major categories. In the England and Wales census of 1931, the highest age group in the tables was a ten-year group (45-54 for men and 35-44 for women), while five-year groups were used up to that point.

## D. Data on the number of children born

#### 1. Uses of the data

Questions on the number of children born were asked in twenty-eight of the fifty-three censuses covered by this study, though in many cases the results have not been published. Such an inquiry, like the tabulations of children described in part C, is valuable as a means of obtaining information on fertility in countries where birth registration is non-existent or too incomplete for statistical purposes. It also provides knowledge of the fertility experience of the past in areas where birth registration has only recently become adequate in coverage or where, as in England and Wales and Sweden, birth registration though practically complete for a long period has failed to supply data on important topics such as the age of the parents, duration of marriage or order of birth. Moreover, inquiries of this kind provide information on the total fertility experience of persons or marriages up to the time of the census, i.e., the average number of children born, the proportions who have remained childless, the distribution of families by numbers of children born, etc. The latter information can be obtained only with difficulty and uncertainty from registration data, and then only under exceptionally favourable circumstances; and it cannot be obtained from the types of tabulations mentioned in part C. Recent research on fertility has emphasized the crucial importance of data of this kind.

#### 2. Reliability of the data

For older persons, the questions on the number of children born may relate to events long past. Questions of this sort are particularly liable to errors of response. The answers may be in error because of faulty memory on the part of the respondent or because the person who gives the information is not well informed. The latter source of error is especially important in censuses where the information for each household is taken by an enumerator from any person who is present when he calls. Children who died in infancy are particularly likely to be omitted. (This applies even more strongly to stillbirths, which are covered by the fertility questions asked at some censuses.) Fertility data relating to older persons,

particularly if they have borne many children, are thus particularly subject to error.

In some censuses where questions on numbers of children born have been asked, no response was obtained from a substantial proportion of the persons enumerated. This is often due in part to the fact that persons who have not had children (or those who fill out the schedule for them) suppose that no entry need be made.

Questions on numbers of children born may also be misunderstood in other ways; for example, it may not be understood that children who died before the census must be included. Certain steps which may be taken in the forming of questions to avoid these and other sources of error are mentioned below.

The methods discussed in part C for obtaining fertility measures from the enumeration of young children are liable to quite different and probably less serious sources of error. It should be remembered, however, that fertility data obtained from tabulations of young children enumerated in the household do not serve many of the analytical purposes for which data on children ever born may be used.

### 3. Methods of enumeration

It is not possible for one census to cover with equal efficiency all the purposes which such an inquiry can serve. There are many alternatives in the form of the questions on the schedule and in the design of the tabulations, each of which will be more suitable to some of the objectives than to others. In the vast majority of censuses the inquiry on the number of children born has referred only to the total up to census date. The following discussion relates chiefly to inquiries of this type and to the varying purposes which they may serve. The problems involved when the inquiry is extended to cover the dates of birth of the children will be discussed briefly at the end.

At some censuses, information on fertility has not been requested on the ordinary census schedule, but a special schedule has been used to cover questions on number of children born, as well as related questions on marriage and other characteristics which it was desired to cross-tabulate with fertility data (for example, in the 1947 census of Belgium).

Questions on fertility are usually asked only of women, but they may also be put to men. This problem is discussed below. In the main body of the text it is assumed, for simplicity of phrasing, that questions on the number of children are asked only of women.

(*a*) *Questions on total number of children born or children of last or current marriage.* Two primary forms of the question on the number of children born up to census date may be distinguished: (i) a question on all children ever born to the persons questioned; (ii) a question on the number of children born in the current or in the last marriage. Questions on the number of children born in the current or in the last marriage have been confined to censuses of European countries and of some British Dominions. In Europe, however, this type of question has been adopted in about twice as many countries as the question on all children born. In American countries questions on fertility have related to the total number of children born. The censuses where each type of question was asked are shown in table 7.

**Table 7. Categories of births covered by fertility questions in recent censuses**

("x" indicates that the questions had the stated coverage of births; "–" that they had a different coverage or that no questions on fertility were asked; ".." that information on coverage was not available)

| Country | Census year | Treatment of births to persons married more than once | | Treatment of stillbirths | | | |
|---|---|---|---|---|---|---|---|
| | | All births included | Births to present or last marriage only | Live births only | Total births (including stillbirths) | Live and stillbirths separately | Not specified |
| AFRICA: | | | | | | | |
| Egypt | 1947 | – | x | – | – | – | x |
| Union of South Africa | 1946 | – | – | – | – | – | – |
| AMERICA: | | | | | | | |
| Argentina | 1947 | x | – | – | x | – | – |
| Brazil | 1940 | x | – | – | – | x | – |
| Canada | 1941 | x | – | x | – | – | – |
| Chile | 1940 | x | – | – | – | – | x |
| Colombia | 1938 | – | – | – | – | – | – |
| Costa Rica | 1927 | – | – | – | – | – | – |
| Cuba | 1943 | – | – | – | – | – | – |

## Table 7. Categories of births covered by fertility questions in recent censuses (cont.)

("x" indicates that the questions had the stated coverage of births; "–" that they had a different coverage or that no questions on fertility were asked; ".." that information on coverage was not available)

| Country | Census year | Treatment of births to persons married more than once | | Treatment of stillbirths | | | |
|---|---|---|---|---|---|---|---|
| | | All births included | Births to present or last marriage only | Live births only | Total births (including stillbirths) | Live and stillbirths separately | Not specified |
| Dominican Republic.... | 1935 | x | – | – | – | – | x |
| El Salvador..... | 1930 | – | – | – | – | – | – |
| Guatemala..... | 1940 | – | – | – | – | – | – |
| Honduras..... | 1945 | – | – | – | – | – | – |
| Mexico..... | 1940 | x | – | x | – | – | – |
| Nicaragua..... | 1940 | x | – | x | – | – | – |
| Panama..... | 1940 | – | – | – | – | – | – |
| Paraguay..... | 1936 | – | – | – | – | – | – |
| Peru..... | 1940 | x | – | x | – | – | – |
| United States of America | 1940 | x | – | x | – | – | – |
| Venezuela..... | 1941 | – | – | – | – | – | – |
| ASIA: | | | | | | | |
| India..... | 1941 | x | – | – | – | – | x |
| Japan..... | 1940 | – | – | – | – | – | – |
| Philippines..... | 1948 | x | – | – | x | – | – |
| Syria..... | 1947 | – | – | – | – | – | – |
| Turkey..... | 1940 | – | – | – | – | – | – |
| EUROPE: | | | | | | | |
| Austria..... | 1934 | – | – | – | – | – | – |
| Belgium..... | 1947 | – | x | x | – | – | – |
| Bulgaria..... | 1946 | – | x | – | x | – | – |
| Czechoslovakia..... | 1947 | – | – | – | – | – | – |
| Denmark..... | 1940 | – | – | – | – | – | – |
| Finland..... | 1940 | – | – | – | – | – | – |
| France..... | 1946 | x | – | x | – | – | – |
| Germany..... | 1939 | – | x | – | x | – | – |
| Greece..... | 1940 | x[1] | – | x | – | – | – |
| Hungary..... | 1941 | x | – | – | x | – | – |
| Ireland..... | 1946 | – | x | x | – | – | – |
| Italy..... | 1936 | – | – | – | – | – | – |
| Luxembourg..... | 1947 | – | x | x | – | – | – |
| Netherlands..... | 1947 | – | x | x | – | – | – |
| Norway..... | 1946 | – | x | x | – | – | – |
| Poland..... | 1931 | – | – | – | – | – | – |
| Portugal..... | 1940 | – | x | – | x | – | – |
| Romania..... | 1930 | x | – | – | – | – | x |
| Spain..... | 1940 | x | – | – | – | x | – |
| Sweden..... | 1945 | – | – | – | – | – | – |
| Switzerland..... | 1941 | – | x | x | – | – | – |
| United Kingdom | | | | | | | |
| England and Wales... | 1941 | – | – | – | – | – | – |
| Northern Ireland..... | 1937 | – | – | – | – | – | – |
| Scotland..... | 1931 | – | – | – | – | – | – |
| USSR..... | 1939 | – | – | – | – | – | – |
| Yugoslavia..... | 1931 | .. | .. | .. | .. | .. | .. |
| OCEANIA: | | | | | | | |
| Australia..... | 1947 | – | x | x | – | – | – |
| New Zealand..... | 1945[2] | x | – | x | – | – | – |

[1] Women were required to state the number of children born, men to state the number of legitimate and recognized children.

[2] Data on fertility were obtained only from the Maori population.

The choice between the two types depends to some extent on the sociological characteristics of the marital unions common in a country. There are also some differences between the types of analysis for which data obtained by the two methods are most suitable. A question on the total number of children born is better adapted for studying the total fertility experience of persons past reproductive age. If, however, one is particularly interested in recent fertility experience it often becomes important to analyse fertility in relation to duration of marriage. In this case it is convenient to study the number of children born to marriages in existence at the census date in relation to the duration of the marriage. Even though the census question relates to all children

by any marriage, this type of analysis may, of course, be limited to persons married once only but in that case an additional question on the schedule is required.

It may be noted that the accuracy of reporting on children born to the existing marriages is likely to be better than that on children born to previous marriages.

(*b*) *Questions on duration of marriage and age at marriage.* An inquiry on the age at marriage, date of marriage, or duration of marriage has been associated almost universally with questions on the number of children born. (Exceptions are the censuses of Romania, 1930 and Chile, 1940). In some censuses, however, (including those of Brazil 1940, Peru 1940 and India 1941), a question on the age at which the first child was born has been substituted for a question on age at marriage. The question on age at marriage may relate to the age at the first marriage, the age at the last marriage, the ages at all marriages, the duration of the current or last marriage, or the total number of years lived in the married state. Instead of the age at marriage or duration of marriage the date of marriage may be obtained. If the replies are correct, the various forms of questions yield precisely equivalent information for those married once only and still married at the census date. For persons whose marriages have ended and persons married more than once, different information will be obtained according to the type of question employed. The form of question should therefore depend on the way in which such persons are to be dealt with in the tabulations. Apart from this consideration, the type of question affects the cost of the census operations. Thus if it is desired to tabulate data only by duration of marriage, it is obviously cheaper to ask for the duration to be stated on the schedule than to ask a question on the age at marriage and determine the duration by subtracting the age at marriage from the age at census. There may be less obvious cost advantages in the choice of one form of question or another where tabulation by both age at marriage and duration of marriage is intended. The form of question may also affect the accuracy of the answers. A question on the date of marriage rather than on age or duration is analagous to the substitution of a question on date of birth for a question on age. The question on date is often held to produce more accurate results.

Table 8 shows the forms which questions on age at marriage or duration of marriage have taken in different censuses.

(*c*) *Separation of uninterrupted marriages.* In analysing fertility data by age at or duration of marriage, the question arises how persons whose marriages have ended are to be treated. For many analytical purposes there is great advantage in isolating groups of persons whose marital history is completely identical and in particular in isolating that group whose marital history is without interruption, namely persons married once only and still married at the census date, who will normally be the most numerous in all the childbearing age groups. To do this requires a question on the schedule as to whether the woman has been married once only. Such a question has been asked at some censuses, e.g. Bulgaria (1946), Netherlands (1947), Spain (1940) and the United States (1940). Sometimes persons married more than once are required to state the date of each marriage (for example, in the 1940 census of Greece). If this instruction is satisfactorily carried out, separate tabulation of the fertility of those married once only is possible.

A woman's fertility is not affected if her marriage is dissolved after she has passed beyond childbearing age. Women married once only whose marriages were ended (by death of the husband, or divorce) after they reached, say, forty-five years of age, may therefore, for fertility studies, be included with women married once only and still married. Since widows form a large proportion of older women and many of them lose their husbands after their forty-fifth birthday, the inclusion of such widows with women still married at the census date affords a valuable addition to the number of cases available for studying the fertility of older women. Moreover, the women whose husbands are still alive will form a biased sample of all women in their age groups. Identification of women whose marriage was uninterrupted until the end of their childbearing period requires a question for widows and divorced women on the date (or age) at which their marriage was dissolved. Such a question was asked in the census of Hungary (1941). At the 1930 census of Czechoslovakia and the 1947 census of Belgium the year of death of the last spouse was asked for.

(*d*) *Categories of persons to whom questions are put.* There is great variety in census practice regarding the choice of persons who are required to answer questions on fertility. The more common practice is to ask the questions of women only, though they are sometimes asked also of men. In some countries they are put only to married women, in some to all women who are or have been married, in some cases to all women

## Table 8. Questions on duration of marriage and related topics in recent censuses

(This table is limited to censuses where some data on fertility were obtained. "x" indicates that the given type of question was asked; "–" that it was not asked)

| Country | Census year | Age at first marriage | Date of present or last marriage | Duration of present or last marriage | Number of times married[1] | Date of birth of first child | Age of mother at birth of first child |
|---|---|---|---|---|---|---|---|
| AFRICA: | | | | | | | |
| Egypt | 1947 | – | – | x | – | – | – |
| AMERICA: | | | | | | | |
| Argentina | 1947 | x | – | x[2] | – | – | – |
| Brazil | 1940 | – | – | – | – | – | x[3] |
| Canada | 1941 | x | – | – | – | – | – |
| Chile | 1940 | – | – | – | – | – | – |
| Dominican Republic | 1935 | – | – | – | – | x | – |
| Mexico | 1940 | x[4] | – | – | – | – | – |
| Nicaragua | 1940 | x[4] | – | – | – | – | – |
| Peru | 1940 | – | – | – | – | x | – |
| United States of America | 1940 | x | – | – | x | – | – |
| ASIA: | | | | | | | |
| India | 1941 | – | – | – | – | – | x |
| Philippines | 1948 | – | – | – | – | – | – |
| EUROPE: | | | | | | | |
| Belgium | 1947 | – | x | – | – | – | – |
| Bulgaria | 1946 | – | x | – | – | – | – |
| France | 1946 | – | x[5] | – | x | – | – |
| Germany | 1939 | – | x | – | – | – | – |
| Greece | 1940 | – | x[5] | – | x | – | – |
| Hungary | 1941 | – | x[5] | – | x | – | – |
| Ireland | 1946 | – | x | – | – | – | – |
| Luxembourg | 1947 | – | x | – | – | – | – |
| Netherlands | 1947 | – | x | – | x | – | – |
| Norway | 1946 | – | x | – | – | – | – |
| Portugal | 1940 | – | – | x | – | – | – |
| Romania | 1930 | – | – | – | – | – | – |
| Spain | 1940 | – | – | x | – | – | – |
| Switzerland | 1941 | – | x | – | – | – | – |
| OCEANIA: | | | | | | | |
| Australia | 1947 | – | – | x | – | – | – |
| New Zealand[6] | 1945 | – | – | – | – | – | – |

[1] This column includes those censuses in which the question was whether or not the present marriage was the first marriage.

[2] All women who had been married more than once were to state the total number of years married, excluding years of legal separation, divorce, or widowhood.

[3] Age of the father at birth of first child was also asked.

[4] The question was to be applied to the first marriage or free union.

[5] Dates of all marriages were asked for.

[6] Data on fertility were obtained only from the Maori population.

(including the single). To ask the question of married women only is appropriate if the principal aim of the inquiry is to analyse marriages whose fertility is not complete. If it is intended, however, to study the total fertility, by all husbands, of women who are past reproductive age, it is desirable to have information from the large proportion of older women who are widows.

The problem whether questions on fertility should be put to men raises more complicated issues. If the aim is to study the fertility of current marriages, the information obtained is the same whether the question is put to husbands or wives (if the answers are correct). There is some advantage in putting the question to the wife since the age of the wife (and particularly her age at marriage) have a far more direct bearing on fertility than the age of the husband. In countries where the census schedule is filled in by an enumerator from the answers given by an informant in the household who is present when he calls, this informant will often be the housewife (particularly in urban areas). For these and other reasons it may be possible to obtain more accurate information on the fertility of women than of men.

If the inquiry relates to the total number of children by all marriages, it is desirable as explained above to extend it to all persons ever married. In some countries the question has been addressed to all men and women. The 1940 censuses of Brazil and Greece, and the 1946 census of France are examples. At the 1941 census of Hungary fertility questions were to be

answered by men and women who had been married, widowed or divorced. This procedure makes it possible to analyse the reproductive performance of generations of men as well as of generations of women. The extra expense involved in thus extending the inquiry, is, however, heavy.

In some censuses "mixed" systems have been used; e.g. the questions have been addressed to married men, widowers and widows. The general purpose of such systems is to cover each marital union once and once only. To ask the questions of both married men and married women means that data are obtained twice for marriages where both spouses are enumerated at a census. The answers, as given by both spouses, should be exactly the same if the question relates to the children of the last marriage, but otherwise they may differ.

Table 9 shows the classes of persons to whom questions on fertility were put at each census where such questions were asked.

(*e*) *Classes of children covered.* The distinction between questions covering all children and those restricted to children by the last marriage has already been discussed. Census questions on number of children born also differ in that stillbirths may be included or excluded; there may be separate questions on live births and stillbirths; the number of live births may be obtained by means of two questions, one on the number of children still living, the other on the number born alive who have since died; the numbers of boys and girls born may be asked separately. The differences in the information required by these various forms of questions are of little importance for the study of fertility, in the sense in which that term is used here. The choice of questions must depend on the accuracy of the answers which a particular form is likely to elicit and on the other uses, besides the study of fertility, to which the answers to certain types of questions may be put. For example, as already stated, there seems to be a tendency, at least in some censuses, to omit births which occurred long ago if the child died in infancy, and particularly to omit stillbirths. Further, in the case of a question on the number of children born, it is necessary to make clear that it does not refer to the number still living and even less to the number living as dependants in the household. To some extent the meaning of the questions may be made clear by explanatory instructions. It seems reasonable to suppose, however, that, for example, children dying in infancy are less likely to be omitted if there is a question on the number of children who have died. Information on the number of children who have died may be used (under certain circumstances) for studies of infant mortality, provided that the enumeration is accurate enough. But, as already suggested, it is particularly in the case of the children who died that errors of reporting are most serious. This and other questions are, no doubt, in practice often put on the schedule partly because they serve additional purposes, and not merely because it is expected that they will make the fertility data more accurate. Table 7 shows how stillbirths were treated in the questions on number of children born, in different censuses.

(*f*) *Treatment of childless persons.* It has been found at several censuses that no replies were obtained for a high proportion of persons who have not had children. If the question on the schedule reads merely: "Enter here the number of children you have had" or something to this effect, this misunderstanding is very likely to arise. In several censuses the instructions expressly specify that the number zero (or the word "none" or some equivalent) should be entered for childless persons in answer to the question on the number of children. This was done in the 1946 censuses of France and Ireland. In some censuses (e.g. in the 1940 United States census), a special place on the schedule was provided to be marked for persons who had not had children.

### 4. Tabulations of data on children born

(*a*) *Principal tabulation methods.* Data on number of children ever born can be tabulated in two main ways. The tabulation may give merely the number of women (or men or marriages) in a given category and the total number of children reported by them. This provides the material for calculating the average number of children per woman. Alternatively, the women may be distributed by the number of children reported (i.e. how many reported that they had had none, how many reported 1, 2, etc.). The full distribution, of course, yields more information than the total number of children, but it is usually advisable to tabulate the total number as well as the distribution since it is not possible to calculate accurately the average number of children per woman from the distribution unless it is given fairly fully. Even if full details are available the calculation of averages for a large number of groups from the distributions is a very laborious process.

## Table 9. Persons of whom questions on fertility were asked in recent censuses

(This table includes only censuses where some data on fertility were obtained. "x" indicates that the questions had the coverage stated; "–" that they had a different coverage; ". . " that information on coverage was not available)

| Country | Census year | Persons of whom questions on fertility were asked: Married women | All women who were or had been married | All women | All persons who were or had been married | All men and women | Other groups |
|---|---|---|---|---|---|---|---|
| AFRICA: | | | | | | | |
| Egypt | 1947 | x | – | – | – | – | – |
| AMERICA: | | | | | | | |
| Argentina | 1947 | – | x | – | – | – | – |
| Brazil | 1940 | – | – | – | – | x | – |
| Canada | 1941 | – | x | – | – | – | – |
| Chile | 1940 | – | – | x | – | – | – |
| Dominican Republic | 1935 | – | – | x | – | – | – |
| Mexico | 1940 | – | – | x | – | – | – |
| Nicaragua | 1940 | – | – | x | – | – | – |
| Peru | 1940 | – | – | x | – | – | – |
| United States of America | 1940 | – | x | – | – | – | – |
| ASIA: | | | | | | | |
| India | 1941 | – | x | – | – | – | – |
| Philippines | 1948 | – | x | – | – | – | – |
| EUROPE: | | | | | | | |
| Belgium | 1947 | – | – | – | – | – | x[1] |
| Bulgaria | 1946 | x | – | – | – | – | – |
| France | 1946 | – | – | – | – | x | – |
| Germany | 1939 | x | .. | .. | .. | .. | .. |
| Greece | 1940 | – | – | – | – | x[2] | – |
| Hungary | 1941 | – | – | – | x | – | – |
| Ireland | 1946 | x | – | – | – | – | – |
| Luxembourg | 1947 | – | – | – | – | – | x[1] |
| Netherlands | 1947 | – | – | – | – | – | x[3] |
| Norway | 1946 | x | – | – | – | – | – |
| Portugal | 1940 | x | – | – | – | – | – |
| Romania | 1930 | – | x | – | – | – | – |
| Spain | 1940 | – | x | – | – | – | – |
| Switzerland | 1941 | x | – | – | – | – | – |
| OCEANIA: | | | | | | | |
| Australia | 1947 | – | – | – | – | – | x[4] |
| New Zealand | 1945[5] | x | – | – | – | – | – |

[1] The questions were asked of married men, widowers, and widows.

[2] Women were required to state the number of children born; men to state the number of legitimate and recognized children.

[3] The question was asked of married men only.

[4] The question was asked of married men and married women.

[5] Data on fertility were obtained only from the Maori population.

There is also a third method of tabulating fertility data which has been used in a few recent censuses (those of Brazil and Peru in 1940). In this method the tabulation gives the number of women who have had at least one child (such women being described as "mothers") and the total number of children they are reported to have had. Such a tabulation may be regarded as intermediate between the two types described. If the total number of women has been tabulated by the same characteristics as the number of "mothers", it is possible to derive the distribution by these characteristics of women who have not had children. The mean number of births to all women (including the childless) and the mean borne by those women who have borne at least one child can also be derived. If the tabulation is to be used in this way, it is, however, necessary that the women excluded as not being "mothers" should not contain a substantial proportion for whom no statement of the number of children born was made at the enumeration.

The problem of persons who have not answered the questions on fertility arises whatever method of tabulation is adopted. It has been a frequent procedure to exclude from the tabulation all the schedules on which no information or only imperfect information on fertility was entered. There is, however, often a strong presumption that the persons who have not answered the questions on

**Table 10. Cross-tabulations of data on age at census, age at marriage or duration of marriage with data on total births in relation to the total number of women (or marriages) or the distribution of women (or marriages) by number of children born**

(This table is limited to censuses where at least one of the specified cross-tabulations was available. "A" indicates that the given type of data was tabulated with data on the total number of births in relation to the total number of women (or marriages); "B" that it was tabulated with data on the distribution of women (or marriages) by number of children born; "AB" that it was tabulated in both ways; "*" that the census year is different from that shown in table 7)

| Country | Census year | Age at census only | Age at marriage only | Duration of marriage only | Age at census by age at marriage | Age at marriage by duration of marriage | Age at census by duration of marriage |
|---|---|---|---|---|---|---|---|
| AMERICA: | | | | | | | |
| Brazil | 1940 | AB | – | – | – | – | – |
| Canada | 1941 | AB | AB | – | AB | – | – |
| Peru | 1940 | A[1] | – | – | – | – | – |
| United States of America | 1940 | AB | AB | AB | AB | – | AB |
| ASIA: | | | | | | | |
| India | 1931* | – | A | A | – | –[2] | – |
| EUROPE: | | | | | | | |
| Belgium | 1930* | A | – | AB | – | – | A |
| Czechoslovakia | 1930* | AB | AB | AB | – | AB | AB |
| Germany | 1939 | AB | – | AB | – | – | AB |
| Netherlands | 1930* | – | – | A | – | – | – |
| Norway | 1930* | – | AB | AB | – | AB | – |
| Portugal | 1940 | B | – | B | – | | B |
| Switzerland | 1941 | – | – | AB | – | – | – |

[1] Only women who had had at least one child were included in this tabulation. Childless women were not shown at all.

[2] The proportion of childless women, by age at marriage and duration of marriage, was tabulated.

fertility include a particularly high proportion of those who have had no children. Even if this particular source of bias is not strong, the distribution of those who have not answered the questions on fertility by other characteristics (age, etc.) often gives valuable information on the reliability and character of the data on fertility. The Population Commission therefore recommended that schedules which bear no information on fertility should be included as a separate category in all tabulations on fertility.

(*b*) *Age at census, age at marriage and duration of marriage.* Data on number of children ever born for the population as a whole, or for subgroups (by occupation, religion, etc.) can hardly be interpreted unless they are given separately by the age or duration of marriage of the woman. In all the censuses studied where fertility data were obtained, some tabulations by age at the census date, age at marriage or duration of marriage have been provided. Table 10 shows which tabulations have been made at the different censuses.

In some censuses tabulation by age at the census date was the only classification by demographic characteristics provided in tabulations of fertility. Examples are the 1940 censuses of Brazil and Peru. The tabulation by age at census may be used to distinguish women of completed fertility from those who are still within the reproductive age groups. For those who are still in the reproductive age groups the age classification permits a study of the age-to-age variation in rates of reproduction, provided the data are not greatly disturbed by time trends in fertility. For those above reproductive age, the age groups permit an analysis of the experience of successive generations or cohorts, i.e. women born in different periods and therefore falling into different age groups at the census. For example, a comparison of the average number of children born to women aged 45-54, 55-64 and 65-74 and enumerated in 1950 would show the total fertility throughout their life time of the generations born in 1876-85, 1886-95 and 1896-1905. A comparison of the average number of children for these three groups might, for example, show how family size declined; and if the full distribution of women by number of children has been tabulated it is possible to trace how far the decline was due to a diminution in the proportion of large families or to an increase in childlessness. This tabulation is also suitable for the study of differential fertility since it is simple and may therefore be undertaken for a large number of sub-groups of the population. A particularly good example of this use of the age tabulation is provided by the fertility studies undertaken in connexion with the Canadian census of 1941.

Tables giving the number of children, or the distribution of married women by number of children, classified by duration of marriage only

were prepared from a number of censuses (for example, the 1930 censuses of Belgium and Czechoslovakia and the 1940 census of Portugal). Usually the figures were given for all women still married at the census date. The duration was usually that of the last marriage and the question on the schedule related to the children of the last marriage. If the grouping by duration of marriage is sufficiently fine, this type of tabulation is useful for the study of current fertility trends, particularly if data from successive censuses are available for comparison. For example, the preliminary tabulations of the German censuses of 1933 and 1939 gave distributions of marriages by the number of children born, classified only by duration of marriage (in single years); yet these figures provided important information on the recovery of the German birth rate after 1933. The results of such a tabulation in the case of marriages of long duration are, however, difficult to interpret. It is true, of course, that it may be assumed that marriages which have listed say 25 or more years are of completed fertility. But it is not possible to compare the fertility of women married 30-34 years with that of women married 25-29 years in the same way as the fertility of women in successive age groups may be compared. For the women enumerated who have been married 30-34 years are not a random sample of those who married 30-34 years before the census. The chances of survival to the census date are likely to be greater for women who married young and the chances that a woman survives and remains married are greatly increased by her having a young husband. Interpretation of the figures is rendered particularly difficult by the fact that the selection towards women who married young operates to a varying extent in different parts of the table.

At most censuses data on fertility have been tabulated by a combination of two of the three criteria: age at census, age at marriage and duration of marriage. If the groupings used are sufficiently fine, tabulations by (1) age at census and age at marriage, (2) age at marriage and duration of marriage and (3) age at census and duration of marriage, are for practical purposes equivalent for women still married at the census date. For example, in the 1939 German census a tabulation by single years of birth of the wife (for wives under 45) and single calendar years of celebration of the marriage was prepared. The age at marriage of women falling into any one cell in such tabulations is defined within a range of two years. Such tabulations are, however, often cumbersome to use, and they are expensive if the detail is extended to all duration groups and given separately for sub-groups as well as the total population.

However, where larger than single year groupings are adopted, the tabulations of various pairs among the three criteria (age at marriage, duration of marriage, age at census) are no longer equivalent. For example, women aged 30-34 and married 10-14 years may have married at any age from 15 to 24. Moreover, not all women aged 30-34 and married at ages 15 to 24 will have been married 10-14 years; some will fall into the marriage duration groups 5-9 and 15-19 years. Likewise, those with marriages of 10-14 years duration who married at ages 15 to 24 will be distributed by age at census over the range 25 to 39 years.

Which combination of two of the three characteristics it is best to tabulate will depend on the primary analytical purposes to be served, on the form of the census and on the treatment of women married more than once and of widowed and divorced women.

A tabulation by age at marriage in combination with age at census has the advantages outlined above for the single tabulation by age at census. It serves to show the effect of age at marriage on the fertility of women past reproductive age and may be used for comparing successive cohorts or for the study of differential fertility as explained above. Since the aim is to study total fertility over the life span, the most relevant definition of age at marriage is the age at first marriage. The tabulation is very valuable when carried out for all women ever married, without further subdivision by marital status (as in the census of Canada, 1941). Separate tabulation for women married once only and still married or for women married once only and enumerated with their husbands (as in the census of the United States, 1940) is a further refinement.

Tabulations by age at marriage and duration of marriage are the fundamental instruments for the study of the fertility of women who are still within reproductive age. These tabulations are usually carried out for all women still married. In countries where such tabulations were made the questions on the schedule relating to the duration of marriage and the age at marriage referred to the current marriage, and only children of this marriage were usually included. The censuses at which such tabulations have been prepared include those of the Netherlands (1930) and Norway (1930).

## Table 11. Types of cross-tabulations presented with data on fertility in recent censuses

(This table is limited to censuses where at least one of the specified cross-tabulations was available. "x" indicates that the given type of data was tabulated with some data on fertility; "–" that it was not; ". ." that information on tabulations was not available or was not complete; "*" that the census year is different from that shown in table 7)

| Country | Census year | Occupation or industry of | | Husband's occupational status | Urban-rural residence; or region, district, etc., of residence | Religion | Birthplace or nationali | Age of husband |
|---|---|---|---|---|---|---|---|---|
| | | Husband | Wife | | | | | |
| AMERICA: | | | | | | | | |
| Brazil | 1940 | – | – | – | x | – | – | – |
| Canada | 1941 | x | – | – | x | x | x | – |
| Peru | 1940 | – | – | – | x | – | – | – |
| United States of America | 1940 | x | – | – | x | – | x | – |
| ASIA: | | | | | | | | |
| India | 1931* | x | – | – | x | x[1] | – | – |
| EUROPE: | | | | | | | | |
| Belgium | 1930* | – | x | x[2] | – | – | x | x |
| Czechoslovakia | 1930* | x | x | x | x | x | x | x |
| Germany | 1939 | x | .. | x | x | – | – | – |
| Netherlands | 1930* | x | – | x | – | x | – | x |
| Norway | 1930* | x | – | x | x | – | – | – |
| Portugal | 1940 | – | – | – | x | – | – | – |
| Switzerland | 1941 | – | – | – | x | – | – | – |

[1] Hindus subdivided by caste.

[2] Wife's occupational status.

Tabulations by age at census and duration of marriage have often been prepared (for example, in the censuses of Belgium and Czechoslovakia in 1930, and Portugal in 1940.) The attraction of this type of table is probably that where a question on duration of marriage is asked, the tabulation can be prepared directly from the answers, whereas a tabulation by age at marriage and duration of marriage on the basis of that question involves deriving the age at marriage by subtracting the duration of marriage from the age at census. For analytical purposes, the cross-tabulation of duration of marriage with age at census seems less useful than the tabulation of duration of marriage by age at marriage, because the different duration groups of women who have the same age at census differ in age at marriage and their fertility cannot therefore be compared. As explained above, a tabulation of duration by age at census cannot be used to study the effect of age at marriage unless the age and duration groupings are very fine.

### 5. TABULATIONS OF DATA ON NUMBER OF CHILDREN BORN IN RELATION TO OTHER CHARACTERISTICS

Table 11 shows the characteristics (other than age at the census date, marital status, and age at or duration of marriage) by which data on number of children born have been tabulated. In censuses where fertility tabulations are restricted to married couples enumerated together or where special tabulations were made for this category (as in the 1940 census of the United States), it is possible to tabulate data on number of children born by the characteristics of either spouse. The advantages of this procedure are discussed in part C in connexion with the tabulations of young children enumerated.

The most common classification by which fertility data were tabulated is urban-rural residence. Tabulations by economic characteristics were also commonly found. In those countries where different religious groups are represented in significant numbers and where data on religion have been obtained at the census, tabulations of number of children born have almost always been made by religious groups.

# VI. PLACE OF BIRTH

*(prepared by the Population Division of the United Nations)*

## A. Uses of data on birthplace

### 1. Analysis of ethnic groups

Three major types of data relevant to the analysis of the ethnic composition of the population which have commonly been obtained in population censuses are discussed in this and the next two chapters: (*a*) place of birth, (*b*) nationality, and (*c*) language. Each of these types of data has other important applications, in addition to the study of ethnic composition. Other types of census data are also useful for the study of ethnic groups, notably data on race and religion. However, the importance of the latter types of data and the problems involved in obtaining them differ so much from country to country that there is little possibility of international standardization. It was probably at least partly for this reason that the Population Commission and the Committee on the 1950 Census of the Americas included birthplace, nationality, and language in their recommended subjects for 1950 censuses of population, but excluded race and religion.

Each of the three types of data discussed here has certain defects as a means of identifying ethnic groups. The classification by birthplace fails to take account of the fact that the population born in a given area may be made up of different ethnic groups. For example, in a country which has received large immigration from many parts of the world, the native population may include large numbers of children, grandchildren, etc., of immigrants, who retain many of the cultural characteristics of their ancestral countries. For this reason, in some countries census data are obtained on birthplace, not only of the individual, but also of his parents. Data on birthplace also fail to reflect the cultural assimilation of the foreign-born, which may be so thorough, under some circumstances, that they become almost indistinguishable from the natives.

Language is, on the whole, a more sensitive criterion than birthplace, for linguistic differences are generally accompanied by major differences in other cultural traits, and thorough knowledge of the predominant language or languages of the country is essential for full assimilation of immigrants. Language is also a more flexible criterion. Census questions may refer, for example, to the mother tongue or the language currently spoken, or to both, depending on the conditions which exist in each country and the special purposes that the data may be desired to serve. On the other hand, it must be considered that some languages are spoken by many different peoples having diverse cultures and originating in widely separated parts of the world.

Birthplace and language data can be used to identify important ethnic groups among the native population as well as immigrant minorities. Census questions on place of birth may call not only for the country of birth of the foreign-born population but also for the birthplaces of the natives, in terms of localities within the country. This information may be very valuable for countries where the economic and cultural characteristics of the inhabitants differ greatly from area to area within the country. In countries which have two or more major linguistic elements in the native population, the chief object of census data on language may be to distinguish these native groups, rather than to identify linguistic minorities of foreign origin.

Data on nationality, which are indispensable for legal or political purposes (see chapter VII, part B), are probably on the whole less efficient for the study of ethnic groups than either language or birthplace data. An individual's legal nationality may be changed by naturalization without any change in his cultural attributes. Nevertheless, for the alien population that has not been naturalized, the classification by country of nationality may be used as a fairly good indication of ethnic groupings.

No single criterion would be sufficient for a perfect grouping of the population of every country into its major ethnic components. In the censuses of some countries two or more types of data on this subject have been obtained, and the results have sometimes been tabulated in combination in order to obtain more meaningful classifications than could be made on the basis of any one

criterion alone. Moreover, for purposes other than the analysis of ethnic groups it may be desirable to obtain several types of data in this field.

Table 12 shows the countries where data on birthplace, nationality, and language have been obtained in recent censuses.

### Table 12. Major types of data on ethnic groups obtained in recent censuses

("x" indicates that the given type of question was asked; "–" that it was not asked; ". ." that information was not available or was not complete)

| Country | Census year | Place of birth | Legal nationality | Language |
|---|---|---|---|---|
| AFRICA: | | | | |
| Egypt | 1947 | x | x | – |
| Union of South Africa | 1946 | x | x | x |
| AMERICA: | | | | |
| Argentina | 1947 | x | x | – |
| Brazil | 1940 | x | x | x |
| Canada | 1941 | x | x | x |
| Chile | 1940 | x | x | – |
| Colombia | 1938 | – | x | – |
| Costa Rica | 1927 | x | x | x |
| Cuba | 1943 | x | x | x |
| Dominican Republic | 1935 | – | x | x |
| El Salvador | 1930 | – | x | – |
| Guatemala | 1940 | x | x | x |
| Honduras | 1945 | – | x | – |
| Mexico | 1940 | x | x | x |
| Nicaragua | 1940 | x | x | x |
| Panama | 1940 | x | x | – |
| Paraguay | 1936 | x | x | x |
| Peru | 1940 | x | x | x |
| United States of America | 1940 | x | x | x |
| Venezuela | 1941 | x | x | – |
| ASIA: | | | | |
| India | 1941 | x | x | x |
| Japan | 1940 | x | x | – |
| Philippines | 1948 | – | x | x |
| Syria | 1947 | x | x | – |
| Turkey | 1940 | x | x | x |
| EUROPE: | | | | |
| Austria | 1934 | x | x | x |
| Belgium | 1947 | x | x | x |
| Bulgaria | 1946 | x | x | x |
| Czechoslovakia | 1947 | – | – | – |
| Denmark | 1940 | x | x | – |
| Finland | 1940 | x | . . | x |
| France | 1946 | x | x | – |
| Germany | 1939 | . . | x | x |
| Greece | 1940 | x | x | x |
| Hungary | 1941 | x | x | x |
| Ireland | 1946 | x | – | x |
| Italy | 1936 | – | x | – |
| Luxembourg | 1947 | x | x | – |
| Netherlands | 1947 | x | x | – |
| Norway | 1946 | x | x | – |
| Poland | 1931 | x | x | x |
| Portugal | 1940 | x | x | – |
| Romania | 1930 | x | x | x |
| Spain | 1940 | x | x | – |
| Sweden | 1945 | x | x | – |
| Switzerland | 1941 | x | x | x |
| United Kingdom | | | | |
| England and Wales | 1931 | x | x | x[1] |
| Northern Ireland | 1937 | x | – | – |
| Scotland | 1931 | x | x | x |
| USSR | 1939 | – | x | x |
| Yugoslavia | 1931 | x | x | . . |
| OCEANIA: | | | | |
| Australia | 1947 | x | x | – |
| New Zealand | 1945 | x | – | – |

[1] The question on language was asked only in selected areas in which languages other than English are generally spoken.

### 2. Analysis of migration

A classification of the population of a given area by place of birth makes possible a crude measure of the volume and sources of migration into the area during an indefinite number of prior years. The classification by *country of birth* shows the number of surviving immigrants born in each foreign country, while the figures on *place of birth within the country* where the census is taken show the residuum of internal migration to each geographical subdivision from other parts of the country.

The measures of immigration and internal migration obtained in this way are very crude because they do not take account of migrants having died between the time of migration and the date of the census, of those having returned to their places of birth or moved on to other areas, after migrating to the area in question, or of previous migrations between the time of birth and the time of entering the given area. Thus they do not show the amount of migration to or from any particular area, within any given time.

Migration measures from this source may be refined if data are available from a series of censuses. In that case, the change between two successive censuses in the number of natives of a given area living in another area (interpreted with allowance for mortality) gives an indication of the amount of migration from the former to the latter area during the interval. The allowance for mortality can be made most accurately if the statistics on place of birth are classified by sex and year of birth or age groups. Even with this refinement, however, the migration measures thus obtained are imperfect because return movement of persons having previously migrated between the two areas cannot be taken into account.

Another means of refining migration analyses based on birthplace data is to obtain, for each person born in one area and living in another, the date of arrival in the area of present residence, or the date of departure from the place of birth. This method, however, requires an additional question on the census schedule, and a question on date of migration is a relatively difficult one.

The question on birthplace, by making it possible to derive separate data for the native and the foreign-born population, greatly enhances the value of the census statistics as materials for the analysis of factors of population change. In this connexion it may be mentioned that for analysing fertility by means of ratios of children to women of child-bearing ages, as enumerated in the census, it is desirable to have separate data not only for native and foreign-born women and children, but also data for children of native and foreign-born mothers.

### 3. Legal records

In many countries the census schedules have important uses as legal records, for example, in the proof of identity and parentage, age, etc. A record of birthplace is useful in this connexion.

## B. Data on birthplace recommended by international agencies

At its third session the Population Commission made the following recommendations regarding the types of data on birthplace which should be obtained in population censuses in and around 1950:[1]

"Data on place of birth should show (*a*) whether or not a native of the country where the census is taken, and (*b*) if not, the country of birth, according to the national boundaries existing at the time of the census. Governments are urged to adopt whatever measures may be feasible to assure an accurate classification by country of birth in cases where national boundaries have been greatly altered.

"In those countries where it is considered feasible to extend the inquiry on this subject, data should be obtained on place of birth for natives by geographical subdivisions."

At its fourth session the Commission proceeded to make suggestions regarding the manner of tabulating the results of questions on this subject, as follows:[2]

"It is desirable that the tabulations of data on place of birth show at least the two major categories (*a*) persons born in the country where the census is taken, and (*b*) persons born in other countries. The number of persons in each of these categories should be tabulated by sex for the age groups . . . [under 1 year, single years 1 to 4, and 5-year groups from age 5 to the end of life.]

"It is desirable that, where immigration rates are high, the data for each of these categories be tabulated also in relation to such characteristics as marital status, economic and social characteristics, urban-rural residence, education or literacy and birthplace of spouse.

[1] *Report of the Population Commission (third session)* (*op. cit.*), p. 17.

[2] *Report of the fourth session of the Population Commission* (*op. cit.*), pp. 26-27.

"In addition, a tabulation of the foreign-born population by country of birth is desirable. In this tabulation the classification of countries should be in accordance with the most recent list of nations and non-self-governing territories established by the United Nations Statistical Office for international compilations of statistics. The tabulation should show at least the total number born in each country for which the number is large enough to be significant. Where it is necessary to combine countries because the numbers are small, such combinations should be made within the same continent (according to the continental classification of countries used by the United Nations Statistical Office), so that the results can be used for the study of inter-continental migrations.

"Where it is feasible to make detailed tabulations, the tabulations described . . . [on marital status, economic and social characteristics, etc.] may be made also for those specific countries of birth which are numerically most important.

"In some censuses data on the locality of birth within the country where the census is taken are obtained for persons born within that country. In such cases, it is desirable that the tabulations show for each province, state, commune, or other area designated in the questions on place of birth (i) the number of persons born in that area and (ii) the number born elsewhere in the country."

The Committee on the 1950 Census of the Americas placed greater emphasis than the Population Commission on data concerning locality of birth within the country for natives, and less upon the standard definition of country of birth in terms of the boundaries at the time of the census. The recommendations on types of questions relating to birthplace adopted at the second session of the Committee were:[3]

"For the native-born, the largest territorial division should be indicated, as State, Department, Province, etc. For the foreign-born, there should be shown (*a*) the country of birth as declared, or (*b*) the country of birth according to the national boundaries existing at the time of the census — whichever the country may prefer."

With reference to the tabulations of data on this subject the minimum recommended by the Committee on the 1950 Census of the Americas was considerably less than the tabulations mentioned by the Population Commission as desirable. The Committee's recommendation was:[4]

"a. The native and foreign-born population should be tabulated by sex according to the following age groups: under 1; 1 - 4 years; and by 5-year intervals through 84 years, with a final age group of 85 years and over.

"b. The foreign-born population should be tabulated according to country of birth, by sex."

## C. Types of data on birthplace obtained in recent censuses

### 1. Data on nativity

The simplest type of question on birthplace that may be asked in a population census is whether or not each individual was born in the country where the census is taken. This question yields a classification which may be designated for simplicity as "nativity". Both the Population Commission and the Committee on the 1950 Census of the Americas have emphasized the importance of this dichotomy. It serves adequately one of the major purposes of the data, namely, to provide a basis for analysing the factors of population change in the manner discussed in part A. A question of this type may be feasible for censuses in which detailed inquiries regarding place of birth are considered too difficult. It gives only the rudiments, however, of data that are desirable for the analysis of ethnic groups and of migration, and for legal records as to place of birth.

### 2. Classifications of the foreign-born by country of birth

In most of the censuses examined for this study, where any data have been obtained on place of birth, the questions have called for the country of birth of persons born outside the country where the census is taken, as recommended by the Population Commission and the Committee on the 1950 Census of the Americas (see table 13). This question provides the information required for the majority of uses of birthplace data, so far as the foreign-born are concerned. In the census of Portugal (1940), however, place of birth was asked only of nationals, while in the census of Panama (1940) the birthplace question was limited to place of birth within the country for natives. The latter method may be adequate in countries where the foreign-born make up only a very small proportion of the population.

[3] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . . (op. cit.)*, p. 22.

[4] *Ibid.*, p. 29.

## Table 13. Types of questions on place of birth asked in recent censuses

(This table is limited to censuses where some data on birthplace were obtained. "x" indicates that the given type of question was asked or that the given classification could be derived from the questions asked; "–" that it was not asked or could not be derived; ".." that information on the types of questions asked was not available or was not complete)

| Country | Census year | Place of birth of natives | | Place of birth of foreign-born persons | | | Birthplace of parents |
|---|---|---|---|---|---|---|---|
| | | Major subdivision | Locality | Country | Major subdivision | Locality | |
| AFRICA: | | | | | | | |
| Egypt | 1947 | x | – | x | – | – | – |
| Union of South Africa | 1946 | x | – | x | – | – | – |
| AMERICA: | | | | | | | |
| Argentina | 1947 | x | – | x | – | – | x |
| Brazil | 1940 | x | – | x | – | – | x |
| Canada | 1941 | x | – | x | – | – | – |
| Chile | 1940 | x | – | x | – | – | – |
| Costa Rica | 1927 | x | – | x | – | – | – |
| Cuba | 1943 | x | x | x | – | – | x |
| Guatemala | 1940 | x | x | x | – | – | – |
| Mexico | 1940 | x | – | x | – | – | – |
| Nicaragua | 1940 | x | – | x | – | – | – |
| Panama | 1940 | x | – | – | – | – | – |
| Paraguay | 1936 | x | x | x | x | x | – |
| Peru | 1940 | x | – | x | – | – | – |
| United States of America | 1940 | x | – | x | – | – | x[1] |
| Venezuela | 1941 | x | – | x | – | – | – |
| ASIA: | | | | | | | |
| India | 1941 | x | x | x | – | – | – |
| Japan | 1940 | x | x | x | – | – | – |
| Syria | 1947 | x | .. | x | .. | .. | .. |
| Turkey | 1940 | x | x | x | – | – | – |
| EUROPE: | | | | | | | |
| Austria | 1934 | x | x | x | x | x | – |
| Belgium | 1947 | x | x | x | x | x | – |
| Bulgaria | 1946 | x | x | x | x | x | – |
| Denmark | 1940 | x | x | x | – | – | – |
| Finland | 1940 | x | .. | x | .. | .. | .. |
| France | 1946 | x | x | x | – | – | – |
| Germany | 1939 | .. | .. | .. | .. | .. | .. |
| Greece | 1940 | x | x | x | – | – | – |
| Hungary | 1941 | x | x | x | x | x | – |
| Ireland | 1946 | x | –[2] | x | – | – | – |
| Luxembourg | 1947 | x | x | x | x | x | – |
| Netherlands | 1947 | x | x | x | x | x | – |
| Norway | 1946 | x | x | x | – | – | – |
| Poland | 1931 | x | x | x | – | – | – |
| Portugal | 1940 | x | x | x[3] | – | – | – |
| Romania | 1930 | x | x | x | – | – | – |
| Spain | 1940 | x | – | x | – | – | – |
| Sweden | 1945 | x | x | x | x | x | x |
| Switzerland | 1941 | x | x | x | x | x | – |
| United Kingdom | | | | | | | |
| England and Wales | 1931 | x | x | x | x | x | – |
| Northern Ireland | 1937 | x | x | x | – | – | – |
| Scotland | 1931 | x | x | x | x | x | – |
| Yugoslavia | 1931 | x | x | x | .. | .. | .. |
| OCEANIA: | | | | | | | |
| Australia | 1947 | x | – | x | – | – | – |
| New Zealand | 1945 | – | – | x | – | – | – |

[1] The state of birth was to be given for parents who were natives of the United States; for the foreign-born, the country of birth was to be given.

[2] Persons born in county-boroughs were asked to specify the county-borough.

[3] This question was asked of Portuguese nationals only.

A most difficult problem is to obtain accurate and consistent data for persons born in countries the boundaries of which have changed since the time of birth. Many persons are likely to report their country of birth according to the boundaries which existed at the time of birth, or at the time of emigration, even though their birthplace may since have become a part of another country. In some censuses an attempt has been made to prevent this by instructing enumerators or respon-

dents to give the country in accordance with the boundaries as of some specific date. For example, in the 1941 census of Canada, the country was to be given according to the boundaries of 1936; in the 1940 census of the United States, the date specified was 1 January 1937. The Population Commission recommended that the data refer to the boundaries as of the census date. However, the Commission implicitly recognized the difficulty of obtaining data on this basis, when it urged Governments to adopt whatever means might be possible to that end. Perhaps partly because of this practical difficulty the Committee on the 1950 Census of the Americas preferred to leave to the discretion of each country the choice between a classification relating to boundaries at the census date, and one based on the country declared by the respondent.

One may presume that an instruction to report the country of birth according to boundaries as of a specified date will not be sufficient to guarantee consistency of returns, because the instruction is likely to be overlooked in many instances, and because the respondent may not be accurately informed as to the country in which the place of birth was included on the given date. An alternative method which might be more effective, though it is much more difficult, is to obtain information on the specific locality within the foreign country where the person was born, so that the classification by countries as constituted at a given time can be made in the central office. This method is discussed further in section 4, below.

A special problem arises in the case of persons born at sea. In a number of censuses (for example, those of Canada in 1941, the United States in 1940 and the United Kingdom in 1931) the instructions called for reporting such persons with a special designation. In these three censuses, the persons born at sea were included in the tabulations for the foreign-born.

### 3. Data on locality of birth for natives

In many recent censuses, the inquiry on birthplace has shown also, for the native population, the province or other major geographical subdivision of the country or even the city, town or other particular locality in which the individual was born (see table 13). As indicated above, the results of such questions are valuable for the analysis of internal migration, especially if the census is taken on a *de jure* basis (see part D).

Census questions on birthplace for natives refer in most cases to major geographical subdivisions of the country, though in some cases more detailed information on the locality of birth is required. The more detailed the questions the more useful the results for legal records and for analyses of internal migration. Where data on the specific locality of birth are required, it is necessary to make clear whether the returns should refer to the place where the birth actually occurred or to the place of the parents' residence at the time of birth. This distinction is most important in countries where the proportion of births occurring in hospitals or other institutions is large or has greatly changed in past years. Under those conditions, it would appear that the question may best refer to the place of residence of the parents (as in the 1946 census of Norway), if the results for individual small areas or for urban and rural areas are to be used for analysis of internal migration or of ethnic groups.

### 4. Data on locality of birth for the foreign-born

In a number of countries it has been the practice in recent censuses to obtain data on the specific locality of birth, not only for natives of the country in question, but also for persons born in other countries (see table 13). These data are especially useful in two types of circumstances: (1) in cases of changed boundaries, the specification of the exact locality of birth may give the necessary basis for an accurate classification according to the new boundaries; (2) for countries where the characteristics of the people vary greatly from one part of the country to another, data on the locality of birth may be very useful in connexion with analyses of ethnic groups.

Information as to exact place of birth of the foreign-born, however, is comparatively difficult to obtain with accuracy, even where the census data are collected by enumerators. The enumerator, not having a detailed knowledge of the geography of the country in question, may not be in a position to know whether or not the answer offered by a respondent is sufficiently exact, and not knowing the language of that country, he may make gross errors in recording the information given. There is also a very difficult problem involved in the processing of the returns in the central office. In many cases, laborious search through available maps and lists of populated places may be necessary in order to find out in what part of the country a given locality designated as the birthplace is located. The difficulty would be reduced by limiting the inquiry as to exact place of birth to persons born in a

selected list of countries; for example, those having undergone major changes in boundaries during the preceding seventy or eighty years. So far as enumerators are concerned, however, the simplification resulting from this limitation would be partly offset by the necessity of bearing in mind the list of countries for which detailed reports were required.

It should be noted that in censuses taken in those countries which have been affected by such changes in boundaries, it may be necessary for the sake of accurate data on natives of the country as presently constituted, to ask detailed questions on locality of birth both for persons stating that they are natives of the country and for those reporting that they were born in the neighbouring country or countries involved in the boundary changes.

## D. Tabulations of data on nativity and country of birth

### 1. Coverage of tabulations

In most of the censuses examined for this report, the tabulations of data on nativity and country of birth have covered all of the enumerated population. In those cases where the tabulations have been restricted to certain classes of population, the restrictions have not been such as to seriously affect the comparability of the results with data for other countries. In the 1941 census of Venezuela and the 1940 census of Portugal the distinction between the native and foreign-born populations was made only for citizens. Place of birth of aliens was not tabulated at all. For practical purposes, however, it could be assumed that all aliens in Venezuela were foreign-born, for according to the Constitution in effect at that time, all persons born in Venezuela were citizens by birth. Furthermore, the tabulations showed all naturalized nationals as being foreign-born. In Portugal, however, a person born in the country whose father is an alien, may elect either Portuguese citizenship or that of his father. In the 1940 census of the United States, although summary data showing the distinction between native and foreign-born were tabulated for the total population, the more detailed tables on nativity in relation to other characteristics, as well as data on the country of birth of the foreign-born and birthplace of parents, were tabulated only for the white population. This was done because the majority of the Negroes in the country are of old native stock and the foreign stock of other non-white races is usually indicated by their racial designation.

More important from the standpoint of international comparability are the limitations in coverage of the birthplace tabulations which may result from the omission of certain groups from the population enumerated in the census. Where the census is taken on a *de jure* basis, non-residents only temporarily present in the country are omitted, and these non-residents are for the most part foreign-born. Thus nativity and country of birth statistics obtained in a *de jure* census may differ considerably from those which would be obtained if the enumeration covered all persons present in the country at the time of the census. In addition, failure to enumerate certain elements of the population such as aboriginal tribes, and the incomplete enumeration of such groups as infants and young adults, may have an important effect on the results of inquiries on place of birth.

### 2. The classification of countries of birth

The classification by nativity can be regarded as a much abbreviated grouping of data on country of birth. For many kinds of analysis this classification is manifestly inadequate; for example, studies of ethnic groups on the basis of birthplace data generally require tabulations showing each country of birth separately, rather than the entire foreign-born population as a unit. However, considerations of time and expense commonly prohibit the tabulation of all relevant census data for persons born in each separate country, and necessitate the use of the simpler classification by nativity for some of the tabulations in this field. In some censuses (for example, that of the United States in 1940) the great majority of the tabulations derived from the questions on birthplace have been made in terms of the nativity classification, the detailed classification by country of birth being employed only in a few tables where the cross-classifications were relatively simple. In two censuses, as already pointed out, the data required for tabulations of the foreign-born by country of birth were not obtained on the schedules, the questions being limited to birthplace of natives or of nationals. In a few others, the tabulations showed only the nativity classification although data on country of birth of the foreign-born were obtained on the schedules: e.g., Mexico (1940), the Netherlands (1930) and Peru (1940). However, in most censuses where data on birthplace have been obtained, at least the total numbers of persons reported as

born in various foreign countries have been tabulated.

A primary requirement for international comparability in tabulations of country of birth is uniformity in the classification of countries. This depends in the first place upon a uniform definition of national boundaries; that problem has been discussed in a previous section of this chapter.

Another problem arises from the fact that in some cases the designations used to refer to country of birth do not have standard uniformly understood meanings. In the reports of the censuses of various countries there is evidence of differences in understanding of the areas included in certain countries, as well as confusing differences in the terms used to refer to them. The Statistical Office of the United Nations has prepared a standard nomenclature of geographical areas, for presenting statistical data in international publications.[5] The countries are grouped by continents, with an indication of their political status. The use of this list as a basis for census tabulations of data on country of birth, as recommended by the Population Commission, would contribute materially to international comparability.

Still another problem is the grouping together of countries not shown separately in the birthplace classifications. Such combinations hamper international comparisons and limit the usefulness of results for national purposes. However, some combinations are necessary, for there may be many countries from which the number of immigrants is too small to justify separate tabulations. It has been common practice to combine in a single, miscellaneous group all countries not classified separately. This practice is particularly damaging to international comparability. In order to improve comparability, the Population Commission recommended that, where combinations were necessary, they be made only within the same continent.

In addition to the continental groupings, groupings of countries into homogenous areas within continents are useful in connexion with the birthplace tabulations, as well as for many other purposes. Such groupings may be established on several different bases, including physiographic boundaries, ethnic, linguistic, or economic similarities, and in the case of non-self-governing areas, political dependency. Some such groupings have been used for the birthplace tabulations in a few recent censuses. In the 1940 census of the United States, for example, European countries were grouped as belonging to either North-west, Central, Eastern, Southern or Other Europe. Persons born in European countries which were not separately listed in given tabulations were assigned to one or another of these regions. The grouping used in the United States census is shown below:

*North-western Europe:* England, Scotland, Wales, Northern Ireland, Irish Free State (Eire), Norway, Sweden, Denmark, Iceland, Netherlands, Belgium, Luxembourg, Switzerland, France.

*Central Europe:* Germany, Poland, Czechoslovakia, Austria, Hungary, Yugoslavia.

*Eastern Europe:* Russia (USSR), Latvia, Estonia, Lithuania, Finland, Romania, Bulgaria, Turkey in Europe.

*Southern Europe:* Greece, Italy, Spain, Portugal.

*Other Europe:* (Including Albania)

*Asia:* Palestine, Syria, Turkey in Asia, Other Asia.

*America:* Canada-French, Canada-Other, Newfoundland, Mexico, Cuba, other West Indies, Central America, South America.

*All other:* Australia, Azores, other Atlantic Islands, all other and not reported.

In the Indian census of 1931, countries of birth were listed by continent, but within each continent they were further subdivided into countries within and outside of the British Empire, in the following manner:

*India:* Each province (15 provinces specified); each state or agency (19 areas specified); French and Portuguese settlements; India, unspecified.

Other Asiatic countries within British dominions (9 countries specified).

Other Asiatic countries outside British dominions (24 countries specified).

Asia, unspecified.

Europe within British dominions (9 countries specified).

Europe outside British dominions (24 countries specified).

Europe, unspecified.

Africa within British dominions (12 countries specified).

Africa outside British dominions (5 countries specified).

Africa, unspecified.

America within British dominions (6 countries specified).

[5] United Nations Statistical Office. *Nomenclature of Geographic Areas for Statistical Purposes.* Statistical Papers, Series M, No. 1. 1 Jan. 1949.

America outside British dominions (8 countries specified).

America, unspecified.

Australia (4 countries specified).

Australia, unspecified.

At sea.

Unspecified.

### 3. Tabulations of nativity and country of birth in relation to other characteristics

(a) *Sex and age.* The classification by sex and age of the native population and of the foreign-born population can be regarded as one of the most essential types of census tabulations for the purpose of analysing the factors of population change. By isolating the native population for separate study, this tabulation makes it possible to analyse the changes from one census date to another in the numbers of people of corresponding sex-age classes at successive census dates, due to mortality and to emigration. Similarly, the data for the foreign-born can be used to estimate the numbers of male and female immigrants of various ages entering the country during the intercensal period,[6] and the numbers dying during the interval. These data are especially valuable for countries where the registers of immigration and emigration do not provide detailed or trustworthy statistics on the numbers and characteristics of persons entering and leaving the country,[7] or where the registration of births and deaths is deficient.

In addition, the statistics on sex and age of the native and foreign-born populations are valuable for studying the impact of immigration on the structure and potential future growth of the population as a whole, the potential contribution of the immigrants to the labour force, and their influence on the ratio between breadwinners and dependants. The data are also relevant to the study of problems of assimilation, since immigrant men of working age and children of school age are likely to come into closer contact with the native population and thus to be assimilated more quickly than women, who are occupied chiefly with home duties. The Population Commission and the Committee on the 1950 Census of the Americas recognized the special importance of tabulations of data on nativity by sex and age, in suggesting that at least the total numbers of natives and foreign-born persons, of each sex, be tabulated by detailed age groups. The Population Commission also called attention to the desirability of carrying out such a tabulation for the foreign-born by specific countries of birth, where feasible.

Table 14 shows that tabulations of native and foreign-born by sex have been presented in all but one of the censuses examined in which any distinction at all was made according to place of birth in the tabulations. However, further cross-classification by age was found in only thirteen of the censuses. Nine of these gave at least fairly detailed data on country of birth by sex and age.

For the analyses of the elements of population change, described above, data for the native and foreign-born by detailed age groups are needed, so as to permit the matching of population cohorts at one census date with the corresponding groups at preceding census dates. The Population Commission recommended that the nativity data be tabulated by single years of age under five, and by five-year groups from that age to the end of life; and the Committee on the 1950 Census of the Americas adopted nearly as detailed a grouping as its recommended minimum. In the detailed tabulations by country of birth, however, broader age groups may be required for the sake of economy.[8]

Among the censuses giving tabulations of country of birth or nativity by age, there was a noticeable amount of variation in the age groupings as shown in table 15. The quinquennial age groupings recommended by international agencies were tabulated, over the greater part of the life span, in seven censuses. The census of Norway (1930), divided the population only into those under 15 and 15 and over; New Zealand (1936) used ten-year age groupings beginning with age 35; Brazil (1940) and Venezuela (1941),[9] used ten-year groups exclusively; and Ireland (1936) used the age groups 0-11, 12-15, 16-19, 20-24, 25-34, 35-44, 45-54, 55-59, 60-64, 65-69 and 70 and over.

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[6] In the censuses of Australia (1933), Canada (1941), New Zealand (1936), Northern Ireland (1937), Scotland (1931) and the Union of South Africa (1936), a direct approach to the measurement of immigration was made by tabulating census data on either the period of immigration or the length of residence in the country of immigrants. With the exception of Northern Ireland, in the censuses of all these countries the data were cross-tabulated with country of birth.

[7] *Cf.* United Nations. Department of Social Affairs. *Problems of Migration Statistics.* Series A, Population Studies, No. 5, 1950. chapter II.

[8] The 1932 International Conference of Migration Statisticians recommended a five-year age distribution which would make possible comparisons between migration statistics and estimates of migration based on census data. For details see: International Labour Office, *International Standardization of Labour Statistics,* Studies and Reports, Series N, No. 25. 1943. p. 146.

[9] In the census of Venezuela, ages 0-4 and 5-9 were shown for the aliens among the foreign-born.

## Table 14. Types of cross-tabulations presented with data on nativity or country of birth in recent censuses

(This table is limited to censuses where some data on nativity or country of birth were obtained. "A" indicates that the given data were tabulated separately for natives and foreign-born only; "B" that they were tabulated for foreign-born by country of birth; "–" that they were not tabulated; ".." that information on tabulations was not available or was not complete. "*" that the census year is different from that shown in table 12)

| Country | Census year | Sex | Age by sex | Marital status | Occupation or industry | Urban-rural residence |
|---|---|---|---|---|---|---|
| AFRICA: | | | | | | |
| Egypt | 1937* | – | – | – | – | – |
| Union of South Africa | 1936* | B | B | – | – | B |
| AMERICA: | | | | | | |
| Argentina | 1947 | .. | .. | .. | .. | .. |
| Brazil | 1940 | A | A | .. | .. | .. |
| Canada | 1941 | B | B | B | B[2] | B |
| Chile | 1940 | .. | .. | .. | .. | .. |
| Costa Rica | 1927 | B | .. | .. | .. | .. |
| Cuba | 1943 | B | – | – | – | –[3] |
| Guatemala | 1940 | – | – | – | – | – |
| Mexico | 1940 | A | – | – | – | –[4] |
| Nicaragua | 1940 | .. | .. | .. | .. | .. |
| Panama | 1940 | A | – | – | A | A |
| Paraguay | 1936 | .. | .. | .. | .. | .. |
| Peru | 1940 | A | – | – | – | – |
| United States of America | 1940 | B[5] | A[6] | A | A | B[5] |
| Venezuela | 1941 | A[7] | A[8] | – | – | – |
| ASIA: | | | | | | |
| India | 1931* | B | – | – | – | – |
| Japan | 1940 | .. | .. | .. | .. | .. |
| Syria | 1947 | .. | .. | .. | .. | .. |
| Turkey | 1935* | B | – | – | – | –[9] |
| EUROPE: | | | | | | |
| Austria | 1934 | B | – | – | – | – |
| Belgium | 1930* | B | – | – | – | B[10] |
| Bulgaria | 1934* | B | – | – | – | B |
| Czechoslovakia | 1930 | .. | .. | .. | .. | .. |
| Denmark | 1940 | B | – | – | – | B |
| Finland | 1940 | B | – | – | – | B |
| France | 1946 | .. | .. | .. | .. | .. |
| Germany | 1939 | .. | .. | .. | .. | .. |
| Greece | 1940 | .. | .. | .. | .. | .. |
| Hungary | 1941 | .. | .. | .. | .. | .. |
| Ireland | 1936* | B | B[11] | – | B[11] | B |
| Luxembourg | 1935* | B | – | – | – | – |
| Netherlands | 1930* | A | – | – | – | A[12] |
| Norway | 1930* | B | B | – | – | B |
| Poland | 1931 | – | – | – | – | – |
| Portugal | 1940 | A[13] | – | – | – | – |
| Romania | 1930 | A[14] | – | – | – | A[14] |
| Spain | 1940 | B | – | – | – | – |
| Sweden | 1945 | A | A | – | – | A |
| Switzerland | 1941 | B | – | – | – | – |

[1] Data on country of birth were tabulated without any cross-classifications.

[2] Countries of birth were classified into five categories: Canada, British Isles and possessions, United States, Europe, and Asia.

[3] Data on country of birth were tabulated separately for individual cities of over 5,000 population.

[4] Data on nativity were tabulated separately for individual localities of over 10,000 population.

[5] Data by country of birth were tabulated for the white population only. For the non-white population, data were tabulated by nativity.

[6] This cross-tabulation was presented for the white population only. Data on sex and age of the white population were also tabulated by country of birth of parents.

[7] Data by nativity were tabulated only for nationals. Since however, all naturalized persons were tabulated as foreign-born, it may be assumed that almost all aliens were foreign-born.

[8] Data were tabulated separately for natives, naturalized, and aliens. All the naturalized were tabulated as foreign-born, and it can be assumed that almost all aliens were foreign-born. The data for the small number of foreign-born persons who were nationals by virtue of the nationality of one or both of their parents can be secured as a residual.

[9] Data on country of birth were tabulated for the totals of localities under and over 10,000 population.

[10] Data on country of birth were tabulated separately for six size groups of communes.

[11] Birthplaces were classified into the following categories: Ireland, Northern Ireland, England and Wales, Scotland, United States, elsewhere. In cross-tabulations with sex and age, the United States was not specified.

[12] Data on nativity were tabulated separately for eight size groups of communes.

[13] Data by nativity were tabulated only for nationals.

[14] Three categories of birthplaces were tabulated: (*a*) Romania; (*b*) Austria, Germany, Greece or Italy; (*c*) other countries.

## Table 14. Types of cross-tabulations presented with data on nativity or country of birth in recent censuses (cont.)

(This table is limited to censuses where some data on nativity or country of birth were obtained. "A" indicates that the given data were tabulated separately for natives and foreign-born only; "B" that they were tabulated for foreign-born by country of birth; "–" that they were not tabulated; ".." that information on tabulations was not available or was not complete. "*" that the census year is different from that shown in table 12)

| *Country* | *Census year* | *Sex* | *Age by sex* | *Marital status* | *Occupation or industry* | *Urban-rural residence* |
|---|---|---|---|---|---|---|
| United Kingdom | | | | | | |
| England and Wales | 1931 | B | B[15] | B[16] | – | – |
| Northern Ireland | 1937 | A[17] | – | – | – | A |
| Scotland | 1931 | B | B[15] | B[15] | – | – |
| Yugoslavia | 1931 | B | B | .. | .. | .. |
| OCEANIA: | | | | | | |
| Australia | 1933* | B | B | B | A | B |
| New Zealand | 1936* | B | B | B | B | B |

[15] Data by country of birth of the foreign born were tabulated only for persons of alien or unknown nationality and for nationals born in the United Kingdom or in Ireland. Other foreign-born nationals were separated into those born in countries of the Empire and those born in foreign countries.

[16] Data by country of birth of the foreign born were tabulated only for persons of alien or unknown nationality. Data by nativity were tabulated for the total population.

[17] Countries of birth were shown separately only for persons born in the British Empire. Other countries were grouped together under one heading.

## Table 15. Age classifications used in cross-tabulations of sex and age with data on nativity or country of birth in recent censuses

(This table is limited to censuses for which tabulations on nativity or country of birth by sex and age were available. "A" indicates that the specified age groupings were tabulated separately for native and foreign-born only; "B" that they were tabulated for foreign-born by country of birth; "–" that no age groupings of the specified type were shown; "*" that the census year is different from that shown in table 12)

| *Country* | *Census year* | *Type of data* | *Age range covered by 5-year groups (or by groups convertible to 5-year groups)* | *Other age groups tabulated* |
|---|---|---|---|---|
| AFRICA: | | | | |
| Union of South Africa | 1936* | B | 0 to 99[1] | 100 and over[2] |
| AMERICA: | | | | |
| Brazil | 1940 | A | .. | 10-year groups, 0 to 99; 100 and over |
| Canada | 1941 | B | 0 to 89 | 90 and over |
| United States of America | 1940 | A | 0 to 74 | 75 and over[3] |
| Venezuela | 1941 | A | 0 to 9[4] | For natives, 10-year age groups 0 to 49; 50 and over. For foreign-born 10-year groups 0 to 69; 70 and over[5] |
| EUROPE: | | | | |
| Ireland | 1936* | B | 20-24, 55 to 69 | 0-11, 12-15, 16-19, 25-34, 35-44, 45-54, 70 and over |
| Norway | 1930* | B | – | Under 15, 15 and over |
| Sweden | 1945 | A | 0 to 79 | 80 and over |
| United Kingdom | | | | |
| England and Wales | 1931 | B[6] | 0 to 79 | 80 and over |
| Scotland | 1931 | B[6] | 0 to 84 | 0, 1-4, 85 and over |
| Yugoslavia | 1931 | B | – | 0-14, 15-24, 25-59, 60 and over |
| OCEANIA: | | | | |
| Australia | 1933* | B | 0 to 99 | 100 and over |
| New Zealand | 1936* | B | 0 to 34 | 20, 21-24, 10-year age groups, 35 to 74, 75 and over[7] |

[1] For the Bantu population, ages were tabulated only in ten-year groups from 0-99, 100 and over.

[2] Single years of age were tabulated for the non-Bantu population only.

[3] For the white population only, single years of age from 35 to 99 were also tabulated.

[4] These age groups were tabulated for aliens only.

[5] Data were tabulated separately for natives, naturalized and aliens. All the naturalized were tabulated as foreign-born, and it can be assumed that almost all aliens were foreign-born. The data for the small number of foreign-born persons who were nationals by virtue of the nationality of one or both of their parents can be secured as a residual.

[6] Data by country of birth of the foreign-born were tabulated only for persons of alien or unknown nationality and for nationals born in countries of the United Kingdom or in Ireland. Other foreign-born nationals were separated into those born in countries of the Empire and those born in foreign countries.

[7] For natives only, single years of age from 0 to 99 were tabulated.

(b) *Other characteristics.* The usefulness of data on nativity and country of birth for studies of population dynamics, of the economic and social status and cultural attributes of immigrants, and of their problems of assimilation in a strange country, is much enhanced if the data are tabulated in relation to other population characteristics, in addition to sex and age. Characteristics which were mentioned by the Population Commission as especially important in this connexion are marital status, urban and rural residence, economic and social characteristics, education and literacy, and birthplace of spouse. Classifications of birthplace in relation to language and nationality also have a special value as a means of analysing ethnic groups. The extent to which various cross-classifications have been made in recent census tabulations on nativity and country of birth is shown in table 14.

The classification by marital status is an especially valuable supplement to tabulations of nativity or country of birth by sex and age groups, for the purpose of analysing the effects of immigration on the birth rate and natural growth of the population. Analyses of any differences between the birth rates of the native population and of various foreign-born groups, and of their possible implications for future population trends, depend upon knowledge of the percentages of married men and women at each age level in the native as compared with the foreign-born population. Data on this subject are also directly relevant to studies of assimilation problems and to analyses of the effects of immigration on the growth of the economically active population and of dependent groups.

Data on marital status have usually been tabulated in relation to nationality rather than place of birth. Only in six of the censuses studied, as shown in table 14, were marital status data tabulated in relation to birthplace. In five of these, the foreign-born were tabulated to varying extents by country of birth. In the United States census (1940) such data were made available only by nativity.

Of the six censuses showing data on marital status by nativity or country of birth, three presented these data in detail by sex and age groups: these were the censuses of England and Wales (1931), Scotland (1931) and the United States (1940).[10] In these censuses the data were tabulated for each sex by five-year age groups, and in some cases by finer groupings for parts of the age range. In the census of Australia (1933), the data on marital status in relation to birthplace were shown only for the age groups under fifteen and fifteen and over, by sex; in that of New Zealand (1936), they were restricted to the population of each sex, sixteen years of age and over, without further classification by age; and in the census of Canada (1941) they were shown for the total population of each sex, without regard to age.[11] The omission of the classification by age, or the use of very broad groups, greatly restricts the usefulness of the data and makes them inadequate for the types of analyses mentioned in the preceding paragraph.

A classification by urban or rural residence is useful for many of the applications of data on nativity or country of birth. The pattern of urban-rural settlement of immigrants from various countries is directly relevant to problems of economic adjustment and assimilation. International comparability of birthplace data for urban and rural areas depends, of course, on the solution of the problems of attaining comparable definitions of such areas (see chapter XVI). A number of countries have employed an urban-rural classification in tabulations of birthplace data. The censuses of Australia (1933), Belgium (1930), Bulgaria (1934), Canada (1941), Denmark (1940), Ireland (1936), Finland (1940), New Zealand (1936), Northern Ireland (1937), the Netherlands (1930), Norway (1930), Panama (1940), Romania (1930), Sweden (1945), the Union of South Africa (1936) and the United States (1940), all included data on place of birth for urban and rural populations. Several other censuses included separate tabulations on place of birth, for larger cities. The classification of the population into urban and rural groups is sometimes used as a primary subdivision, within which further classifications of birthplace data according to other characteristics are tabulated.

It has already been pointed out that data on sex, age, marital status and urban-rural residence in relation to nativity or country of birth are valuable for the study of the effects of immigration on the trends of the economically active population. However, an adequate measure of the impact of immigration on the size and composition of the labour force can be obtained only from data on economic activities of the natives and the foreign-born. Tabulations of data on the economically active population by nationality are

[10] In the United States census such data were tabulated only for the white population fifteen years old and over, by nativity.

[11] The Canadian census, however, showed a tabulation of age at first marriage by age at the census date, for all women ever married, by place of birth.

more usual than by nativity or country of birth. In only six of the censuses studied were the latter tabulations made (see chapter XIII).

Data on social characteristics such as literacy or educational level, income, and value and tenure of the home also provide means of evaluating the living standards of various immigrant groups and comparing them with the native population and with the population in the countries of origin. It should be understood, of course, that differences in the economic and social status of various nativity and country-of-birth groups may be the result of selective restrictions on immigration and of the types of opportunities which are open to immigrants in the country of adoption. Classifications by literacy, education, income, value of home, etc., like those by economic activities, have been made more commonly in tabulations of nationality than of birthplace data. Such classifications in birthplace tabulations have appeared in the reports of the censuses of Australia (1933) and the United States (1940).

The Australian census contained a tabulation of breadwinners classified by income, sex and birthplace. The United States census gave data on years of school completed, by nativity, for persons twenty-five years of age and older, with a further subdivision into ten-year age groups for whites. Data on tenure and value or rental of home for families by nativity of the head were tabulated for the white population. For the foreign white stock, similar data were tabulated for individuals by country of birth of their parents.

Classifications by language and nationality may serve to further refine data on ethnic groups derived from birthplace data. The legal nationality of foreign-born aliens and the mother tongue of both foreign-born and natives may indicate ethnic affiliations not shown by birthplace data. On the other hand, data on citizenship and on language currently spoken by the foreign-born may indicate the rapidity of their cultural assimilation. The types of tabulations on these subjects which have been made in recent censuses are discussed in chapters VII and VIII.

## E. Tabulations of data on locality of birth of natives

### 1. Types of classifications by locality of birth

Two main types of classifications of locality of birth have been used in recent population censuses. The type of classification which is more generally used shows the specific locality, usually in terms of major geographic divisions such as provinces, departments and states, but sometimes in terms of smaller areas. The other type of classification merely separates persons born in the locality where enumerated from those born elsewhere. It was the latter which was suggested by the Population Commission as a minimum tabulation in censuses where data on locality of birth were to be obtained. Both types of classification may refer to either the actual place of birth or the place of residence of the parents.

As shown in table 16, in almost all of the censuses giving tabulations of specific locality of birth for natives, the classification of localities was solely in terms of major geographic divisions. In most of these cases the data were presented by area of enumeration in terms of the same geographic divisions. In a few censuses, including those of Denmark (1940), India (1931) and Spain (1940), smaller areas of birth were designated, and cross-tabulated with small areas of residence or location at the time of the census.

In the case of tabulations of locality of birth of natives, the classification by area of enumeration is extremely important. A detailed classification by area of enumeration, in combination with a corresponding classification by place of birth, gives much valuable information about the currents of migration within the country. The value of these data is greatly enhanced by their tabulation for a series of successive census dates, so that trends in the numbers of persons born in certain localities and living elsewhere can be studied. As in the case of country of birth statistics, the measures of migration obtained from such tabulations can be made more precise by introducing cross-tabulations by sex and age. The meaning of these data depends to a considerable extent on the criteria used for enumerating the population in various areas, either on the basis of their actual location (*de facto*) or their place of residence (*de jure*) at the time of the census.

Classifications showing whether or not born in the locality of enumeration were presented in the reports of fifteen of the censuses studied. In the censuses of Austria (1934), Belgium (1930), Finland (1940), Luxembourg (1935), Romania (1930), Switzerland (1941) and Yugoslavia (1931), these date referred to smaller localities of birth and were presented as supplements to tabulations showing birthplace classified by major geographic divisions. For example, the birthplace tabulations in the Swiss census showed, first, for the population enumerated in each canton, the dis-

## Table 16. Tabulations of data on locality of birth of natives in recent censuses

(This table is limited to censuses where some data on locality of birth of natives were obtained. "A" indicates that the specified type of data was tabulated by area of birth; "B" that only a distinction between those born in the area of enumeration or residence and those born elsewhere was tabulated; "–" that the given type of data was not tabulated; ".." that information on tabulations was not available or was not complete; "*" that the census year is different from that shown in table 12)

| Country | Census year | Classification of locality of birth of natives | | Cross-classifications by other characteristics | |
|---|---|---|---|---|---|
| | | By major geographic subdivisions | By smaller localities | Sex | Age by sex |
| AFRICA: | | | | | |
| Egypt | 1937* | A | – | – | – |
| Union of South Africa | 1936* | A | – | A | A |
| AMERICA: | | | | | |
| Argentina | 1947 | .. | .. | .. | .. |
| Brazil | 1940 | A | .. | A | A |
| Canada | 1941 | A | – | A | A |
| Chile | 1940 | .. | .. | .. | .. |
| Costa Rica | 1927 | .. | .. | .. | .. |
| Cuba | 1943 | – | – | – | – |
| Guatemala | 1940 | – | – | – | – |
| Mexico | 1940 | B | – | B | – |
| Nicaragua | 1940 | .. | .. | .. | .. |
| Panama | 1940 | A[1] | – | A[1] | – |
| Paraguay | 1936 | .. | .. | .. | .. |
| Peru | 1940 | A | – | B | – |
| United States of America | 1940 | A | – | A | –[2] |
| Venezuela | 1941 | A | – | A | A |
| ASIA: | | | | | |
| India | 1931* | A | A | A | – |
| Japan | 1940 | .. | .. | .. | .. |
| Syria | 1947 | .. | .. | .. | .. |
| Turkey | 1935* | B | – | B | – |
| EUROPE: | | | | | |
| Austria | 1934 | A | B | A | – |
| Belgium | 1930* | A | B | A | – |
| Bulgaria | 1934* | B | – | B | – |
| Czechoslovakia | 1930 | .. | .. | .. | .. |
| Denmark | 1940 | A | A | A | – |
| Finland | 1940 | A | B | A | – |
| France | 1946 | .. | .. | .. | .. |
| Germany | 1939 | .. | .. | .. | .. |
| Greece | 1940 | .. | .. | .. | .. |
| Hungary | 1941 | .. | .. | .. | .. |
| Ireland | 1936* | A | –[3] | A | B |
| Luxembourg | 1935* | A | B | A | – |
| Netherlands | 1930* | B | B | B | – |
| Norway | 1930* | – | B | – | – |
| Poland | 1931 | – | – | – | – |
| Portugal | 1940 | B | B | B | – |
| Romania | 1930 | A | B | A | – |
| Spain | 1940 | A | A | A | – |
| Sweden | 1945 | B | B | B | B |
| Switzerland | 1941 | A | B | A | – |
| United Kingdom | | | | | |
| England and Wales | 1931 | B | – | B | – |
| Northern Ireland | 1937 | A | – | A | B |
| Scotland | 1931 | A | –[4] | – | – |
| Yugoslavia | 1931 | A | B | .. | .. |
| OCEANIA: | | | | | |
| Australia | 1933* | A | – | A | A |

[1] These data were tabulated for the cities of Colon and Panama only.

[2] There was a separate tabulation for population under five years old, by state of birth, but not by sex.

[3] Certain smaller localities of birth (county-boroughs) were separately tabulated.

[4] Selected cities of birth were tabulated.

tribution by canton of birth, and second, for each canton and district and for the city of Geneva, how many were born within the particular commune of the canton where they were enumerated. On the other hand, in the censuses of Bulgaria (1934), England and Wales (1931), Mexico (1940), the Netherlands (1930), Norway (1930), Portugal (1940), Sweden (1940) and Turkey (1935), the only tabulations relating to locality of birth of natives were those which showed, for

various civil divisions of the country, the numbers of persons enumerated in the area who were born there and the numbers born elsewhere.

There are important differences in the definitions of "locality" used for questions on locality of birth in different censuses. Persons born in the locality of enumeration may be defined as those born and enumerated within a small area such as a village, township, ward, commune or other minor civil division, or the definition may refer to larger units of area such as counties, *arrondissements*, etc. If the definition refers to small areas of birth the data may be presented for larger areas of enumeration. For example, in the census of Belgium (1930) persons resident in each *arrondissement* were classified by whether or not born in the same commune, within the *arrondissement* where they resided at the time of the census, but not by specific commune of residence.

Classifications showing whether or not born in the area of enumeration, as means of tabulating data on locality of birth of natives, correspond to nativity classifications as means of tabulating data on country of birth. They have the same advantage of making possible the presentation of statistics which would be too costly or time-consuming if they were attempted with a detailed classification of localities of birth. They provide materials for analyses of immigration to the various localities identified in the classification of birthplace and area of enumeration, and for studies of those cultural and economic characteristics with respect to which persons living in the locality of birth may differ from those who have moved elsewhere. Such data, however, do not permit the analysis of migration between specific localities and of the paths of cultural and economic influence resulting from such movements.

### 2. Cross-classification by other characteristics

The types of cross-classification which may be useful in tabulations of data on locality of birth for natives are generally similar to those mentioned above in connexion with tabulations of nativity and country of birth. The uses of the cross-classification also are much the same. The following discussion of cross-classification is therefore limited mainly to a brief statement of the practices followed in recent censuses. It may be noted that the variety and detail of cross-tabulations in census data on locality of birth for natives have generally been much less than in data on nativity and country of birth. This is to be expected in view of the fact that in most countries the differences between persons born in various parts of the country tend to be less important than differences between the natives of the country as a whole and immigrants from abroad. Also, the problems of economic, social and political adjustment or assimilation arising from internal migration are generally less difficult than those which result from migration across national borders.

Table 16 shows that twenty-six of the censuses where any data were tabulated on locality of birth of natives included a classification by sex, but only eight included cross-tabulations by age groups.

A classification of persons enumerated in urban and rural areas, showing whether they were born in urban or in rural areas, throws light on the characteristics of urban-rural migration, which in many countries is the most important variety of internal migration. A classification of this type was shown in the census of Sweden (1945). In some other censuses the detailed classifications by small areas of birth and of residence or location at the time of the census doubtless permit the derivation of at least rough indications of urban-rural movements. Tabulations of locality of birth by urban-rural areas of residence or location at the time of the census, but not by urban-rural areas of birth, have been shown in the censuses of a number of countries, including Australia (1933), Belgium (1930), Canada (1941), England and Wales (1931), Ireland (1936), Finland (1940), Japan (1940), the Netherlands (1930), Romania (1930) and the United States 1940).

In the census of Australia, marital status was cross-tabulated with state or territory of birth. In the Canadian census, data on number of women ever married, by age at first marriage and present age, were tabulated by province of birth.

# VII. LEGAL NATIONALITY

*(prepared by the Population Division of the United Nations)*

## A. Explanation of terms

"Nationality" is a term used in the censuses of various countries to refer to widely different types of data. In some cases it has been applied to data which are discussed here under the headings "birthplace" and "language". In a few cases it has been used to designate a classification of the people into groups of common ancestral origins or customs, without reference to any specific objective criteria for the identification of the groups. In most censuses, however, it refers to data on legal nationality, and it is in that sense only that the term "nationality" is employed here. Other types of data designated as "nationality" in some censuses are not discussed here.

## B. Uses of data on nationality

It has already been pointed out that as a means of analysing the composition of the population with respect to ethnic groups, data on legal nationality suffer the defect of not showing the ethnic origins of persons who have become nationals of the census-taking country by naturalization, unless special questions on previous nationality of the naturalized are asked. However, these data have great value in other connexions. They are especially valuable in the study of problems relating to the legal status and civil rights of immigrants. Legal nationality is also a very useful item for official records relating to individuals, in countries where the census records are used in this way.

## C. Nationality data recommended by international agencies

In the recommendations regarding types of data to be obtained in population censuses taken in or about 1950, which the Population Commission adopted at its third session, the Commission made the following statement under the heading of "citizenship (legal nationality)":[1]

"These data should provide for the distinction between (*a*) persons who are citizens of the country where the census is taken, either by naturalization or otherwise, and (*b*) aliens. In addition, wherever feasible, the aliens should be classified by the country in which citizenship is claimed."

The Committee on the 1950 Census of the Americas, at its second session, also included this subject in its minimum list of topics for population censuses to be taken by the American nations around 1950, and made substantially the same recommendation as the Population Commission with reference to the nature of the classification:[2]

"A distinction should be established between (*a*) persons who at the time of the census are nationals of the country where the census is being taken — whether by birth, naturalization or for other reason, and (*b*) foreigners. It is further recommended that, if possible, foreigners be classified according to the country of which they are citizens. The formulation of the question on nationality is left to the judgment of each country."

The Committee also recommended for the consideration of the countries represented the following tabulation:[3]

"Nationals of the country where the census is taken (and foreigners), by sex, classified according to the following age groups: under 5 years; 5-14 years, and by 10-year intervals through 64 years; with a final age group of 65 years and over."

At its fourth session, the Population Commission made the following somewhat more extensive suggestion regarding tabulations on this subject:[4]

"The tabulations of data on citizenship should show at least two major categories: (i) citizens of the country where the census is taken and (ii) aliens (that is, citizens of other countries); each tabulated, by sex, for at least the following age

[1] *Report of the Population Commission* (third session) (*op. cit.*), p. 17.

[2] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . .* (*op. cit.*), p. 22.

[3] *Ibid.*, p. 29.

[4] *Report of the fourth session of the Population Commission* (*op. cit.*), pp. 27-28.

groups: under 5 years, 10-year groups from 5 to 64 years, 65 years and over.

"It is desirable that, where immigration rates are high, the data for citizens and aliens, like those for the native and foreign-born population, be tabulated also by such classifications as marital status, economic and social characteristics, urban-rural residence, education or literacy, and citizenship of spouse.

"Where it is not feasible to make tabulations both of the foreign-born population by country of birth and of the alien population by country of citizenship, preference should be given, for the sake of international comparability, to the tabulations by country of birth. In addition, it is desirable, where feasible, to tabulate at least the total numbers of aliens by country of citizenship. For this tabulation also the classification of countries should be in accordance with the list of nations and non-self-governing territories established by the United Nations Statistical Office and should show separately each country for which the number of persons is large enough to be significant. It is useful to subdivide those citizenship groups which include persons from many different areas (e.g. British subjects) by area of birth. Where possible, it is desirable to tabulate the data on country of citizenship in combination with sex and age, and with . . . [marital status, economic characteristics, etc.]"

## D. Types of nationality data obtained in recent censuses

As shown in table 12, some type of question on legal nationality was included in forty-eight of the fifty-three census schedules covered by this study. Although the Population Commission emphasized the distinction between nationals and aliens, recommending the classification of the latter by country of nationality only as an additional item of information to be obtained where feasible, the country of nationality of aliens has actually been obtained in most of the censuses. Exceptions are the censuses of Argentina (1947), Chile (1940) and the United States (1940), where the census schedules provided a distinction between nationals and aliens but not a classification by country of nationality of aliens (see table 17). In addition, in the censuses of Cuba (1943) and England and Wales (1931), the tabulations of census results on this topic were limited to the distinction between nationals and aliens, although country of nationality of aliens was shown on the schedules.

The simple distinction between nationals and aliens is evidently inadequate if it is desired to obtain data on sources of immigration to the country or on ethnic origins of the population. However, a classification by specific country of nationality is much more costly, and may perhaps not be considered necessary in some censuses if other data relevant to national origins (e.g. birthplace or mother tongue) are to be obtained. The type of classification that is considered feasible will, of course, depend partly on the complexity of the cross-tabulations of nationality data with data on other characteristics. In some of the censuses where a detailed classification by country of nationality has been tabulated for the whole population, condensed classifications, or simple distinctions between nationals and aliens, have been shown in many of the tables on nationality in relation to other characteristics.

In some of the censuses where only the distinction between nationals and aliens was provided by the information on the schedules, the actual questions asked did not refer directly to nationality, but to naturalization. In the 1940 census of Chile, for example, the question was asked, whether or not the person was a naturalized Chilean. The answers, together with those to the questions on place of birth, permitted the derivation of approximate totals for Chilean nationals defined as the sum of persons born in Chile and the naturalized.

The distinction between native and naturalized nationals is obviously of great importance in connexion with the study of problems of naturalization and assimilation of the alien population elements. A question on this subject has often been asked also in censuses where data on country of nationality of aliens were obtained. In quite a few censuses where no direct questions on naturalization were asked, the number of foreign-born nationals (which in many countries approximates the number of naturalized) could be obtained from the questions on nationality and birthplace. Thus, in thirty-six of the forty-eight censuses where nationality was investigated, a distinction could be made between the native population on the one hand, and naturalized nationals or foreign-born nationals on the other. However, as shown in table 17, the information obtained on naturalization was not in all cases included in the published tabulations.

In the censuses of Canada (1941), Cuba (1943) and the United States (1940), aliens who had taken first legal steps toward naturalization were identified as a separate category. In the 1940 census of the United States, the questions on

## Table 17. Types of questions on legal nationality asked in recent censuses and types of data tabulated

(This table is limited to censuses where some data on nationality were obtained. "x" indicates that the given classification could be derived from the questions asked or from the published tabulations; "–" that it was not obtained or was not tabulated; ".." that information was not available or was not complete)

| Country | Census questions | | | | Tabulations | | | |
|---|---|---|---|---|---|---|---|---|
| | Census year | Distinction between nationals and aliens | Country of nationality of aliens | Distinction between native and naturalized nationals (or foreign-born nationals) | Census year | Distinction between nationals and aliens | Country of nationality of aliens | Distinction between native and naturalized nationals (or foreign-born nationals) |
| AFRICA: | | | | | | | | |
| Egypt | 1947 | x | x | x | 1937 | x | x | x[1] |
| Union of South Africa | 1946 | x[2] | x[2] | x[2] | 1936 | x[2] | x[2] | x[2] |
| AMERICA: | | | | | | | | |
| Argentina | 1947 | x | – | x | 1947 | .. | .. | .. |
| Brazil | 1940 | x | x | x | 1940 | x | x | x |
| Canada | 1941 | x | x | x | 1941 | x | x | x |
| Chile | 1940 | x | – | x | 1940 | .. | – | .. |
| Colombia | 1938 | x | x | – | 1938 | x | x | – |
| Costa Rica | 1927 | x | x | x | 1927 | x | x | – |
| Cuba | 1943 | x | x | x | 1943 | x | – | x[1] |
| Dominican Republic | 1935 | x | x | x | 1935 | x | x | .. |
| El Salvador | 1930 | x | x | – | 1930 | x | x | – |
| Guatemala | 1940 | x | x | x[3] | 1940 | x | x | – |
| Honduras | 1945 | x | x | – | 1945 | x | x | – |
| Mexico | 1940 | x | x | x | 1940 | x | x | x |
| Nicaragua | 1940 | x | x | x | 1940 | .. | .. | .. |
| Panama | 1940 | x | x | x[3] | 1940 | x | x | x |
| Paraguay | 1936 | x | x | x | 1936 | .. | .. | .. |
| Peru | 1940 | x | x | x[4] | 1940 | x | x | – |
| United States of America | 1940 | x | – | x | 1940 | x[5] | – | x[5] |
| Venezuela | 1941 | x | x | x | 1941 | x | x | x |
| ASIA: | | | | | | | | |
| India | 1941 | x | x | –[6] | 1931 | – | – | – |
| Japan | 1940 | x | x | x[3] | 1940 | x | x | .. |
| Philippines | 1948 | x | x | – | 1939 | x | x | – |
| Syria | 1947 | x | x | x[3] | 1947 | .. | .. | .. |
| Turkey | 1940 | x | x | x[3] | 1935 | x | x | – |
| EUROPE: | | | | | | | | |
| Austria | 1934 | x | x | x[3] | 1934 | x | x | – |
| Belgium | 1947 | x | x | x | 1930 | x | x | x |
| Bulgaria | 1946 | x | x | – | 1934 | x | x | – |
| Czechoslovakia | 1947 | – | – | – | 1930 | x | x | .. |
| Denmark | 1940 | x | x | x[3] | 1940 | – | – | – |
| France | 1946 | x | x | x | 1946 | x | .. | .. |
| Germany | 1939 | x | x | .. | 1939 | x | x | .. |
| Greece | 1940 | x | x | x | 1940 | .. | .. | .. |
| Hungary | 1941 | | x | x[3] | 1941 | .. | .. | .. |
| Italy | 1936 | x | x | – | 1936 | x | x | – |
| Luxembourg | 1947 | x | x | x | 1935 | x | x | x |
| Netherlands | 1947 | x | x | x[3] | 1930 | x | x | – |
| Norway | 1946 | x | x | x[3] | 1930 | x | x | – |
| Poland | 1931 | x | x | x[3] | 1931 | – | – | – |
| Portugal | 1940 | x | x | x | 1940 | x | x | x |
| Romania | 1930 | x | x | – | 1930 | x | x | – |
| Spain | 1940 | x | x | x[3] | 1940 | x | x | – |
| Sweden | 1945 | x | x | – | 1945 | .. | .. | .. |
| Switzerland | 1941 | x | x[7] | x | 1941 | x | x[7] | x |

[1] These data related to foreign-born nationals.

[2] These data pertained only to the Asiatic, Coloured and European populations.

[3] The census schedule contained no direct question on naturalized nationals, but data were obtained on both birthplace and nationality so that by cross-tabulations the number of foreign-born nationals could be derived. Such data may be considered an approximation of naturalized persons since the number of foreign-born persons who were nationals at birth is not large.

[4] One of the three schedules used (the schedule for rural areas) contained no direct question on naturalized persons, but an approximation of the number of naturalized could be obtained from the questions on birthplace and nationality.

[5] Data on nationality were tabulated for the white population only.

[6] For non-Indians, the question referred to race or nationality. Indians were to state the caste or tribe to which they belonged.

[7] For persons having no nationality the classification as nationals or aliens referred to their last previous nationality.

## Table 17. Types of questions on legal nationality asked in recent censuses and types of data tabulated (cont.)

(This table is limited to censuses where some data on nationality were obtained. "x" indicates that the given classification could be derived from the questions asked or from the published tabulations; "–" that it was not obtained or was not tabulated; ".." that information was not available or was not complete)

| Country | *Census questions* | | | | *Tabulations* | | | |
|---|---|---|---|---|---|---|---|---|
| | *Census year* | *Distinction between nationals and aliens* | *Country of nationality of aliens* | *Distinction between native and naturalized nationals (or foreign-born nationals)* | *Census year* | *Distinction between nationals and aliens* | *Country of nationality of aliens* | *Distinction between native and naturalized nationals (or foreign-born nationals)* |
| United Kingdom | | | | | | | | |
| England and Wales..... | 1931 | x | x | x | 1931 | x | – | x |
| Scotland..... | 1931 | x | x | x | 1931 | x | x | x |
| USSR..... | 1939 | x | x | – | 1939 | .. | .. | – |
| Yugoslavia..... | 1931 | x | x | .. | 1931 | x | x | .. |
| OCEANIA: | | | | | | | | |
| Australia..... | 1947 | x | x | x[8] | 1933 | x | x | –[9] |

[8] From the questions asked it was possible to distinguish those persons who were of British nationality by naturalization without reference to the specific part of the Empire where naturalization took place.

[9] The tabulations showed all British nationals born outside Australia.

naturalization, together with those on place of birth, permitted the classification of the population into these groups: (1) persons born in the United States (nationals by birth); (2) children born abroad of United States nationals (also nationals by birth); (3) naturalized persons; (4) aliens having taken first legal steps to be naturalized; and (5) other aliens.

In the censuses of Mexico (1940) and Nicaragua (1940), questions were asked also of the naturalized (and of aliens who had changed from one to another foreign nationality since birth) to determine their previous nationality. This procedure, in so far as it is successful in providing the information called for, removes the chief limitation on nationality data as a source of information on ethnic groups, namely, the restriction to persons who remain as aliens in the country of immigration. However, the quality of the data which can be obtained in answer to such questions is somewhat doubtful, since naturalization in many cases occurred many years before the census date, and census informants often cannot give accurate information about conditions which existed in the distant past.

In a few countries (Argentina, Panama, Paraguay, Venezuela) the nationality of the individual's parents also has been made a subject of census questions. The objection noted above with reference to questions on previous nationality of the naturalized probably applies with greater force to questions on nationality of parents.

## E. Problems of defining legal nationality

In general, problems of concept and definitions (other than those which arise in connexion with the nomenclature of nationalities, to be discussed below) are relatively minor in connexion with census data on nationality. A few special problems, however, require mention.

One problem is that of the reporting of "stateless" persons, who have lost their claim to nationality in any country. In some censuses such persons have been enumerated as a special nationality group; in others they have been allocated to the country of previous nationality.[5]

Persons with dual nationality constitute another problem. For the most part these are persons born in one country of parents who were nationals of another country, and who claim nationality in both countries. Where one of the countries involved is that of the census, the question may be solved quite simply by counting them as nationals of that country. Otherwise, it may be sufficient to ask each individual with dual nationality to state what nationality he prefers to have entered in the census record.

Somewhat more difficult problems are created by national boundary changes. Persons who reside

[5] The most desirable statistical treatment of persons in this category may depend on the data required for dealing with the various aspects of their protection. The importance of this international problem has been pointed out by the Economic and Social Council (see United Nations document E/1112).

in the areas affected at the time of the change ordinarily acquire the nationality of the country to which the area is added, and may be considered in the next census of that area as nationals. However, in the case of persons who emigrated from such an area to another country, before the boundary change occurred, a question arises as to the appropriate nationality classification. Commonly no specific provision for this contingency is made in the census instructions, so that whatever nationality the individual states is taken for the purpose of the census. Wherever any considerable number of such persons is likely to be enumerated it is evidently desirable, for the sake of consistency in reporting, to indicate what rule is to be followed.

## F. Tabulations of nationality data

### 1. The classification of countries of nationality

Differences in the methods used in various censuses for classifying countries of nationality in the census publications are the main sources of difficulty in international comparisons of these statistics. The chief problems involved in this classification are the nomenclature of nationality categories, and the grouping together of nationalities which cannot be tabulated separately.

In some cases the designations used to refer to country of nationality, like those for country of birth, do not have uniformly understood meanings. For example, the category "British" was shown in the censuses of Australia (1933) and Egypt (1937); "English" was used in those of Costa Rica (1927), Dominican Republic (1935) and Norway (1930); "Great Britain" was the term used in Czechoslovakia (1930); "Great Britain and Northern Ireland" in Italy (1936); and "British subjects and colonials" in Romania (1930). Where such different terms are used it is impossible to know whether the respective categories have the same definition.

Reference has already been made to the standard nomenclature of geographic areas for statistical purposes prepared by the Statistical Office of the United Nations. The use of this list as a basis for census tabulations of data on country of nationality as well as country of birth would contribute materially to international comparability. The laws governing nationality of the inhabitants of various Non-Self-Governing Territories, of course, have to be considered in using the list for this purpose.

As in the case of statistics on country of birth, it is evidently desirable, as far as possible, to tabulate statistics for each country of nationality separately, but some method of grouping is necessary for the nationals of countries represented by very small numbers. As suggested in the discussion of classifications by country of birth, a simple basis for such groupings is the division by continents. In the case of nationality data, this may be supplemented by special categories for certain nationalities which are inter-continental, such as French and British. Other bases for grouping also may be feasible, such as linguistic, cultural or economic characteristics of the various nationality categories.

### 2. Subdivisions of nationality groups by birthplace

In the case of nationality categories which comprise persons from many different parts of the world, such as "British subjects", the meaningfulness of the data for analysis of international migrations, ethnic origins, etc. can be enhanced by appropriate subdivisions by place of birth. This procedure was mentioned by the Population Commission as particularly useful.

### 3. Population coverage of nationality tabulations

In most censuses, tabulations of nationality data, like those on country of birth, have referred to the whole population enumerated, but in a few instances, they have been confined to certain groups. In the censuses of the United States (1940) and of Cuba (1943), some of the tabulations of nationality data were restricted to the white or to the foreign-born white population. In the census of the Union of South Africa (1936) all nationality tabulations excluded the Bantu population. In the cases mentioned, the limitations did not seriously affect the comparability of results with nationality tabulations from the censuses of other countries, because the groups not covered were made up almost entirely of nationals.

Differences in the type of enumeration (i.e., *de facto* or *de jure*) have the same kind of influence on the nationality tabulations as on country of birth tabulations. Non-residents temporarily present in the country are likely, for the most part, to be aliens (see chapter II).

### 4. Tabulations of nationality data by other characteristics

The usefulness of nationality data, like that of data on birthplace, is greatly improved by tabulat-

ing the data in relation to other characteristics, such as sex and age, marital status, urban or rural residence, length of residence in the country, occupation and other economic characteristics. The uses of such cross-tabulations in nationality statistics are in general the same as in birthplace statistics, and need not be pointed out again here. As already stated, detailed cross-tabulations with some of these population characteristics have been made more often in nationality than in birthplace statistics. This fact gives evidence of a prevalent interest in the characteristics of immigrants in their quality as aliens.

A summary of tabulations of nationality data by other characteristics in recent censuses is found in table 18.

(*a*) *Sex and age.* Both the Population Commission and the Committee on the 1950 Census of the Americas suggested that at least the two categories, nationals and aliens, should be tabulated by age groups for each sex. The Population Commission also called attention to the desirability of a similar tabulation, where possible, for aliens by country of nationality.

Table 18 shows that in all but five of the thirty-seven censuses examined in which any data were tabulated on nationality, tabulations by sex were found. Further cross-classification by age was presented in twenty-one of the censuses, fourteen of them giving detailed data on country of nationality, and the remainder only broad groups such as nationals and aliens.

Among the twenty-one censuses giving tabulations of nationality data by age, there were variations in the age groupings used (see table 19). In most cases the groupings were fairly detailed. However, the particular age groups suggested by the Population Commission and the Committee on the 1950 Census of the Americas (0-4, ten-year groups from 5 to 64, 65 and over) could be derived from the classifications given in only seven censuses (those of Australia 1933, Canada 1941, England and Wales 1931, Luxembourg 1935, Scotland 1931, Switzerland 1941 and the Union of South Africa, 1936). In all these censuses, five-year age groups were tabulated beginning with age 0. There were two principal reasons why the fairly detailed classifications presented in some of the other censuses could not be fitted into the recommended pattern. First, the detailed age groupings in some cases were limited to the population above a certain minimum age, so that the ten-year groups beginning with age 5 could not be obtained. In the United States census of 1940, for example, five-year groups were tabulated from age 35 upwards, but below that age only the two groups under 21 and 21-34 were given, because relatively few aliens were under 35 years old. In any country where immigration has been greatly reduced for one or two decades prior to the census, the numbers of aliens in the youngest groups may not seem large enough to warrant a fine age classification. Second, in those censuses where the nationality data were tabulated by ten-year rather than five-year groups, the groups were generally made to begin with ages ending in zero (10-19, 20-29, etc.) instead of ages ending in 5 (5-14, 15-24, etc.), as proposed by the international bodies.

(*b*) *Marital status.* Marital status was among the classifications which the Population Commission mentioned as desirable for inclusion in nationality or birthplace tabulations for countries with a large volume of immigration. Classifications by marital status were included in the nationality tabulations of seventeen of the censuses examined. In seven of these censuses, the nationality classification tabulated by marital status gave only such broad groups as nationals and aliens; in ten the aliens were classified by country of nationality. In all cases, the marital status classification was made separately for males and females, but in only about half of these was a further classification made by age groups.

(*c*) *Other characteristics.* Of the censuses examined for this report, thirteen included tabulations which would permit an analysis of the urban-rural distribution, either of all aliens as a group or of those having specific nationalities. Two censuses included separate tabulations for large cities only.

Classifications of aliens by duration of residence in the country are useful for studying the progress of naturalization, as well as the recency of immigration as a factor in economic and social adjustment. In a number of the censuses studied, questions on the duration of residence or year of entry into the country were asked either for aliens or for foreign-born persons, but in only two of these were the results tabulated in relation to nationality, i.e., Australia (1933) and Portugal (1940).

Classifications by occupation, industry and occupational status (employees, employers, etc.), in relation to nationality have a special significance in some countries because of national laws or policies relating to conditions of employment of aliens or defining the kinds of economic activities open to them. Of the censuses examined for this report, twenty-three gave classifications relating

## Table 18. Types of cross-tabulations presented with data on nationality in recent censuses

(This table is limited to censuses where some data on nationality were obtained. "A" indicates that the given data were tabulated separately for nationals and aliens only; "B" that they were tabulated for aliens by country of nationality; "–" that they were not tabulated; ".." that information on tabulations was not available or was not complete; "*" that the census year is different from that shown in table 12)

| Country | Census year | Sex | Age by sex | Marital status | Occupation or industry | Occupational status | Urban-rural residence |
|---|---|---|---|---|---|---|---|
| **AFRICA:** | | | | | | | |
| Egypt | 1937* | B | B | B | A | A | – |
| Union of South Africa | 1936* | B[1] | B[1] | – | – | – | B[1] |
| **AMERICA:** | | | | | | | |
| Argentina | 1947 | .. | .. | .. | .. | .. | .. |
| Brazil | 1940 | B[2] | A | .. | .. | .. | .. |
| Canada | 1941 | B | B | – | – | – | A |
| Chile | 1940 | .. | .. | .. | .. | .. | .. |
| Colombia | 1938 | B | – | B | A | A | – |
| Costa Rica[3] | 1927 | .. | .. | .. | .. | .. | .. |
| Cuba | 1943 | A | A[4] | A[4] | A[4] | A[4] | A[4] |
| Dominican Republic | 1935 | B | .. | A | A[5] | .. | A |
| El Salvador | 1930 | B | – | – | – | – | – |
| Guatemala | 1940 | B | – | – | – | – | – |
| Honduras | 1945 | B | – | – | – | – | – |
| Mexico | 1940 | B | – | – | A | A | –[6] |
| Nicaragua | 1940 | .. | .. | .. | .. | .. | .. |
| Panama | 1940 | B | – | – | A | – | B |
| Paraguay | 1936 | .. | .. | .. | .. | .. | .. |
| Peru | 1940 | B | B | B | B | B | – |
| United States of America | 1940 | A | A[7] | – | A[7] | – | A |
| Venezuela | 1941 | B | B | B | A | A | – |
| **ASIA:** | | | | | | | |
| India | 1931* | – | – | – | – | – | – |
| Japan | 1940 | B | .. | .. | .. | .. | .. |
| Philippines | 1939* | B | B | – | B | – | – |
| Syria | 1947 | .. | .. | .. | .. | .. | .. |
| Turkey | 1935* | B | B | – | B | – | –[8] |
| **EUROPE:** | | | | | | | |
| Austria | 1934 | B | – | – | – | – | – |
| Belgium | 1930* | B | B | A | B | B[9] | B[10] |
| Bulgaria | 1934* | B | – | – | – | – | B |
| Czechoslovakia | 1930 | .. | .. | .. | A | A | B[11] |
| Denmark | 1940 | – | – | – | – | – | – |
| France[3] | 1946 | .. | .. | .. | .. | .. | .. |
| Germany | 1939 | B | A | A | A | A | .. |
| Greece | 1940 | .. | .. | .. | .. | .. | .. |
| Hungary | 1941 | .. | .. | .. | .. | .. | .. |
| Italy | 1936 | B[12] | B[13] | B[13] | B[13] | – | – |
| Luxembourg | 1935* | B | B | B | A | A | – |
| Netherlands | 1930* | B | – | – | B | B | B[14] |
| Norway | 1930* | B | B | B | B | – | B |
| Poland | 1931 | – | – | – | – | – | – |
| Portugal | 1940 | B | B | B | B | – | – |
| Romania | 1930 | – | – | – | – | – | B |
| Spain | 1940 | B | B | B | B | – | – |
| Sweden | 1945 | .. | .. | .. | .. | .. | .. |
| Switzerland | 1941 | B | A | A | A | A | – |

[1] These data were tabulated only for the Asiatic, Coloured and European populations.

[2] The detailed classification by countries of nationality was shown in the available census reports only for some major administrative divisions of Brazil.

[3] The available tabulations showed data on nationality without any cross-classifications.

[4] These data were tabulated for the white population only.

[5] This classification contained only three groups: (1) professionals, (2) non-professional workers, and (3) family members.

[6] Data on country of nationality were tabulated separately for individual localities of over 10,000 population.

[7] The data were tabulated for the foreign-born white population only.

[8] Data on country of nationality were tabulated for places of over and under 10,000 population.

[9] The distinction between nationals and aliens was made for only two occupational status groups, viz. "family helpers" and "persons practising a gainful occupation".

[10] Data on country of nationality were tabulated separately for six size-groups of communes.

**Table 18. Types of cross-tabulations presented with data on nationality in recent censuses (cont.)**

(This table is limited to censuses where some data on nationality were obtained. "A" indicates that the given data were tabulated separately for nationals and aliens only; "B" that they were tabulated for aliens by country of nationality; "–" that they were not tabulated; ".." that information on tabulations was not available or was not complete; "*" that the census year is different from that shown in table 12)

| *Country* | *Census year* | *Sex* | *Age by sex* | *Marital status* | *Occupation or industry* | *Occupational status* | *Urban-rural residence* |
|---|---|---|---|---|---|---|---|
| United Kingdom | | | | | | | |
| England and Wales... | 1931 | A | A | A | – | – | – |
| Scotland..... | 1931 | A | A | A | A[15] | – | – |
| USSR..... | 1939 | .. | .. | .. | .. | .. | .. |
| Yugoslavia[3]..... | 1931 | .. | .. | .. | .. | .. | .. |
| OCEANIA: | | | | | | | |
| Australia..... | 1933* | B | B | B | – | B | B |

[11] In addition data on total aliens were tabulated by size classes of sections of communes.

[12] These data were tabulated separately for resident and non-resident aliens.

[13] These data were tabulated separately for resident aliens only.

[14] Data on country of nationality were tabulated separately for eight size-groups of communes.

[15] The data were tabulated for foreign-born persons of alien and unstated nationality.

to economic activities in nationality tabulations. In twenty-two of them the data on nationality were tabulated for the economically active population by industry (branch of economic activity), occupation, or both, and in thirteen by occupational status (employees, employers, etc.). Of the twenty-three censuses tabulating nationality data in relation to these characteristics there were thirteen where only the two-fold classification of aliens and nationals was made. The full list of countries of nationality employed for other tabulations of nationality data was presented in most of the remaining ten censuses, but a few showed either an abridged classification by country of nationality or statistics for but a few selected alien groups.

Tabulations of nationality data by literacy, education or home tenure were found in a few of the censuses examined. In the census of Cuba (1943) all three types of data were shown.

## G. Tabulations of data on naturalization

Four types of tabulations on naturalization were found in the reports of recent censuses. First was a tabulation showing only the total number of naturalized persons without indication of origin; in the second type, the naturalized were classified by previous nationality; in the third, by birthplace, and in the fourth, by country of last permanent residence. In some cases the tabulations referred to all foreign-born nationals, including those who were nationals by birth as well as those who had been naturalized.

The last three types of data constitute valuable supplements to statistics on country of nationality of aliens, as means of analysing the influence of immigration upon the composition of the population. The classifications by previous nationality and by country of last permanent residence require special census questions for naturalized persons. The grouping by birthplace, on the other hand, is derived from a question commonly asked in population censuses for other purposes.

In fifteen of the censuses examined, some type of data on the naturalized or foreign-born nationals was tabulated (see table 17). In some of these the data were classified by previous nationality, birthplace or country of origin. In a number of the censuses only the totals for the naturalized, with no indications of national origins, were given. In nearly all cases the type of classifications relating to national origins used for the naturalized was parallel to that used for aliens. In the census of Portugal (1940), however, data for the naturalized were presented by country of birth, while aliens were classified by country of nationality.

Tabulations on characteristics of the naturalized, in general, follow the same pattern as those for aliens and may be utilized in the same manner.

In almost all of the censuses the data on naturalized or foreign-born nationals were classified by sex, but cross-tabulations by sex and age were found in only half of them.

Tabulations of data on the naturalized or

## Table 19. Age classifications used in cross-tabulations of sex and age with data on nationality in recent censuses

(This table is limited to censuses where some tabulations of nationality by age were available. "A" indicates that the data were tabulated separately for nationals and aliens only; "B" that they were tabulated by country of nationality; "–" that age groups of the specified type were not shown; ".." that information was not available or was not complete; "*" that the census year is different from that shown in table 12)

| Country | Census year | Type of tabulation | Age range covered by 5-year groups (or by groups convertible to 5-year) groups | Age range covered by 10-year (but not 5-year) groups | Other groups tabulated |
|---|---|---|---|---|---|
| AFRICA: | | | | | |
| Egypt | 1937* | B | 0 to 19 | 20 to 59 | 60 and over |
| Union of South Africa | 1936* | B[1] | 0 to 99 | – | 5-6, 7-9, 15, 16, 17, 18, 19, 20, 21-24, 100 and over |
| AMERICA: | | | | | |
| Brazil | 1940 | A | .. | 0 to 99 | 100 and over |
| Canada | 1941 | B | 0 to 69 | – | 70 and over |
| Cuba | 1943 | A[2] | 0 to 9, 20 to 99 | 10-19 | Under 1, 1-4, 10, 11, 12, 13, 14-19, 100 and over |
| Peru | 1940 | B | 15 to 24 | 25-34 | 0-14, 35-59, 60 and over |
| United States of America | 1940 | A[3] | 35 to 74 | – | Under 21, 21-34, 75 and over |
| Venezuela | 1941 | B | 0 to 9[4] | For native nationals, 10 to 49; for aliens and naturalized persons, 10 to 69 | For native nationals, 50 and over; for aliens and naturalized persons, 70 and over |
| ASIA: | | | | | |
| Philippines | 1939* | B | 0 to 24 | 35 to 64 | 65 and over |
| Turkey | 1935* | B | – | 0 to 89 | 90 and over |
| EUROPE: | | | | | |
| Belgium | 1930* | B | – | – | Under 2, 2-6, 7-14, 15-20, 21-59, 60 and over |
| Germany | 1939 | A | 20 to 64 | 0 to 19 | Under 6, 6-9, 10-13, 14-15, 16-17, 18-19, 20, 21-24, 65 and over |
| Italy | 1936 | B[5] | – | – | 0-14, 15-64, 65 and over |
| Luxembourg | 1935* | B | 0 to 89 | – | 90 and over[6] |
| Norway | 1930* | B | 0 to 29 | 30 to 59 | 60 and over |
| Portugal | 1940 | B | – | 0 to 49 | 50 and over |
| Spain | 1940 | B | 15-19 | 20 to 59 | Under 14, 14, 60 and over |
| Switzerland | 1941 | A | 0 to 99 | – | 100 and over |
| United Kingdom | | | | | |
| England and Wales | 1931 | A | 0 to 79 | – | 80 and over |
| Scotland | 1931 | A | 0 to 84 | – | Under 1, 1-4, 85 and over |
| OCEANIA: | | | | | |
| Australia | 1933* | B | 0 to 99 | – | 100 and over |

[1] Data on nationality were tabulated only for the Asiatic, Coloured and European populations.

[2] These data were tabulated for the white population only.

[3] These data were tabulated for the foreign-born white population only. Data for the native white population (nationals by birth) could be obtained as a residual.

[4] These age groups were tabulated for aliens only.

[5] These data were tabulated separately for resident aliens only.

[6] Single years of age up to age 98 were shown for total nationals and total aliens.

foreign-born nationals by urban-rural residence were found in the censuses of Belgium (1930), Canada (1941), Panama (1940), the Union of South Africa (1936) and the United States (1940). Tabulations by marital status were made in the census of Scotland (1931), by occupation and related characteristics in that of the United States (1940).

As a rule, no information was tabulated for naturalized persons that was not shown for aliens. In some cases, the data tabulated for aliens were more detailed than those for the naturalized.

# VIII. LANGUAGE

*(prepared by the Population Division of the United Nations)*

## A. Language data recommended by international agencies

The Population Commission at its third session recommended the collection of data on mother tongue in population censuses to be taken in or around 1950, and defined mother tongue as ". . . the language spoken in the individual's home in his early childhood".[1] At its fourth session, the Commission made the following suggestions regarding tabulations of data in this field:[2]

"For purposes of international comparisons, the classification of data on mother tongue should show each language that is numerically important in the country, and not merely the dominant language or languages. It is useful to tabulate these data:

"(*a*) Separately for natives of the country where the census is taken and for foreign-born persons; or for citizens and aliens;

"(*b*) By age at least in the groups (under 5 years, 10-year groups from 5 to 64 years, 65 years and over) for each sex.

"If there is a question on the schedule relating to the language currently spoken, the resulting data may also be tabulated in accordance with the above recommendations. In the case of multilingual persons the classifications tabulated should indicate the language most commonly used at home.

"It is useful, especially in the case of certain linguistic groups which have diverse national origins, to make subdivisions by country of birth, in order to improve the value of the results for studies of ethnic groups.

"Where detailed tabulations are feasible, it is desirable to tabulate the data on mother tongue (or current language, if included) in relation to urban-rural residence, literacy, economic and social characteristics in order to permit analyses of the problems of minority groups and immigrants."

[1] *Report of the Population Commission* (third session) (*op. cit.*), p. 17.

[2] *Report of the fourth session of the Population Commission* (*op. cit.*), pp. 28-29.

The Committee on the 1950 Census of the Americas, at its second session, recommended that each of the American nations should obtain either data on mother tongue, defined as the Population Commission recommended, or data on language currently spoken by the individual at home with the members of the family. The investigation of additional languages which the enumerated individual might speak was left to the judgment of each country.[3] The tabulations of language data to be recommended were left for study by the Committee's Co-ordinating Board, pending the next session of the Committee.

## B. Types of language data obtained in recent censuses

A question on mother tongue was included in thirteen of the fifty-three census schedules examined for this study (see table 20). Questions on language (or languages) currently spoken by the individual were asked in sixteen of the censuses. A third type of question, not mentioned by the Population Commission or the Committee on the 1950 Census of the Americas, refers to the individual's knowledge of a specified language, usually the official or principal language of the country; questions of this type were asked in fifteen of the censuses. In twelve censuses, two or all three of these three types of questions were asked.

### 1. Data on mother tongue

Data on mother tongue are generally more useful than the other types of language data for analysing the composition of the population with respect to ethnic origins, though they are not reliable as indications of the actual linguistic abilities of the people at the time of the enumeration. "Mother tongue" is generally defined in accordance with the recommendation of the Population Commission as the language spoken in the individual's home during his childhood, or a near equivalent

[3] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . .* (*op. cit.*), p. 22.

## Table 20. Types of questions on language asked in recent censuses and types of data tabulated

(This table is limited to censuses where some data on language were obtained. "x" indicates that the given classification could be derived from the questions asked or from the published tabulations; "–" that it was not obtained or was not tabulated; ".." that information was not available or was not complete)

| Country | Census questions | | | | Tabulations | | | |
|---|---|---|---|---|---|---|---|---|
| | Census year | Mother tongue | Language currently spoken | Ability to speak designated languages | Census year | Mother tongue | Language currently spoken | Ability to speak designated languages |
| AFRICA: | | | | | | | | |
| Union of South Africa.... | 1946 | – | x[1] | x | 1936 | – | x[2] | x[2] |
| AMERICA: | | | | | | | | |
| Brazil..... | 1940 | – | x | x | 1940 | – | x | x |
| Canada..... | 1941 | x[3] | – | x | 1941 | x[3] | – | x |
| Costa Rica..... | 1927 | x | – | – | 1927 | x | – | – |
| Cuba..... | 1943 | x[4] | – | x | 1943 | – | – | – |
| Dominican Republic..... | 1935 | – | x | – | 1935 | .. | .. | .. |
| Guatemala..... | 1940 | x | – | x | 1940 | x | – | – |
| Mexico..... | 1940 | – | x[5] | x[5] | 1940 | – | x[5] | x[5] |
| Nicaragua..... | 1940 | – | x | x | 1940 | .. | .. | .. |
| Paraguay..... | 1936 | – | – | x | 1936 | .. | .. | .. |
| Peru..... | 1940 | x[6] | x[6] | x[6] | 1940 | –[6] | –[6] | x[6] |
| United States of America.. | 1940 | x | – | – | 1940 | x[7] | – | – |
| ASIA: | | | | | | | | |
| India..... | 1941 | x[8] | x[8] | – | 1931 | x[8] | x[8] | – |
| Philippines..... | 1948 | x | x | x | 1939 | – | x[9] | x[9] |
| Turkey..... | 1940 | – | x[10] | – | 1935 | – | x[10] | – |
| EUROPE: | | | | | | | | |
| Austria..... | 1934 | x[11] | – | – | 1934 | x[11] | – | – |
| Belgium..... | 1947 | – | – | x | 1930 | – | – | x |
| Bulgaria..... | 1946 | – | x | – | 1934 | – | x | – |
| Czechoslovakia..... | 1947 | – | – | – | 1930 | x[12] | – | – |
| Finland..... | 1940 | – | x | – | 1940 | – | x | – |
| Germany..... | 1939 | .. | x | .. | 1939 | .. | x[13] | .. |
| Greece..... | 1940 | x[14] | x[15] | – | 1940 | .. | .. | .. |
| Hungary..... | 1941 | – | x[16] | – | 1941 | – | x[16] | – |
| Ireland..... | 1946 | – | – | x | 1936 | – | – | x |
| Norway..... | 1946 | – | – | – | 1930 | – | x[17] | – |
| Poland..... | 1931 | – | x[18] | – | 1931 | – | x[18] | – |
| Romania..... | 1930 | x | – | x | 1930 | x | – | x |
| Switzerland..... | 1941 | x | – | – | 1941 | x | – | – |
| United Kingdom | | | | | | | | |
| England and Wales..... | 1931 | – | – | x[19] | 1931 | – | – | x[19] |
| Scotland..... | 1931 | – | – | x | 1931 | – | – | x |
| USSR..... | 1939 | – | x | – | 1939 | – | .. | – |
| Yugoslavia..... | 1931 | x | .. | .. | 1931 | x | .. | .. |

[1] For the Bantu population, the question referred to the native language usually spoken.

[2] Data on language were tabulated only for the Asiatic, Coloured and European populations.

[3] A language which the individual was no longer able to speak was not to be reported.

[4] This question was asked only of immigrants and referred to the language spoken in the home before immigration.

[5] Each person was asked if he could speak Spanish and what other languages he spoke. The tabulations showed the languages spoken by each person.

[6] Three separate schedules were used for different types of areas. Two schedules called for mother tongue and the other languages spoken by the individual; the other called for ability to speak Spanish and other languages spoken by the individual. The results were combined in the course of tabulation into a classification by "language" without explanation of the method of combination. Because of the phrasing of the questions, it appears that tabulations were complete only for persons speaking Spanish.

[7] The data were tabulated for the white population only.

[8] The schedule called for mother tongue and other Indian languages commonly used in addition to the mother tongue. The definitions did not clearly state whether or not the individual could report as his mother tongue a language he no longer spoke. The tabulations showed mother tongue and subsidiary languages spoken.

[9] Although data were collected separately on ability to speak designated languages and on other languages spoken by the individual, tabulations showed only the number of persons speaking each language. The languages designated on the schedule were only part of the list of languages tabulated.

[10] Although the term mother tongue was used in the census, it was defined as meaning the language currently spoken in the home. Data were also collected on other language spoken.

[11] This question referred to "linguistic affinity" defined as that language which identifies the cultural group to which the person felt he belonged. Only one linguistic affinity was to be stated. For children not yet able to talk and for dumb persons, linguistic affinity was defined as the language spoken by their family, or if this was not applicable, the language of their environment.

[12] The tabulations were labelled "ethnic nationality" but pertained almost exclusively to the mother tongue reported.

[13] Available census volumes show tabulations of language data for aliens only.

[14] The census question referred to the first language learned by the individual.

such as the language which the individual's parents spoke, or that which he first learned to speak. In a few censuses other criteria have been used. In the 1943 census of Cuba there was a question for immigrants on language spoken in the home before immigration; in most instances this would be the same as the language spoken in childhood, but it might differ in some cases. In the 1941 census of Canada, the definition of mother tongue contained a provision that a language which the individual was no longer able to understand should not be reported as the mother tongue.

### 2. Data on languages currently spoken

Data on language or languages currently used by the individual are less appropriate for the identification of ethnic groups than data on mother tongue, because many persons of different linguistic backgrounds habitually use the dominant language of the country where they reside. However, these data are very well adapted to certain other uses. In connexion with data on birthplace or legal nationality, statistics on languages currently spoken may be very useful for studying the linguistic assimilation of various immigrant groups. Their value in this connexion is enhanced by the availability of data for a series of census dates.

Census data on languages currently spoken are subject to greater difficulties in international comparisons because of differences in the forms of questions on this topic asked in various censuses. In the 1940 census of Brazil the question referred to the language usually spoken at home; in the 1935 census of the Dominican Republic the question was "What languages do you speak?"; in the 1941 census of Hungary it referred in part to the language which the individual spoke best and preferably.

### 3. Data on knowledge of a designated language

With reference to the third type of data mentioned above, that is, knowledge of a designated language or languages, the problems of international comparability are still greater. The census questions most commonly asked on this subject refer to ability to speak the official language or the dominant language of the country. Since many persons may be able to speak only a little of the designated language, the results may be greatly affected by even minor variations in the terms of the question. For example, the question "Do you speak fluently the national language?", which was asked in the 1940 census of Brazil, may give quite different results from the question, "Do you speak the national language?" which was used in the 1940 census of Mexico and the 1948 census of the Philippines. Even if the questions were identical, the respondents' interpretations might differ greatly from country to country, or from one population group to another within the same country.

In spite of the difficulties of definition, data on ability to speak the principal or official language of the country are exceedingly important in connexion with problems of education and assimilation, and of communication with linguistic minorities. These data are especially likely to be needed in countries which have recently received large numbers of immigrants or which are inhabited by several native linguistic groups. In the latter countries it may be desirable to determine specifically the numbers of people speaking each of the principal languages. For example, in the 1947 census of Belgium, each person was asked which of the three national languages he spoke (French, Flemish or German); in the 1946 census of the Union of South Africa, the question referred to ability to speak English, Afrikaans or native languages; and in the 1931 census of England and Wales a question was asked in certain areas, as to whether the individual spoke only Welsh or both English and Welsh. In the 1947 census of Australia, the question on knowledge of the official language referred to reading and writing knowledge, rather than speaking ability.

### 4. Data on multilingual persons

In some censuses an effort was made to obtain data on persons speaking more than one language. The usual procedure for doing this was to supplement the main question on mother tongue, principal language currently spoken or ability to speak the national language, with a request to list all other languages spoken by the individual. Examples are found in the censuses of Hungary

*Footnotes to table 20, cont.*

[15] The census question referred to the language usually spoken.

[16] The census questions called for the language which the individual acknowledged as his own and which he spoke best and preferred to speak, and also for all other languages known by the individual. The tabulations showed separately the number of persons speaking each listed language and the language used preferably by each person.

[17] Although the question asked referred to the language spoken in the home, the answer was restricted to a choice of one of three languages.

[18] Although the term mother tongue was used in the census, it was defined as meaning the language most familiar to the individual, usually the one in which he thought or which he used in his family.

[19] Language data were collected and tabulated only for selected areas in which languages other than English are generally spoken.

(1941), India (1941), Peru (1940), Turkey (1940), Mexico (1940) and Nicaragua (1940). The answers to questions of this kind pose a difficult problem of tabulation, which is discussed in part C of this chapter.

## C. Tabulations of language data

### 1. Types of data tabulated

It is noteworthy that, for several censuses where questions on language were asked, the available publications contain no tabulations on this subject, although tabulations on other subjects are presented (see table 20). Examples are the censuses of Cuba (1943) and the Dominican Republic (1935). In some cases where two types of questions on language were asked, the results of only one type were tabulated. For example, the available publications of the 1940 census of Guatemala show tabulations on mother tongue only, though a question on ability to speak Spanish was also asked. In a number of censuses, however, two types of language data were tabulated. Both language currently spoken and knowledge of specified languages were tabulated in the censuses of Brazil (1940), Mexico (1940), the Philippines (1939) and the Union of South Africa (1936), and mother tongue and knowledge of specified languages, in the censuses of Canada (1941) and Romania (1930).

In a few of the censuses two types of language data were cross-tabulated with each other. In the 1931 census of India data on mother tongue and other languages spoken were cross-tabulated. In the 1940 census of Brazil, data on knowledge of Portuguese were cross-tabulated with data on its use as the principal language in the home. As a measure of assimilation, the latter cross-tabulation for foreign-born persons is especially effective, since it shows the degree to which the language of the country of immigration has become familiar to immigrants.

### 2. Coverage of tabulations

A serious limitation of the international comparability of language data results from the omission from the tabulations of persons in the youngest age groups, since there is a considerable amount of variation in the age groups omitted. In the Mexican census of 1940 the tabulations of language were limited to persons aged five years and over. In the 1930 census of Belgium, the lower age limit for tabulations of knowledge of the principal language of the country was two years. In the 1936 census of Ireland and the 1931 census of Scotland the lower age limit for tabulations of knowledge of Irish and Gaelic respectively was three years. Such limitations are presumably imposed because it is not considered correct to assign the language spoken by the parents to children who have not yet begun to talk or whose language pattern is not yet fixed. Where cross-tabulations of language data by age are feasible, international comparability would be improved if the data were tabulated separately for persons five years old and over, and also for any younger group that it might be considered necessary to cover for national purposes. The problem does not arise in connexion with tabulations of data on mother tongue, since these usually refer to the language spoken in the home in earliest childhood or to the language of one's ethnic group, and thus may properly be tabulated for persons of all ages.

A second limitation of coverage occurs in countries where inquiries concerning language are addressed only to persons in specified areas within the country, where a language other than the official language of the country is commonly used. In the 1931 census of England and Wales, for instance, enumeration and tabulations of persons speaking Welsh only or both Welsh and English were confined to Wales and Monmouthshire, while parallel data for those speaking Manx were tabulated only for the Isle of Man. In all such cases the languages in question were spoken by very few people outside the sections covered, so that the limitation of coverage was not important.

In the United States census of 1940 data on mother tongue were tabulated only for the white population. This was done because each other race in the country has a characteristic mother tongue, e.g. English for the Negroes, Chinese for the Chinese. For a similar reason, in the 1936 census of the Union of South Africa, tabulations on language were made for the Asiatic, Coloured and European populations, excluding the Bantu; and a few cross-tabulations were given only for Europeans.

With the exception of the variations in lower age limits, it may be said in general that the limitations of coverage of language tabulations have not been such as to impair seriously the international comparability of results.

### 3. The classification of languages

The establishment of a classification of languages for use in a census involves certain decisions as to what constitutes a distinct language, as opposed to a variant or dialect of a given

language. For example, the variations of speech found in different parts of China may be regarded as separate languages or all subsumed under the heading of "Chinese". The decision as to what should be regarded as a distinct language in each case necessarily depends in part on the need for data on the individual groups in question, and on the practicability of obtaining them. In the census of a country where several quite different variants of the native language are spoken, it may be most important to distinguish them, while in a census taken elsewhere it may be neither desirable nor practicable to treat those variants as distinct languages.

International differences in census practices in this matter do not seriously impair the comparability of results provided that the definitions of the sub-groups included in each major language category are uniform. Confusion may be created, however, by the use of a nomenclature of languages which is not familiar to persons in all countries, without adequate explanation of the categories listed. A standard international nomenclature of languages would be helpful to the national census agencies in making their classifications, and would reduce the possibilities of confusion and incomparability.

Differences in the selection of languages to be tabulated separately are of major importance as a source of difficulty in international analyses of the data. It is impossible, for example, to make a complete investigation of the international distribution of persons having a given mother tongue or currently speaking a given language unless that language is specified separately in the tabulations for all countries where it applies to a considerable number of people. It is partly for this reason that the Population Commission called attention to the desirability of making separate data available for each language of numerical importance in the country.

It is obviously impractical, however, to give separate statistics on all the languages which may be represented by very small numbers of persons in a given country. Since some combinations are inevitable, it becomes important both from the standpoint of international comparisons and of national analyses to devise a scheme of grouping the numerically less important languages in such a way as to minimize the sacrifice of information that results from not tabulating them separately. The practice followed in many censuses of putting such languages together in an indiscriminate category of "other languages" is not efficient from this point of view. It is evidently preferable to establish certain broad groups of languages that are related in accordance with some specified criterion, and to classify accordingly the languages not tabulated separately.

The question of grouping languages is involved also in the problem of arranging the list of languages for purposes of publication. In many censuses the languages have simply been arranged alphabetically or in the order of numerical importance. However, two different methods of grouping, based, respectively, on the geographical *locus* and on an analysis of language families, have been used in a few recent censuses. These groupings facilitate the application of the data to analyses of ethnic composition of the population.

The first type of grouping was made in a very simple form in the 1940 census of Mexico. All languages were classified as either native or European. In this census, persons speaking certain native languages were tabulated separately and the total of those speaking all other native languages was given together with a list of such languages.

A more elaborate application of the same principle was made in the 1940 census of the United States. European mother tongues were arranged in the following manner according to the geographical areas of Europe where the languages are most commonly spoken:

*North-western Europe:* English, Norwegian, Swedish, Danish, Dutch, Flemish, French.

*Central Europe:* German, Polish, Czech, Slovak, Magyar, Serbian, Croatian, Slovenian.

*Eastern Europe:* Russian, Ukrainian, Armenian, Lithuanian, Finnish, Romanian, Yiddish.

*Southern Europe:* Greek, Italian, Spanish, Portuguese.

This procedure would create difficulties if applied generally, because some languages are not readily assigned to any one geographical area.

The second method, that is, a classification according to families of languages, was applied in the 1931 census of India to the tabulations of mother tongue. The excerpt from the Indian tabulation scheme shown below indicates the complexity of this system:

Vernaculars of India:

1. Austric family
    a. Austronesian sub-family
        (1) Indonesian branch
            (*a*) Malay group
                (i) Malay
                (ii) Salon

b. Austroasiatic sub-family
(1) Mon-Khmer Branch
(*a*) Mon group
(i) Talaing
(*b*) Palaung — Wa group
(i) Wa
(ii) Danaw
(iii) Khamuk
(iv) Yang (unspecified)
(v) Yanglam
(vi) Palaung and Pale
(*c*) Khasi group
(i) Khasi
(*d*) Nicobar group
(i) Nicobarese
(2) Munda branch
(*a*) Kherwari (Santali, Mundari, Ho, etc.)
(*b*) Korku
(*c*) Kharia
(*d*) Juang
(*e*) Sawara
(*f*) Gadaba
(*g*) Munda (unspecified).

While this method might be valuable for the classification of native languages in other countries like India, its general application would require an amount of technical study of languages and their structure which might not be justified by the value of the results.

### 4. Tabulations of multilingual persons

In those censuses where data have been obtained on multilingual persons, there have been two major methods of tabulation.

The first method is exemplified by the 1941 census of Hungary, in which the number of persons speaking each listed language was given, with no differentiation made between single and multilingual persons. A separate tabulation was made, classifying each person by the one language used preferably or most often.

The second method consists of tabulating separately persons speaking only one language, classified by the language spoken, and bilingual or trilingual persons classified by the various language combinations. Among the censuses in which this method has been used are those of Belgium (1930), Canada (1941), England and Wales (1931), Mexico (1940) and Peru (1940).

In the census of Belgium an additional classification was tabulated, showing the preferred language for all persons having a knowledge of more than one of the official languages. The classifications were arranged as follows:

Persons speaking: French only, Flemish only, German only, French and Flemish, French and German, Flemish and German, the three national languages, none of the three national languages.

Persons speaking two or all three of the national languages, according to language used most frequently: French, Flemish, German.

In some censuses, broad linguistic categories have been used for tabulating the combinations of languages spoken by multilingual persons. As an example, one of the language lists used in the tabulations of the Peruvian census is shown below:

Spanish, Spanish and Quechua, Spanish and Aymara, Spanish and dialects, Spanish and English, Spanish and Italian, Spanish and German, Spanish and French, Spanish and another foreign language, Spanish and Quechua or Aymara and a foreign language, Quechua, Aymara, dialects.

Another example is the classification used for certain tabulations in the Mexican census:

Spanish only, native languages only, foreign languages only, Spanish and one or more native languages, Spanish and one or more foreign languages.

### 5. Tabulations of language data by other characteristics

Tabulations of data on language by other characteristics of the population are valuable for much the same purposes as tabulations of birthplace or nationality data in relation to other characteristics. The classifications of languages used for such cross-tabulations may be less detailed than those used for tabulations relating to language only, and the degree of detail may differ in tabulations on various subjects. In the census of Brazil (1940), for instance, some tabulations of language by other characteristics showed the specific language spoken in the home, while others merely indicated whether or not Portuguese was the language. In the 1940 Mexican census, data on the specific languages spoken were tabulated only by sex, while tabulations by other characteristics showed only the abbreviated groupings of languages reproduced in the preceding section of this chapter.

Table 21 shows the major characteristics tabulated in relation to language in recent censuses.

## Table 21. Types of cross-tabulations presented with data on language in recent censuses

(This table is limited to censuses where some data on language were obtained. "A" indicates that the given data related to mother tongue; "B" that they related to language or languages currently spoken; "C" that they related to knowledge of the principal language or languages of the country; "–" that they were not tabulated; ". ." that information on tabulations was not available or was not complete; "*" that the census year is different from that shown in table 12)

| Country | Census year | Sex | Age by sex | Urban-rural residence | Birthplace | | Nationality | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Native and foreign-born | Country of birth | Nationals and aliens | Country of nationality |
| AFRICA: | | | | | | | | |
| Union of South Africa. | 1936* | B – C[1] | B – C[1] | B – C[1] | B – C[2] | B[2] | B – C[1] | B – C[1] |
| AMERICA: | | | | | | | | |
| Brazil | 1940 | B – C | B – C | .. | B – C | .. | B – C | B – C[3] |
| Canada | 1941 | A – C | A – C | A – C | A – C | A – C | – | – |
| Costa Rica[4] | 1927 | .. | .. | .. | .. | .. | .. | .. |
| Cuba | 1943 | – | – | – | – | – | – | – |
| Dominican Republic | 1935 | .. | .. | .. | .. | .. | .. | .. |
| Guatemala | 1940 | A | – | – | – | – | – | – |
| Mexico | 1940 | B – C | B – C | –[5] | – | – | – | – |
| Nicaragua | 1940 | .. | .. | .. | .. | .. | .. | .. |
| Paraguay | 1936 | .. | .. | .. | .. | .. | .. | .. |
| Peru | 1940 | C[6] | – | – | – | – | – | – |
| United States of America[7] | 1940 | A | A | A | A | –[8] | – | – |
| ASIA: | | | | | | | | |
| India | 1931* | A | – | – | – | – | – | – |
| Philippines | 1939* | B – C | B – C | – | – | – | – | – |
| Turkey | 1935* | B | – | –[9] | – | – | – | – |
| EUROPE: | | | | | | | | |
| Austria | 1934 | A | – | – | – | – | A | – |
| Belgium | 1930* | C | C | C[10] | – | – | C[11] | – |
| Bulgaria | 1934* | B | – | B | – | – | – | – |
| Czechoslovakia | 1930* | A | A | A[12] | – | – | A | – |
| Finland | 1940 | B | – | B | – | – | – | – |
| Germany[13] | 1939 | B | – | – | – | – | B | B |
| Greece | 1940 | .. | .. | .. | .. | .. | .. | .. |
| Hungary | 1941 | B | .. | .. | .. | .. | .. | .. |
| Ireland | 1936* | C | C | C | – | – | – | – |
| Norway | 1930* | – | – | B | – | – | – | – |
| Poland | 1931 | B | – | B | – | – | – | – |
| Romania | 1930 | A – C | – | A – C | – | – | – | – |
| Switzerland | 1941 | A | – | – | – | – | A | – |
| United Kingdom | | | | | | | | |
| England and Wales[14] | 1931 | C | C | C[15] | – | – | – | – |
| Scotland | 1931 | C | C | – | C | – | – | – |
| USSR | 1939 | .. | .. | .. | – | – | .. | .. |
| Yugoslavia[4] | 1931 | .. | .. | .. | .. | .. | .. | .. |

[1] These tabulations were shown only for the Asiatic, Coloured and European populations.

[2] These tabulations were shown only for the European population.

[3] In the available tabulations, these cross-classifications were restricted to those aliens who did not have Portuguese as their home language and those who did not speak Portuguese at all.

[4] The available tabulations showed data on language without any cross-classifications.

[5] Language data were tabulated separately for individual localities of over 10,000 population.

[6] Three separate schedules were used for different types of areas. Two schedules called for mother tongue and the other languages spoken by the individual; the other called for ability to speak Spanish and other languages spoken by the individual. The results were combined in the course of tabulation into a classification by "language" without explanation of the method of combination. Because of the phrasing of the questions, it appears that tabulations were complete only for persons speaking Spanish.

[7] All these data were tabulated for the white population only.

[8] The data were tabulated by country of birth of parents and not by country of birth of the individual.

[9] Language data were tabulated separately for localities over and under 10,000 population.

[10] These data were tabulated separately for six size-groups of communes.

[11] This tabulation was restricted to a designation of whether or not of Belgian nationality for persons unable to speak any of the three official languages.

[12] Data on "ethnic nationality" by urban-rural residence were tabulated only for Czech nationals. For total population the data were tabulated separately for ten size-groups of communes.

[13] Available census volumes show tabulations of language data for aliens only.

[14] Language data were tabulated only for selected areas in which languages other than English are generally spoken.

[15] These data were tabulated for Wales and Monmouthshire only.

(*a*) *Sex and age.* The remarks of the Population Commission at its fourth session regarding tabulations of language data included the suggestion that such data be classified by age groups for each sex. In language tabulations, as in birthplace and nationality statistics, a classification by sex and age groups is valuable as a means of analysing dynamic factors in the ethnic make-up of the population and understanding the social position of various ethnic groups. Sex and age classifications are especially important for the full understanding of data on languages currently spoken and on ability to speak certain specified languages. It has already been mentioned that a minimum age limit may be required for tabulations on those subjects, since it may not be considered valid to impute to very young children the languages spoken by their parents. In addition, classifications permitting the separate analysis of data for children of school age and for adults at various age levels are needed in order to take into account the influence of schooling and of the linguistic education which comes from social contacts throughout life.

As shown in table 21, tabulations of language data by sex were found in all but two of the census reports where any data on language were tabulated. The exceptions are the 1927 census of Costa Rica, of which complete tabulations are not available, and the 1930 census of Norway. In addition, in the 1931 census of India, the tabulations of mother tongue were made by sex, but not the cross-tabulations of mother tongue and other languages spoken.

An additional classification of each sex by age groups was made in three of the eight censuses in which data on mother tongue were tabulated by sex, and in four of the ten censuses in which data on language currently spoken were tabulated by sex. Of the eleven censuses in which data on knowledge of the principal language of the country were tabulated by sex, nine showed a further classification by age.

The age groups proposed by the Population Commission for tabulations of language data were: under 5 years, ten-year groups from 5 to 64, 65 and over. This distribution could be derived from the tabulations shown in only three censuses, those of Canada (1941) and Czechoslovakia (1930), where five-year age groups were tabulated up to ages 89 and 99, respectively, and that of the Philippines (1939). As shown in table 22, in most of the other censuses various five- or ten-year age groups were used, except at the lower ages, where the groupings varied according to the lowest age for which language data were tabulated.

**Table 22. Age classifications used in cross-tabulations of sex and age with data on language in recent censuses**

(This table is limited to censuses where some tabulations of language data by age were available. "A" indicates that the specified age groupings were cross-tabulated with data on mother tongue; "B" that they were cross-tabulated with data on language or languages currently spoken; "C" that they were cross-tabulated with data on knowledge of the principal language or languages of the country; "–" that age groupings of the specified type were not shown; "*" that the census year is different from that shown in table 12)

| *Country* | *Census year* | *Type of data* | *Age range covered by 5-year groups (or by groups convertible to 5-year groups)* | *Age range covered by 10-year (but not 5-year) groups* | *Other age groups tabulated* |
|---|---|---|---|---|---|
| AFRICA: | | | | | |
| Union of South Africa | 1936* | B[1] | – | – | 0-6, 7-20, 21 and over |
| | | C[1] | 10 to 79 | – | 0-6, 7-9, 80 and over |
| AMERICA: | | | | | |
| Brazil | 1940 | B – C | 5-9 | 10 to 99 | 100 and over |
| Canada | 1941 | A – C | 0 to 89 | – | 90 and over |
| Mexico | 1940 | B – C | 5 to 14 | – | 15-39, 40 and over |
| United States of America | 1940 | A[2] | – | 25 to 64 | 0-24, 65 and over |
| ASIA: | | | | | |
| Philippines | 1939* | B – C | 0 to 24 | 25 to 64 | 65 and over |
| EUROPE: | | | | | |
| Belgium | 1930* | C | – | – | 2-14, 15-20, 21-59, 60 and over |
| Czechoslovakia | 1930* | A[3] | 0 to 99 | – | 100 and over |
| Ireland | 1936* | C | 5 to 24 | 25 to 64 | 3-4, 65 and over |
| United Kingdom | | | | | |
| England and Wales | 1931 | C[4] | 5 to 14 | 15 – 24 | 0-2, 3-4, 25-44, 45-64, 65 and over |
| Scotland | 1931 | C | 5 to 99 | – | 3-4, 100 and over |

[1] These tabulations were shown only for the Asiatic, Coloured and European populations.

[2] The data were tabulated for the white population only.

[3] The tabulations were labelled "ethnic nationality" but pertained almost exclusively to the mother tongue reported.

[4] Language data were tabulated only for selected areas in which languages other than English are generally spoken.

The age classifications appropriate for language data may be different from those used for tabulations of other population characteristics by age groups; for example, special groupings to identify the population of school age may be desirable in tabulations of data on language currently spoken and on ability to speak the principal language or languages of the country. However, it is advantageous that the age groupings used for these tabulations be consistent with and convertible to the classifications generally used for other purposes. This principle was observed in the recommendations of the Population Commission.

(*b*) *Birthplace and nationality.* The Population Commission also called attention to the desirability of tabulating language data separately for natives of the country where the census is taken and for foreign-born persons, or for nationals and aliens. Such tabulations are valuable for analysing the distinct problems of immigrant and native linguistic minorities. Data on mother tongue for the native population in countries of immigration, for example, can be used to show to what extent the ancestral languages of the immigrants have been passed on, together with whatever other cultural traits may go with them, to their descendants in the new country. Data on language currently spoken and on ability to speak the principal language, when cross-tabulated by nativity, permit a study of the degree of linguistic assimilation of both immigrants and their descendants.[4] The distinction between nationals and aliens has a similar value, with reference to the persistence of original linguistic characteristics after the acquisition of nationality in the country of immigration.

It is also valuable, as the Population Commission pointed out, to tabulate language data for the foreign-born classified by specific country of birth, in order to make the above-mentioned analyses specifically for immigrants from various foreign countries. For analysis of the ethnic origins of the people, subdivisions by country of birth are particularly valuable in the case of languages which are spoken by many nations, such as English, French, Spanish and Portuguese. Classifications by nationality are also useful in this connexion, but their scope is more restricted, being limited to persons who have not become naturalized in the country of immigration.

Of the censuses examined, as shown in table 21, two showed a tabulation of mother tongue by birthplace, one giving the data by specific country of birth and the other separately for native and foreign-born population only. One census included a tabulation of language currently spoken by country of birth, and another gave a tabulation of language currently spoken for the native and foreign-born only. A tabulation of knowledge of the principal language of the country by country of birth was included in one census, while a similar tabulation for native and foreign-born persons only was included in three.

Three censuses included a tabulation of mother tongue for nationals and aliens only, and three censuses included a tabulation of language currently spoken by country of nationality. A tabulation of knowledge of the principal language of the country by country of nationality was found in two censuses, and a similar tabulation for nationals and aliens only was found in one.[5]

(*c*) *Literacy.* The meaning of a cross-tabulation of data on literacy with language data depends on the definition of literacy used for this purpose; that is, whether it refers to ability to read and write in *any* language, or in the specific language to which the language data refer. The definitions of literacy most commonly used for census purposes, and the one recommended by the Population Commission as an international standard,[6] refer to ability to read and write any language. Literacy data defined in this way, if cross-tabulated with data on knowledge of the principal language of the country, would not, of course, show exactly how many persons could read and write that language. However, they would have considerable relevance to the educational problems involved in linguistic and cultural assimilation.

In those censuses where data on literacy and language have been cross-tabulated, the former have generally been defined without particular reference to the language indicated for the latter classification. In the census of Turkey (1935) the language spoken in the home was tabulated by literacy, which was defined as literacy in the "new characters" or in any Western language. Data were given separately for those who could read only and for those who could both read and write. In the census of Bulgaria (1934) data on language currently spoken were cross-tabulated with data on literacy in any language, which was defined as ability to both read and write.

[4] In some censuses, e.g. those of Brazil (1940), and the Union of South Africa (1936), data on duration of residence of the foreign-born have also been tabulated by language, thus permitting the time factor to be considered in the analysis of linguistic assimilation.

[5] Tabulations by country of nationality and for nationals and aliens only were included in the census of Brazil (1940), both for data on language currently spoken and on knowledge of Portuguese. Tabulations by country of nationality were, however, restricted to a special group of the population (see table 21).

[6] See chapter IX.

(*d*) *Other characteristics.* Table 21 shows that in four censuses data were given for urban and rural areas on mother tongue, in five on language currently spoken, and in six on knowledge of the principal language of the country. In addition, several censuses included separate tabulations of language data for large cities. In the language tabulations of the United States census (1940) the rural population was further subdivided into farm and non-farm.

A cross-tabulation of the economically active population by mother tongue and industry was found in the census of Czechoslovakia (1930), and by language spoken in the home and by occupation in the census of Turkey (1935). The census of Czechoslovakia also gave a tabulation of occupational status by mother tongue. In the census of the Union of South Africa (1936) industry data were tabulated by language currently spoken. In the census of Ireland (1936) data on occupation were tabulated by knowledge of Gaelic.

# IX. EDUCATIONAL CHARACTERISTICS

*(prepared by the Statistical Office of the United Nations)*

## A. Importance of data on educational characteristics

Information on the educational status of the population is important both at the national and the international level in connexion with the planning of educational programmes, dissemination of information, and programmes for economic, social and political advancement. The value of data on educational characteristics in these connexions is too obvious to require discussion. It may be pointed out also that a classification of the people by educational status, as an indication of their cultural level and position in the community, when related to other characteristics of the population such as marital status, occupation and income, has an important value for statistical analyses of sociological and economic problems. It is not surprising to find that some kind of inquiry on the educational characteristics of the population has been included in the majority of recent population censuses.

The value of these data for international purposes makes it important to achieve some degree of standardization in the definitions and methods of collecting and tabulating the data. The problem of standardization in this field, however, is especially difficult, not only because of the considerable variations in educational systems and cultural conditions in the countries of the world, but also because of the large differences in their statistical needs and facilities.

## B. Principal types of data on educational characteristics

Three principal varieties of statistics on educational characteristics have been obtained in recent population censuses: (1) data on literacy; (2) data on educational level, that is, on the amount or type of schooling attained by each individual; and (3) data on school attendance at the time of the census or during a specified previous period. The type of inquiry which is most appropriate in a given country depends largely on the educational status of the people. This consideration is particularly important in relation to the choice between an inquiry on literacy and one on educational level. In some countries where illiteracy is a major problem, a question on literacy is the only one included in the population census. In other countries, where nearly all the people are considered literate, data on educational level only are obtained. In still another group of countries both literacy and educational level are investigated in the census. Finally, there are some countries where neither characteristic is investigated. The types of questions on education which it is worthwhile to ask in the population census depend also on the coverage and regularity of school censuses, current educational statistics, special surveys on education, etc., in each country, though these alternative sources of data cannot provide all the analytical material that can be furnished by the census figures.

The Population Commission, recognizing the need for flexibility in international standards for data on this subject, recommended at its third session that in 1950 population censuses "measures or reliable estimates of the extent of literacy and illiteracy be obtained in addition to data on level of formal education, where the latter data are considered feasible".[1] Thus, the Commission proposed data on literacy as the minimum basis for international comparisons of educational status of the population, but at the same time recognized the value of more complex inquiries where feasible. At its fourth session the Commission also mentioned school attendance as a valuable type of data to be obtained in population censuses.[2]

The Committee on the 1950 Census of the Americas, at its second session, listed both literacy and educational level among the subjects to be investigated in the censuses of American nations, without indicating any preference for one over the other. School attendance also was mentioned by the Committee as a topic to be investigated where possible.[3]

The principal varieties of data relating to education obtained in the recent censuses of various countries are shown in table 23.

[1] *Report of the Population Commission* (third session) (*op. cit.*), p. 17.

[2] *Report of the fourth session of the Population Commission (op. cit.)*, p. 30.

[3] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . .* (*op. cit.*), p. 22.

## Table 23. Major types of questions on education asked in recent censuses

("x" indicates that the given type of question was asked; "–" that it was not asked; ".." that information was not available)

| Country | Census year | Literacy | Educational level | School attendance |
|---|---|---|---|---|
| AFRICA: | | | | |
| Egypt | 1947 | x | x | – |
| Union of South Africa | 1946 | x[1] | – | – |
| AMERICA: | | | | |
| Argentina | 1947 | x | x | x |
| Brazil | 1940 | x | x | x |
| Canada | 1941 | – | x | x |
| Chile | 1940 | x | x | – |
| Colombia | 1938 | x | – | – |
| Costa Rica | 1927 | x | x | x |
| Cuba | 1943 | x | x | x |
| Dominican Republic | 1935 | x | – | x[2] |
| El Salvador | 1930 | x | – | x |
| Guatemala | 1940 | x | – | x |
| Honduras | 1945 | x | x[3] | x[4] |
| Mexico | 1940 | x | x | x |
| Nicaragua | 1940 | x | x | x |
| Panama | 1940 | x | x | x |
| Paraguay | 1936 | x | x[5] | x |
| Peru | 1940 | x | x[6] | x[7] |
| United States of America | 1940 | – | x | x |
| Venezuela | 1941 | x | – | x |
| ASIA: | | | | |
| India | 1941 | x | x | – |
| Japan | 1940 | – | x | – |
| Philippines | 1948 | x | x | x |
| Syria | 1947 | x | – | – |
| Turkey | 1940 | x | – | – |
| EUROPE: | | | | |
| Austria | 1934 | – | – | – |
| Belgium | 1947 | x | x | – |
| Bulgaria | 1946 | x | x | x |
| Czechoslovakia | 1947 | – | – | – |
| Denmark | 1940 | – | x | – |
| Finland | 1940 | .. | x | .. |
| France | 1946 | x | – | – |
| Germany | 1939 | .. | .. | .. |
| Greece | 1940 | x | x | – |
| Hungary | 1941 | x | x | x |
| Ireland | 1946 | – | – | –[8] |
| Italy | 1936 | – | – | – |
| Luxembourg | 1947 | – | – | – |
| Netherlands | 1947 | – | x | – |
| Norway | 1946 | – | – | – |
| Poland | 1931 | x | x | x |
| Portugal | 1940 | x | x | x |
| Romania | 1930 | x | x | – |
| Spain | 1940 | x | – | – |
| Sweden | 1945 | – | x | x |
| Switzerland | 1941 | – | – | – |
| United Kingdom | | | | |
| England and Wales | 1931 | – | – | – |
| Northern Ireland | 1937 | – | – | – |
| Scotland | 1931 | – | – | – |
| USSR | 1939 | x | x | x |
| Yugoslavia | 1931 | x | .. | .. |
| OCEANIA: | | | | |
| Australia | 1947 | – | – | – |
| New Zealand | 1945 | – | – | – |

[1] This subject was investigated only in the enumeration of the Bantu population.

[2] The question referred to enrolment at school rather than actual attendance at the census date.

[3] The only question asked referred to completion of elementary school.

[4] The question was asked only for persons 7-15 years old.

[5] The question referred only to highest grade completed in grammar school.

[6] This question was not asked of persons in rural areas.

[7] Only persons living in the larger cities were asked what kind of studies they were pursuing at the time of the census.

[8] This question was limited to persons 14-19 years old who had never been gainfully employed.

It can be noted that in forty of the fifty-three censuses one or more questions were asked on educational characteristics. Of the thirteen censuses where no such inquiry was made, eleven were censuses of European countries and two were of countries in Oceania.

Direct questions on literacy were asked in thirty-three of the censuses, and in twenty-two of these some type of question on educational level was asked in addition. There were six censuses in which questions on educational level were asked without any direct questions on literacy. These six were the censuses of Canada (1941), the United States (1940), Japan (1940), Denmark (1940), the Netherlands (1947) Sweden (1945). In addition, the nature of the tabulations in the census of Finland (1940) indicates that the same method was employed in this census. In Canada and the United States, literacy was investigated in the population censuses until recently. In the Canadian census of 1941 the literacy question was replaced by questions on school attendance and years of schooling, because the proportion of the population which was illiterate had become insignificant. A similar consideration prompted the change in the United States census of 1940 from a question on literacy to one on grade of school completed, though there seems to be a continued demand in that country for literacy data. In a number of the European countries where educational level was investigated instead of literacy, only a very small proportion of the population is illiterate.

In censuses where direct questions on literacy are not asked, but where questions are asked on educational level, it may not be difficult to phrase the latter in such a way as to provide also the data on literate and illiterate persons, recommended by the Population Commission as a minimum standard for international comparisons. Adequate estimates of the extent of literacy and illiteracy may be derived also from the distribution of the population by educational level, with the aid of supplementary studies. For example, studies may be made of samples of the population to determine what proportion of persons are able to read and write, among various population groups classified by amount of formal education received, age, and other pertinent characteristics. This possibility was envisaged by the Population Commission when it recommended that reliable estimates, if not actual census counts, of illiteracy be made in countries where data on educational level were to be obtained in the population census.

Table 23 also shows that current school attendance was investigated in the censuses of twenty-three countries (sixteen in America, six in Europe, and one in Asia). Much information on this topic can usually be obtained through the current administrative records of the school system or by school censuses. But the population census, as a means of investigating this subject, has advantages which are not always found in the other sources of data, notably uniformity of time reference, definitions, and methods in all areas of the country and in all types of schools, and the provision of information on ages of the children and other characteristics to which school attendance may usefully be related.

## C. Literacy data

### 1. Data recommended by international agencies

The Population Commission recommended at its third session that literacy should be defined for census purposes as the ability both to read and to write a simple message in any language. The Commission recommended that the census questions on this topic should cover at least the population fifteen years old and over.[4] The Committee on the 1950 Census of the Americas made the same recommendations on definition and coverage of these data, and added: "It is recommended that literacy be investigated by direct questions or by reliable indirect means, according to the desires of each country . . . (*Note:* Measures should be taken to avoid classifying as literates persons who can only write their name.)"[5]

At its fourth session, the Population Commission suggested that the data on literacy and illiteracy should be tabulated, for each sex, by the following age groups: under 15 years (if the census questions on literacy covered any person under 15), 15 to 19, 20 to 24, ten-year groups from 25 to 64, 65 years and over. If the literacy questions covered the population over 10 years old (or a lower minimum age), the Commission further suggested that the age group 10 to 14 years should be tabulated separately, in order to extend the amount of information available on an internationally comparable basis.[6] The Committee on the 1950 Census of the Americas made the same recommendation.[7]

[4] *Report of the Population Commission* (third session) (*op. cit.*), pp. 17-18.

[5] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . .* (*op. cit.*), p. 22.

[6] *Report of the fourth session of the Population Commission (op. cit.)*, p. 29.

[7] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . .* (*op. cit.*), p. 29.

## Table 24. Types of questions on literacy asked in recent censuses, and categories identified in the tabulations

(This table is limited to censuses where data on literacy were obtained. "x" indicates that the given type of question was asked or that the given category was shown in the published tabulations; "–" that it was not asked or was not shown; ". ." that information was not available or was not complete)

| Country | Questions asked on schedule | | | | Categories shown in tabulations | | | |
|---|---|---|---|---|---|---|---|---|
| | Census year | Ability both to read and write | Ability to read | Ability to write | Census year | Able both to read and write | Able to read but not to write | Able to read without regard to ability to write | Able to write without regard to ability to read |
| AFRICA: | | | | | | | | | |
| Egypt | 1947 | x | x | x | 1937 | x | – | – | – |
| Union of South Africa | 1946 | x[1] | x[1] | – | 1936 | – | – | – | – |
| AMERICA: | | | | | | | | | |
| Argentina | 1947 | – | x | x | 1947 | – | – | – | – |
| Brazil | 1940 | x | – | – | 1940 | x | .. | .. | .. |
| Chile | 1940 | – | x | – | 1940 | – | – | x | – |
| Colombia | 1938 | – | x | – | 1938 | – | – | x | – |
| Costa Rica | 1927 | – | x | x | 1927 | x | x | .. | .. |
| Cuba | 1943 | x | – | – | 1943 | – | – | x[2] | – |
| Dominican Republic | 1935 | – | x | x | 1935 | x | x | .. | .. |
| El Salvador | 1930 | – | x | x | 1930 | x | x | – | – |
| Guatemala | 1940 | x | x | – | 1940 | x | x | – | – |
| Honduras | 1945 | – | x | x | 1945 | – | – | x | x |
| Mexico | 1940 | x | x | – | 1940 | x | x | – | – |
| Nicaragua | 1940 | x | x | – | 1940 | .. | .. | .. | .. |
| Panama | 1940 | x | x | – | 1940 | – | – | x | – |
| Paraguay | 1936 | – | x | x | 1936 | .. | .. | .. | .. |
| Peru | 1940 | – | x[3] | – | 1940 | – | – | – | – |
| Venezuela | 1941 | – | x | x | 1941 | x | x | – | – |
| ASIA: | | | | | | | | | |
| India | 1941 | x[4] | x[4] | – | 1931 | x | – | – | – |
| Philippines | 1948 | x | – | – | 1939 | x | – | – | – |
| Syria | 1947 | x | – | – | 1947 | .. | .. | .. | .. |
| Turkey | 1940 | – | x[5] | x[5] | 1935 | x | x | – | – |
| EUROPE: | | | | | | | | | |
| Belgium | 1947 | x | – | – | 1930 | x | – | – | – |
| Bulgaria | 1946 | x | – | – | 1934 | x | – | – | – |
| Czechoslovakia | 1947 | – | – | – | 1930 | x | x | – | – |
| France | 1946 | – | x | x | 1946 | .. | .. | .. | .. |
| Greece | 1940 | x | – | – | 1940 | .. | .. | .. | .. |
| Hungary | 1941 | x | x | – | 1941 | x | x | – | – |
| Poland | 1931 | – | x | x | 1931 | x | x | – | – |
| Portugal | 1940 | – | x | – | 1940 | – | – | x | – |
| Romania | 1930 | –[6] | x[6] | – | 1930 | – | – | x[6] | – |
| Spain | 1940 | – | x | x | 1940 | .. | .. | x | .. |
| USSR | 1939 | x | x | – | 1939 | .. | .. | x | – |
| Yugoslavia | 1931 | .. | x | .. | 1931 | x | x | – | – |

[1] These questions were asked only for Bantu and referred to ability to read and write in native languages, English or Afrikaans.

[2] Although the only question asked on literacy concerned ability to both read and write, the published census results include a tabulation for persons knowing how to read. No explanation of this apparent discrepancy between the kind of question asked and the type of data published was found.

[3] The question referred to ability to read Spanish.

[4] A question on literacy in English was also asked.

[5] These questions referred to ability to read and write the new Turkish alphabet.

[6] The question asked on the schedule was, "Does he know how to read and write?" However, the instructions stated that persons who could at least read should answer "yes".

### 2. TYPES OF LITERACY DATA OBTAINED IN RECENT CENSUSES

The types of questions relating to literacy which were asked in those censuses where any data on this subject were obtained, are indicated in table 24.

Three principal varieties of procedure have been used. The first method is to ask only the single question, whether the individual is able to both read and write, thus obtaining an enumeration of literate persons in accordance with the definition recommended by the Population Commission and the Committee on the 1950 Census of the Americas. This method was used in seven of the thirty-three censuses in which literacy data were obtained. The second method, which was used in twenty-one censuses, is to determine both

whether the individual can read and whether he can write, either by asking separate questions on ability to read and ability to write, or by asking whether he can: (*a*) both read and write, (*b*) read only, or (*c*) neither. This procedure yields, in addition to the recommended measures of literacy, an enumeration of what may be called "semi-literate" persons, that is, persons able to read but not to write. The third method, used in five of the censuses, is to ask only whether the individual can read, without regard to ability to write. This method does not permit the derivation of statistics corresponding to the recommended concept.

In general, the phrasing of the questions or the instructions for answering them have been such as to imply that persons should be considered as able to read or write if they could do so in any language, though this has not always been explicitly stated. In a few censuses (e.g. Union of South Africa 1946, Peru 1940 and Turkey 1940), the questions were asked in terms of literacy in a specified language or languages. In the census of India (1941) a question on ability to read English was asked in addition to the regular questions on literacy.

The meaning of the data on literacy and illiteracy obtained in a population census obviously depends to an important degree upon the extent of reading and writing ability that is assumed by the enumerators and respondents to be required for an affirmative answer. However, it has seldom been made clear in the census questions and instructions used in the various countries what criteria of reading and writing ability should be applied. General adoption of the criterion recommended by the international agencies, that is, ability to read and write *a simple message* in any language, would help to improve the comparability and meaningfulness of census statistics on this subject.

An examination of the tabulations of literacy and illiteracy statistics presented in the publications of those censuses for which the publications were available indicates that in most cases the categories tabulated corresponded to those identified on the census schedules. However, in those censuses where separate questions were asked on ability to read and ability to write, or on ability to read and write and ability to read but not write, there was some variation of tabulation procedures. The most common procedure in such censuses was to tabulate the numbers of persons able both to read and to write, those able to read but not to write, and those able neither to read nor to write. These three categories could be identified in the censuses of Costa Rica (1927), the Dominican Republic (1935), El Salvador (1930), Guatemala (1940), Mexico (1940), Venezuela (1941), Czechoslovakia (1930), Hungary (1941), Poland (1931), Turkey (1935) and Yugoslavia (1931). In the censuses of Egypt (1937) and India (1931), however, the published tabulations showed only the two groups, able both to read and to write, and all other. In the census of Honduras (1945), the tabulations on ability to read and to write were made independently; that is, persons were classified first as able to read or not, and second as able to write or not, without making a count of those able both to read and to write. It may be assumed, however, that nearly all persons classified as able to write could also read. In the census of Panama (1940), the tabulations showed only the numbers of persons able to read and unable to read, though the questions on the census schedules identified also persons able both to read and to write.

In many of the censuses, no statistics were presented for persons with literacy unstated, and in most of these instances it was not explained in the publications how such persons had been classified.

### 3. Tabulations of literacy data by age and sex

The tabulations of literacy statistics by age groups are especially important from the standpoint of international comparisons because census statistics on this subject are commonly restricted to the population above a given minimum age, and this minimum varies from country to country. Thus the only means of obtaining comparable figures for different countries is to find a common age range which can be identified by means of the age classifications given in the literacy tabulations. The age classification is also exceedingly important as a means of studying the progress that has been made in reducing illiteracy in each country, which is shown through a comparison of the proportions of illiterates in the younger and older groups.

The age classifications presented in the published tabulations of illiteracy data, for those censuses in which this topic was investigated and the publications of which were available, are shown in table 25.

## Table 25. Age classifications used in tabulations of data on literacy in recent censuses

(This table is limited to censuses where tabulations of literacy data by age were available. "–" indicates that the given type of classification was not shown; ". ." that information was not complete; "*" that the census year is different from that shown in table 23)

| Country | Census year | Minimum age | Age range classified by: Single years | 5-year groups (but not single years) | 10-year groups (but not 5-year groups) | Other age groups tabulated |
|---|---|---|---|---|---|---|
| **AFRICA:** | | | | | | |
| Egypt | 1937* | 5 years | – | 5 to 19 | 20 to 59 | 60 and over |
| **AMERICA:** | | | | | | |
| Brazil | 1940 | 5 years | . . | 5 to 19 | 20 to 79 | 7-14, 80 and over |
| Chile | 1940 | 7 years | 7 to 100 | – | – | 101 and over |
| Colombia | 1938 | 7 years | 7 to 14 | – | – | 15-29, 30 and over |
| Costa Rica | 1927 | 0 years | . . | . . | . . | 0-8, 9 and over |
| Cuba | 1943 | 10 years | 10 to 14 | 15 to 19 | – | 20 and over |
| El Salvador | 1930 | 0 years | – | 0 – 4 | 5 to 14, 30 to 99 | 5-7, 8-14, 15-17, 18-22, 23-29, 100 and over |
| Honduras | 1945 | 0 years | – | 15 to 24 | – | Under 7, 7-14, 25 and over |
| Mexico | 1940 | 6 years | – | 10 to 14 | – | 6-9, 15-39, 40 and over |
| Panama | 1940 | 10 years | – | 10 to 39 | 40 to 69 | 70 and over |
| Peru | 1940 | 6 years | 6 to 29 | – | 30 to 59 | 60 and over |
| Venezuela | 1941 | 7 years | 7 to 14 | 15 to 19 | 20 to 69 | 70 and over |
| **ASIA:** | | | | | | |
| India | 1931* | 5 years | – | 5 to 19 | – | 20 and over |
| Philippines | 1939* | 10 years | – | 10 to 24 | 25 to 64 | 65 and over |
| Turkey | 1935* | 0 years | 5 to 19 | 0 – 4; 20 to 94 | – | 95 and over |
| **EUROPE:** | | | | | | |
| Belgium | 1930* | 7 years | – | – | – | 7-14, 15-20, 21-59, 60 and over |
| Bulgaria | 1934* | 0 years | – | 10 to 69 | – | 0-7, 8-9, 70 and over |
| Hungary | 1941 | 0 years | 5, 6, 14, 20, 21, 24, 25, 49, 50, 60, 70 | 0 to 79 | – | 80 and over |
| Poland | 1931 | 5 years | 5 to 14 | 15 to 29 | 30 to 59 | 60 and over |
| Portugal | 1940 | 7 years | 7 to 119 | – | – | – |
| Romania | 1930 | 7 years | – | – | – | 7-12, 13-19, 20-64, 65 years and over |
| Spain | 1940 | . .[1] | – | 10 to 19 | 20 to 59 | 60 and over |
| USSR | 1939 | 9 years | . . | . . | . . | 9-49, 50 and over |
| Yugoslavia | 1931 | 11 years | – | 15 to 99 | – | 11-14, 15-17, 18-19, 100 and over |

[1] Data on literacy by age groups were obtained in response to the demographic questionnaire circulated to Governments by the Statistical Office of the United Nations. It was not possible to determine from the form in which the data appear whether any minimum age was applied.

A minimum age limit for the tabulations of literacy data was used in nineteen of the twenty-five censuses for which information was available. The limit most commonly used was 7 years; that limit was found in the tabulations of eight censuses. In four censuses the limit was 5 years, in two it was 6 years, in one it was 9 years, in three censuses it was 10 years, and in one it was 11 years (in many cases the minimum age to which the questions on literacy on the census schedules applied was lower than the minimum for tabulations).

There were two censuses (Dominican Republic 1935 and Guatemala 1940) where no classification by age groups was given in the literacy tabulations, except the minimum age limitation. The age classifications shown in the remaining censuses varied in detail from a simple dichotomy of children below an age at which they might be expected to have become literate and persons above that age (as in the census of Costa Rica 1927) to a classification by single years of age from 7 to 119 years, presented in the 1940 census of Portugal. The age groupings used in the censuses lying between these extremes were exceedingly diverse, few censuses having the same types of grouping. Seven censuses, including those of Bulgaria, Chile, Hungary, Philippines, Portugal, Turkey and Yugoslavia gave age classifications that could be converted to the standard proposed by international agencies (under 15 years, 15 to 19, 20 to 24, and ten-year groups from 25 to 64). However, there was no common age group which could be identified for purposes of international comparisons in the tabulations of all the censuses. The group 7 years and over could be identified only in the eight censuses where 7 years was the minimum age for the literacy tabulations, and

in the census of Honduras. The group 10 years and over could be identified in seventeen of the twenty-five censuses; the group 15 and over in twenty-one censuses.

The chief requirement for improved comparability of census data on literacy is evidently the use of more detailed age groupings in tabulations on this subject in many censuses, and the acceptance of a uniform international standard as a basis for the elaboration of these groupings.

## D. Data on educational level

### 1. Data recommended by international agencies

The measure of educational level recommended by the Population Commission at its third session, for use in those 1950 censuses of population in which the subject was to be investigated, was the highest level of schooling attained by the individual in the regular educational system of the country, in terms of completed grades or years of elementary or intermediate school, university, etc.[8] The Commission suggested at its fourth session that the tabulations on this subject should show the level of schooling attained in terms of single numbers of completed grades or years, and that they should be made, for each sex, by at least the following age groups: under 25 years (if persons under 25 were covered by the questions on educational level), ten-year groups from 25 to 64, 65 years and over. In censuses where the questions on educational level included population groups under 25 years of age, the Commission recommended that data be tabulated also for the groups 5 to 9, 10 to 14, 15 to 19, and 20 to 24, to the extent that they were included.[9] The same recommendations were adopted by the Committee on the 1950 Census of the Americas at its second session.[10]

### 2. Questions and definitions used in recent censuses

The types of questions on educational level asked in the twenty-nine recent censuses where this subject was investigated, are shown in table 26.

A study of this table reveals points of disagreement, but also points of basic agreement in the types of information requested. In twelve of the twenty-eight censuses, the questions were such as to yield the type of data recommended by international agencies, that is, an indication of the highest level of education attained in terms of specific school grades or years completed in elementary, intermediate or advanced educational institutions. An inquiry concerning highest grade completed in elementary school only was made in three other censuses — those of Chile (1940), Honduras (1945) and Paraguay (1936). Only the total number of years of school attendance was reported in two censuses, Canada (1941) and Cuba (1943); in these censuses the grade or year completed was not called for.

In eight censuses information was obtained only on the level of institutions in which instruction had been completed (elementary or intermediate school, university, etc.) without a statement of specific grade completed. This information, in some cases, was derived from a question on degrees or diplomas held or type of examinations passed, rather than from a direct question on highest institution completed. Data on the number of persons completing *specified* schools were obtained in two of these censuses: the 1939 census of the USSR, where the question referred to completion of "middle" and "higher" schools, and the 1947 census of the Netherlands, where a question was asked on university degrees held. Inquiries regarding educational achievement in three censuses — Costa Rica (1927), Japan (1940), and Panama (1940) — were confined to the highest institution attended, without regard to completed instruction. Procedures such as these somewhat reduce the work of enumeration and compilation of the results, but at the expense of sacrificing valuable information.

In the census of Denmark (1940) the inquiry on education was limited to persons fourteen to twenty-nine years of age. Such an age limitation greatly restricts the analytical value of the results, for the comparison of the educational attainments of the elder and younger generations is an especially valuable means of studying the progress achieved in education during past years, and of predicting future trends in the educational attainments of the population as a whole.

In collecting data on educational attainment in population censuses, it is important to make clear to enumerators and respondents how instruction received in special types of schools (vocational schools, correspondence schools, etc.) should be dealt with. Specific questions on such instruction are one means of achieving this purpose, as well as a source of useful information. Where questions on instruction in special types of schools are not

[8] *Report of the Population Commission* (third session) (*op. cit.*), p. 18.

[9] *Report of the fourth session of the Population Commission (op. cit.)*, p. 30.

[10] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . .* (*op. cit.*), pp. 22, 29-30.

## Table 26. Types of questions on educational level asked in recent censuses and classifications shown in tabulations

(This table is limited to censuses where data on educational level were obtained. "x" indicates that the given type of question was asked or that the given type of classification could be derived from the tabulations; "–" that it was not asked or could not be derived; ".." that information was not available or was not complete)

| Country | *Questions asked on the schedule* | | | | *Classifications tabulated* | | | |
|---|---|---|---|---|---|---|---|---|
| | *Census year* | *Highest institution attended* | *Level of school completed* | *Grade or year completed* | *Census year* | *Highest institution attended* | *Level of school completed* | *Grade or year completed* |
| **AFRICA:** | | | | | | | | |
| Egypt | 1947 | – | x | – | 1937 | – | x | – |
| **AMERICA:** | | | | | | | | |
| Argentina | 1947 | x | x | x[1] | 1947 | .. | .. | .. |
| Brazil | 1940 | x | x | x | 1940 | .. | .. | .. |
| Canada | 1941 | – | – | –[2] | 1941 | – | – | –[2] |
| Chile | 1940 | x | – | x[3] | 1940 | x | – | x[3] |
| Costa Rica | 1927 | x | – | – | 1927 | .. | .. | .. |
| Cuba | 1943 | x | x[4] | –[5] | 1943 | – | – | – |
| Honduras | 1945 | – | – | x[6] | 1945 | – | – | x[6] |
| Mexico | 1940 | x | x | x | 1940 | – | – | x[7] |
| Nicaragua | 1940 | x | x | x | 1940 | .. | .. | .. |
| Panama | 1940 | x | – | – | 1940 | x | – | – |
| Paraguay | 1936 | – | – | x[8] | 1936 | .. | .. | .. |
| Peru | 1940 | x[9] | x[10] | – | 1940 | x[9] | – | – |
| United States of America | 1940 | x | x | x | 1940 | x[11] | x | x |
| **ASIA:** | | | | | | | | |
| India | 1941 | – | x[12] | – | 1931 | – | x[13] | – |
| Japan | 1940 | x | – | – | 1940 | .. | .. | .. |
| Philippines | 1948 | x | x | x | 1939 | – | x | x |
| **EUROPE:** | | | | | | | | |
| Belgium | 1947 | –[14] | x[15] | – | 1930 | – | – | – |
| Bulgaria | 1946 | x | x | – | 1934 | x | x | – |
| Denmark | 1940 | x[16] | x[16] | – | 1940 | x | x | – |
| Finland | 1940 | x | .. | x | 1940 | x | – | x |
| Greece | 1940 | – | x | – | 1940 | .. | .. | .. |
| Hungary | 1941 | x[17] | x | x[17] | 1941 | .. | x | x |
| Netherlands | 1947 | – | x[18] | – | 1930 | – | x | – |
| Poland | 1931 | x | x | x | 1931 | – | – | – |
| Portugal | 1940 | x | x | x | 1940 | – | x | – |
| Romania | 1930 | x | x | x | 1930 | x | – | – |
| Sweden | 1945 | x | x | x | 1945 | .. | .. | .. |
| USSR | 1939 | – | x | – | 1939 | – | x | – |

[1] For persons attending school at the time of the census the school grade currently attended was to be reported instead of the grade completed.

[2] Only the total number of school years for which the person had attended any educational institution (such as primary or secondary school, college or university) was to be reported. Neither the level of the highest institution attended nor the highest grade or years completed could be determined exactly from the results.

[3] The questions on grade or year completed referred only to primary school education. The data were tabulated by single grades from one to six.

[4] Information was obtained on degrees held, so that data on schools completed could be derived.

[5] Only the number of years or months for which the person had attended primary school was asked.

[6] The questions on grade or year completed referred only to primary school education. The data were tabulated by single grades from one to five.

[7] Only grades completed in primary school were tabulated, as follows: none, one to four, five, six.

[8] The question related only to grammar school education.

[9] A question on highest institution attended was asked of all persons except those living in rural areas. However, a tabulation was presented without any mention of restrictions in geographical coverage.

[10] The question which referred only to degrees held was asked of all persons except those living in rural areas.

[11] In the tabulations, the grades or years completed in institutions of various levels were converted to a simple numerical continuum of years of school completed, having regard to the variations within the country in the organization of the school system. The level of institutions attained could be determined approximately from the results.

[12] A question was asked concerning examinations passed, such as B.A., School Final, Matric, VII Standard, etc.

[13] The unemployed were tabulated according to degrees held.

[14] This information was asked only for persons who attended universities or specialized schools. In other schools the questions covered only school completed.

[15] A question was asked on diplomas and certificates held, so that information on schools completed could be derived.

[16] These questions applied only to persons 14-29 years of age.

[17] For universities, or institutions of a similar level, the question covered only persons who had graduated, and grade or year completed was not asked.

[18] Information was asked only on university degrees or university examinations passed.

asked, the instructions should explain, for the sake of clarity, whether the questions on educational level refer to all types of education or only to that obtained in the usual way, that is, in regular primary and secondary schools, universities, etc. The censuses of Chile (1940), Mexico (1940), Nicaragua (1940), Peru (1940), Bulgaria (1946), Denmark (1940), Greece (1940), Hungary (1941), Poland (1931) and Sweden (1945) are among those which contained some mention of various types of technical, commercial, trade, correspondence schools, etc. which were to be included in the reporting of education attained. Instructions for the 1940 census of the United States stated that only education obtained in schools and colleges which were part of the regular school system was to be included, and in the 1947 census of Argentina education in special schools was to be included only if the courses taken were comparable to those given in regular schools. A clarification regarding the treatment of education in special types of schools does not appear to have been made in all censuses, however.

### 3. Categories of educational level shown in tabulations of results

Table 26 shows also what categories of educational level were presented in the published tabulations of those censuses for which the relevant publications could be obtained.

Published tabulations of data on this subject were available for only slightly more than half of the censuses included in the table. In a number of cases tabulations relating to educational level could not be found although tabulations of data on most of the other major subjects covered by the census were available; this was true, for example, of the censuses of Brazil (1940), Costa Rica (1927), Cuba (1943), Japan (1940), Poland (1931) and Sweden (1945). The failure to tabulate data on this subject in some cases may have been due to the complexity of the questions asked and the consequent difficulty and expense of carrying out complete tabulations. On the other hand, it may have been due in some cases to the appearance of major errors in the results.

A comparison of the categories tabulated with the question asked on the census schedules reveals a tendency in some censuses to omit from the tabulations a substantial part of the information obtained. One type of curtailment, exemplified in the census of Mexico (1940), was to limit the tabulations of grade or year completed to persons reporting primary school education, although this information was obtained on the schedules also for those having attended higher institutions. A more severe curtailment was made in the censuses of Portugal (1940) and Romania (1930), where all information obtained on grade or year completed was disregarded in the tabulations. These limitations of the tabulations likewise may be attributable in some cases to the difficulty and expense of a full treatment of the complex data obtained on the schedules, or to the unreliability of results.

In consequence of the failure to tabulate the results in some instances and of the curtailment of tabulations in other cases, the number of censuses which provided data on educational level corresponding to those recently recommended by the international bodies was much smaller than the study of the census schedules themselves would suggest. For only three censuses, those of the United States (1940), the Philippines (1939) and Hungary (1941), were tabulations available showing the numbers of persons having completed each specific grade or school year in institutions of each level.

The difficulty of obtaining internationally comparable statistics on this subject is largely inherent in the diversity of educational and cultural conditions and of statistical experience and facilities in the various countries. It is obvious that, since the structure of the educational systems in different countries varies so greatly, census data on this subject would not be directly comparable even if exactly the same questions, definitions, and tabulation forms were used in all censuses. Moreover, the details of the definitions and methods used must necessarily vary in accordance with the conditions existing in each country. The possibilities of international comparisons would be greatly improved, however, if both the questions and the tabulation plans in each census were drawn in accordance with the general objective stated by the international agencies, that is, to classify the population by highest level attained in the regular educational system of the country, in terms of specific years or grades within the various institutions. Data compiled on this basis, tabulated in full detail, and supplemented with a description of the educational system of the country, would permit a thorough analysis of the meaning of the data and at least an approximate comparison of the proportions of the population having attained equivalent levels of education in two or more countries. It must be emphasized that such comparisons would only be possible if the data were tabulated by specific years or grades of school, and not merely by the level of the institution attended.

### 4. Tabulations of educational level by sex and age

The age classifications shown in the twelve censuses where tabulations of data on educational level were presented by age and sex are given in table 27.

It was common practice to limit the tabulations on educational level, like those on literacy, to the population over a given minimum age. In three censuses the minimum was 5 years, in two it was 7 years, and in each of five other censuses, it was 6, 8, 10, 14 or 20 years. As in the case of literacy data, the variation of the minimum age lends a particular importance to age classifications in tabulations on this subject, as a basis for international comparisons.

In addition to the twelve censuses shown in table 27, the data on educational level presented in two other censuses — Finland (1940) and Mexico (1940) — were confined to the population above a stated minimum age, although no subdivision by age groups was made within the age

**Table 27. Age classifications used in tabulations of data on educational level in recent censuses**

(This table is limited to censuses where tabulations on education level by age were available. "–" indicates that the given type of classification was not shown; "*" that the census year is different from that shown in table 23)

| Country | Census year | Minimum age | Age range classified by: Single years | 5-year groups (but not single years) | 10-year groups (but not 5-year groups) | Other age groups tabulated |
|---|---|---|---|---|---|---|
| AFRICA: | | | | | | |
| Egypt | 1937* | 5 years | – | 5 to 19 | 20 to 59 | 60 and over |
| AMERICA: | | | | | | |
| Chile | 1940 | 7 years | 7 to 100 | – | – | 101 and over |
| Panama | 1940 | 10 years | – | 10 to 39 | 40 to 69 | 70 and over |
| Peru | 1940 | 6 years | 6 to 29 | – | 30 to 59 | 60 and over |
| United States of America | 1940 | 5 years | 5 to 24 | 25 to 74 | – | 75 and over |
| ASIA: | | | | | | |
| Philippines | 1939* | 5 years | 5 to 14 | 15 to 24 | 25 to 64 | 15-17, 18-19, 65 and over |
| EUROPE: | | | | | | |
| Bulgaria | 1934* | 8 years | – | 10 to 69 | – | 8-9, 70 and over |
| Denmark[1] | 1940 | 14 years | – | 20 to 29 | – | 14–19 |
| Hungary | 1941 | 0 years | 5, 6, 14, 20, 21, 24, 25, 49, 50, 60, 70 | 0 to 79 | – | 80 and over |
| Netherlands | 1930* | 20 years | – | – | 20 to 79 | 80 and over |
| Portugal | 1940 | 7 years | 7 to 119 | – | – | – |
| USSR | 1939 | 0 years | – | – | 30 to 49 | Under 30, 50 and over |

[1] The data were not tabulated by sex.

range covered. The failure to include an age classification seriously limits the value of the data, not only for international comparisons, but also for national uses. The interpretation of the data is obviously different for persons of school age and for older persons. Even within the group past school age, in countries where substantial advances in education have been made during recent decades, the distribution by educational level of the younger generations differs markedly from that of the older ones. Thus a classification by age is needed in order to determine the meaning of the data with reference to the needs of an educational programme. It also permits a measurement of the progress which has been achieved in the past in raising the educational level of the people.

In most of those censuses where age classifications were given in tabulations of educational level, they were presented in considerable detail. The age classification recommended by the Population Commission (under 25 years, ten-year groups from 25 to 64, 65 and over) could be derived from the tabulations of six censuses.

## E. Data on school attendance

### 1. Data recommended by international agencies

The Population Commission did not include school attendance at the time of the census in the list of topics which it recommended at its third

session for investigation in the population censuses to be taken about 1950. However, at its fourth session the Commission requested the Secretariat of the United Nations "to study further the problems of definitions and enumeration of data on school attendance in population censuses and to publish the results of these studies so as to facilitate the development of a greater degree of international comparability in such data".[11] The Commission also proposed that if data were available on school attendance as well as educational level, it would be desirable to tabulate the level of education separately for persons attending and not attending school, by sex, by single years of age up to twenty-five years.[12]

The Committee on the 1950 Census of the Americas, at its second session, adopted the following recommendation: "It is recommended that, wherever possible, countries investigate in their censuses of population, in the form and to the extent considered desirable, the aspects of school attendance and kind of instruction being received by the enumerated."[13] In regard to the tabulations of these data, the Committee made the same recommendation as the Population Commission.[14]

### 2. Questions and definitions used in recent censuses

The types of questions on school attendance asked in the twenty-three censuses where this topic was investigated, are shown in table 28.

In all these censuses the questions were designed to show at least the number of persons currently attending school, either in the whole population or within certain age limits representing the population of "school age". A limited approach was used in the 1946 census of Ireland, where information on school attendance was required only for persons fourteen to nineteen years old who had never been gainfully employed.

An important limitation of the comparability of the data on this subject for different countries is the variation in the time periods to which the questions refer. In some censuses it appears that only persons attending school on the census date were to be reported as such, whereas in others the question covered attendance during a relatively long period prior to the census date. The time periods specified were usually related to the normal school terms in the countries concerned. In the 1941 census of Canada, for example, persons were asked whether or not they had attended school at any time from 1 September 1940 to 2 June 1941, the census date. On the other hand, in the United States census of 1940, the period was only from 1 March to 1 April 1940, although the school terms in that country usually begin in September or October. The longer the period to which the question refers, the larger tends to be the number of persons reported as attending school.

Comparability is also affected by the variations in age groups to which the question is addressed. This problem is discussed below in connexion with the tabulations of results.

Variations in the coverage of the questions, with reference to the types of institutions attended, constitute another source of incomparability. In some censuses the questions apparently refer indiscriminately to attendance at any educational institutions, including commercial and technical schools, language schools, etc. In others, they are limited to attendance at institutions which belong to the "regular" or standard educational system (public or private elementary and intermediate schools, universities, etc.). In a few censuses (Mexico 1940, Poland 1931 and Sweden 1945), persons attending special institutions such as commercial and language schools were identified separately, by type of institution or type of instruction being received. A clear indication of the intended coverage of the inquiry in this respect is obviously of the greatest importance, yet this has been lacking in some censuses.

In a considerable number of censuses, the questions on school attendance were extended to show the level of the educational institution attended (primary or secondary school, university, etc.) and sometimes also the specific grade or school year attended. These questions were generally integrated with the inquiries on educational level of the population as a whole. Thus, in some cases the data on educational level were obtained from questions on level of current school attendance for persons still in school, and on highest level attained for those having completed or suspended their education. This procedure may have a substantial advantage in clarifying the questions and improving the accuracy of returns for persons still in school.

Another type of extension of the inquiry, which was made in the 1941 census of Venezuela, is to ask the reason for not attending school for persons of school age not in school. There is considerable cause for doubt as to the validity of the results

[11] *Report of the fourth session of the Population Commission (op. cit.)*, p. 9.
[12] *Ibid.*, p. 30.
[13] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . . (op. cit.)*, p. 22.
[14] *Ibid.*, p. 30.

## Table 28. Types of questions on school attendance asked in recent censuses and classifications shown in tabulations

(This table is limited to censuses where data on school attendance were obtained. "x" indicates that the given type of question was asked or that the given classification could be derived from the tabulations; "–" that it was not asked or could not be derived; ".." that information was not available or was not complete)

| Country | Questions asked on the schedule | | | | Classifications tabulated | | |
|---|---|---|---|---|---|---|---|
| | Census year | Attending school or not | Level of institution attended | Grade or year attended | Census year | Attending school or not | Level of institution attended | Grade or year attended |
| AMERICA: | | | | | | | | |
| Argentina | 1947 | x | x | x | 1947 | .. | .. | .. |
| Brazil | 1940 | x | x | x[1] | 1940 | x | .. | .. |
| Canada | 1941 | x[2] | – | –[3] | 1941 | x | – | –[3] |
| Costa Rica | 1927 | x | – | – | 1927 | .. | .. | .. |
| Cuba | 1943 | x | x | – | 1943 | – | – | – |
| Dominican Republic | 1935 | x[4] | – | – | 1935 | .. | .. | .. |
| El Salvador | 1930 | x | – | – | 1930 | – | – | – |
| Guatemala | 1940 | x | – | – | 1940 | – | – | – |
| Honduras | 1945 | x[5] | – | x[6] | 1945 | x | – | – |
| Mexico | 1940 | x | x | x[1] | 1940 | x | x[7] | – |
| Nicaragua | 1940 | x | x | x[1] | 1940 | .. | .. | .. |
| Panama | 1940 | x[8] | x[8] | x[8] | 1940 | x | – | – |
| Paraguay | 1936 | x | – | – | 1936 | .. | .. | .. |
| Peru | 1940 | x[9] | x[9] | x[9] | 1940 | – | – | – |
| United States of America | 1940 | x[10] | x[11] | x[11] | 1940 | x | x[11] | x[11] |
| Venezuela | 1941 | x[12] | – | – | 1941 | x[12] | – | – |
| ASIA: | | | | | | | | |
| Philippines | 1948 | x[13] | x[11] | x[11] | 1939 | x | x[11] | x[11] |
| EUROPE: | | | | | | | | |
| Bulgaria | 1946 | x | x | x | 1934 | – | – | – |
| Hungary | 1941 | x | x | x | 1941 | .. | .. | .. |
| Ireland | 1946 | x[14] | –[14] | – | 1936 | – | – | – |
| Poland | 1931 | x | x | x[1] | 1931 | – | – | – |
| Portugal | 1940 | x | x | x[1] | 1940 | x | x | – |
| Sweden | 1945 | x | x | x | 1945 | x | x | – |
| USSR | 1939 | x | x | x | 1939 | .. | .. | .. |
| OCEANIA: | | | | | | | | |
| Australia | 1947 | – | – | – | 1933 | x | x | – |

[1] Data were obtained on highest grade of school completed and whether or not attending school at the time of the census so that grade or year currently attended could be derived.

[2] This question referred to attendance at any time from 1 September 1940 to the census date, 2 June 1941.

[3] Persons attending school since 1 September 1940 were to indicate that fact by placing a circle around the number reported in answer to the question on years of school attendance. The grade currently attended could not be determined exactly from the returns.

[4] Persons enrolled but not actually attending school, because of illness or other causes were to be reported as attending school.

[5] This question was asked only of persons seven to fifteen years of age.

[6] This information could be derived for persons seven to fifteen years of age attending grammar school.

[7] Data were tabulated on the number of persons attending each of thirty types of schools.

[8] It appears that information on school attendance was derived from the questions on the schedule pertaining to the status of persons not economically active, rather than from the questions on education.

[9] These questions were asked only of persons in the larger cities.

[10] This question referred to attendance at any time from 1 March 1940 to the census date, 1 April 1940.

[11] Data were obtained on highest grade of school completed and classified by whether or not attending school at present, so that the classification by grade or year currently attended could be derived.

[12] Persons not attending school were classified by reason for not attending as follows: (*a*) working at home or outside; (*b*) no room in school; (*c*) no school near; (*d*) no clothes or chronic illness; and (*e*) not stated.

[13] This question referred to attendance at any time during a specified period prior to the census date.

[14] This question was limited to persons fourteen to nineteen years old who had never been gainfully employed.

of such an inquiry, for the reasons may be most complex and may not even be fully understood by the parties concerned. Where absence from school is contrary to law or custom there is a temptation to falsify the answers.

### 3. CLASSIFICATIONS OF SCHOOL ATTENDANCE TABULATED

Like the data on level of education achieved, those obtained on current school attendance were not tabulated in a number of censuses. Published

**Table 29. Age classifications used in tabulations of data on school attendance in recent censuses**

(This table is limited to censuses where tabulations on school attendance by age were available. "–" indicates that the given type of classification was not shown; "*" that the census year is different from that shown in table 23)

| Country | Census year | Age range covered | Age range classified by single years | Other age groups tabulated |
|---|---|---|---|---|
| AMERICA: | | | | |
| Brazil | 1940 | 5 to 39 | 5 to 39 | – |
| Canada | 1941 | 5 to 24 | 5 to 24 | – |
| Honduras | 1945 | 7 to 15[1] | – | – |
| Mexico | 1940 | 6 and over[1] | – | – |
| Panama | 1940 | 7 to 15 | 7 to 15 | – |
| United States of America | 1940 | 5 to 24 | 5 to 24 | – |
| Venezuela | 1941 | 7 to 14[1] | – | – |
| ASIA: | | | | |
| Philippines | 1939 | 5 to 19 | 5 to 14 | 15-17, 18-19 |
| EUROPE: | | | | |
| Portugal | 1940 | 7 to 49 | 7 to 49 | – |
| Sweden | 1945 | 6 to 30 | – | 6-12, 12-14, 14-16, 16-18, 18-20, 20-30 |
| OCEANIA: | | | | |
| Australia | 1933* | 4 and over | 5 to 29 | 4, 30 and over |

[1] No further age classification was given.

tabulations on this subject were available for less than half of the censuses in which the subject was investigated. The reasons for failure to tabulate both types of data in some cases may be similar, for the questions on school attendance, like those on educational level, in some censuses were quite detailed.

Where tabulations were made, the classifications presented corresponded fairly closely, in most cases, to the information provided by the census questions. Some abridgments were made, however; for example, in the censuses of Mexico (1940), Portugal (1940) and Sweden (1945), the data on grade or year of school attended, which could be derived from the information obtained on the schedule, were not tabulated.

### 4. TABULATIONS OF SCHOOL ATTENDANCE BY AGE GROUPS

Either a classification by age groups, or a limitation of the tabulations to the age range in which attendance at school is most common, was made in nearly all the censuses for which the tabulations were available. The only exception was the census of Mexico (1940) where the data presented referred to all persons six years of age and over attending various types of educational institutions, with no further classification by age. Tabulations of this type have the advantage of giving a complete account of the number of students. However, their value as a means of indicating the extent of actual school attendance in relation to the population of school age is limited by the lack of an age reference.

Detailed international comparisons of the proportions of children attending school at various age levels are possible only for countries where the data have been tabulated by fine age groupings. Such tabulations are available from the censuses of Brazil (1940), Canada (1941), Panama (1940), United States (1940), the Philippines (1939), Portugal (1940) and Australia (1933). Totals for the age group 7-14 or 7-15 can be obtained for Honduras (1945) and Venezuela (1941), in addition to the above seven countries. A somewhat similar group can be obtained for Sweden (1945). It may be pointed out that the analysis of the proportions of children in school at various ages is one for which census data are much better suited than the school attendance data ordinarily available from other sources, which do not usually give information on the ages of the pupils. The opportunity for this analysis on the basis of census data is lost if the tabulations do not give a fairly detailed age classification.

Failure to publish tabulations of school attendance data in some censuses, and failure to present adequate classifications by age in others, are the principal reasons for the narrow possibilities of international comparisons in this field.

# X. ECONOMICALLY ACTIVE POPULATION

*(prepared by the Population Division of the United Nations in collaboration with the International Labour Office)*

## A. Uses of the data on economic activities

Statistics on the economic activities of the people, derived from censuses of population, are among the most important sources of information about the economic and demographic characteristics of nations. These statistics provide an inventory of the human resources of each country, showing the number and characteristics of persons engaged in economic production, their occupations, and their distribution among the branches of economic activity. This information is needed by international agencies that are concerned with economic reconstruction and development, with economic aspects of population trends and international migrations, and with other problems that involve a consideration of the volume and character of labour resources in different countries. Every nation has a stake in the solution of these problems and hence an interest in improving the quality and international comparability of the data. Not only the importance of the data but also the diversity of existing methods in this field of census inquiry creates a special need for improving international comparability. The need is generally recognized, and considerable work has been done during recent years on the development of international standards, but the data obtained on this subject in recent censuses of different countries have been far from comparable. Different concepts of the economically active population and different classifications by occupation, industry and other characteristics have made it exceedingly difficult even to prepare estimates on a comparable basis for different countries.[1]

A consideration of the principal uses of census statistics on the subject is an essential preliminary to any discussion of methods of compiling the data, because the possible variations in method are enormous, and because the choices among the various possible methods depend largely on the particular uses which are considered most important in each country. The relative importance of the various applications differs from country to country, depending on economic conditions and on the availability of other sources of statistics, so that the methods best suited for the census of one country may not be appropriate in another.

Census data on the economically active population are especially important in those countries which do not have very highly developed systems of economic statistics, and for which the periodic enumerations of the people classified by occupational and industrial groups are among the few sources of quantitative information about the characteristics of the national economy. In such countries the census figures are not only important as a means of measuring manpower resources and showing their deployment among the various branches of economic activity; in addition they may be indispensable for such purposes as estimating the national income or the volume of physical production, determining the relative importance of various industries, and tracing the course of economic development.

In other countries, where a greater variety of statistics is available, there is less need to use population census data, either for such general analyses or for specific studies relating to the labour market, because data can be obtained from other sources. The principal sources other than the population census are the records of social security schemes (unemployment insurance, health insurance, old-age pensions, etc.), industrial censuses, periodic reports from samples of individual employers and establishments, records of public placement offices, and, in a few countries, general population registers or special registrations for purposes of military conscription, etc. In the United States and Canada periodic census-like enumerations of population samples are made for the purpose of measuring changes in the economically active population and in

[1] Different terms are used in different countries to designate the group of persons engaged in economic activities, e.g., "active population", "gainfully occupied population", "gainful workers", "labour force" and the equivalents in various languages. The term "economically active population" is used here as the equivalent of any of these terms.

employment and unemployment.[2] Where the latter types of data are available, the economic applications of census statistics on this topic may be limited chiefly to those for which census data are peculiarly fitted. Some of these are mentioned below.

Most non-census statistics (other than those obtained from population sample enumerations) exclude important segments of the economically active population such as self-employed persons and unpaid family workers, domestic servants, agricultural labourers, government workers, and employees of charitable organizations. Thus, the census returns are needed to provide data on the economic activities of the population as a whole, or specific information about the groups of workers excluded from other statistics. The complete coverage of the census figures makes them especially suitable for analysing the relation of the economically active to the total population and the distribution of manpower among the various industries and occupations. Census statistics are particularly useful in this connexion if they show not only the number of economically active but also inactive persons classified by types of non-economic activities or reasons for not being employed.

The measurement of unemployment as such has not been a major objective of census enumeration in most countries. Whatever information about unemployment was obtained has usually been a by-product of the inquiry regarding occupations, and few tabulations, if any, have been made from the returns. In some countries the reason has been that other sources provided all the employment and unemployment data considered necessary, or that the data from the census were considered too unreliable to warrant extensive tabulation. In other countries, especially those where manufacturing and commerce are comparatively little developed, unemployment has not been considered an important enough subject to deserve much space either on the census schedule or in the publications of results, even though little or no information on the subject could be obtained elsewhere. In a few censuses, however, extensive information has been obtained about the extent and characteristics of unemployment and under-employment. Examples are the recent censuses of the United States (where little information on these subjects was available from other sources) and of Canada, Australia, New Zealand, France and the Netherlands.

In countries where continuing series of estimates relating to the economically active population, employment or unemployment are obtained from sample enumerations of the population, reports from samples of establishments, or samples of social insurance records, the provision of "bench-marks" for such estimates may be an important objective of the census. Such series may be controlled by adjusting them periodically to the levels shown by successive censuses, or by revising the systems of stratification, weighting, etc. on the basis of census data. The census figures may be used also as a means of periodically correcting any biases to which other series may be subject because of their incomplete coverage, or for other reasons. Of course, this use of census statistics is not made in countries where data from non-census sources are sufficient to serve as "bench-marks" for continuing series of estimates, or where little or no data in this field are available during intercensal periods.

Population census schedules commonly contain much information about the characteristics of economically active persons and of their families which cannot be obtained from other sources, and which is very useful for certain types of economic analyses. For example, data on the active population classified by sex, by age groups, by marital and dependency status, etc. throw light on the factors which affect the supply of labour and on the manner in which it is related to population trends. Similar classifications for employed and unemployed workers are useful for studying factors which affect the incidence of unemployment, the impact of unemployment upon consumers' purchasing power, and relief needs. These statistics may be useful also for purposes of planning and administering governmental or other programmes which apply to particular classes of workers.

In addition, the census may be used as a medium for collecting data on certain aspects of employment or unemployment that cannot readily be obtained otherwise. In some countries, statistics on occupations can be obtained only from census returns, other data being limited to classifications by industry. The census may also be the best source of statistics on hours of work per day or per week; days, weeks or months of work during a year; length of unemployment; and other indications of the state of the labour market.

Non-census statistics on employment, etc., are sometimes available only for the nation as a whole

[2] For a discussion of sources of statistics in different countries see: International Labour Office. *Employment and Unemployment Statistics.* Studies and Reports, New Series, No. 7. Part I. 1948. (Prepared for the Sixth International Conference of Labour Statisticians.)

or for principal administrative divisions. In this case, an extremely valuable function of the population census may be to provide such data for minor political subdivisions, for individual cities and towns and for metropolitan areas.

Statistics on economic activities of the population are valuable for demographic as well as economic analyses, for they reflect the characteristics, not only of the economy, but also of the people. Statistics of occupations are especially valuable as means of characterizing the population of a country or its geographical subdivisions, from both economic and social points of view. For example, the proportion of the economically active population that is engaged in agriculture, the ratio of wage-earners to independent workers, and the proportions of professional and white-collar workers, artisans and craftsmen tell much about the people's way of life, their educational and cultural level, and their social organization. The importance of census statistics as a means of studying these subjects, like their importance for general economic analyses, is especially great where other types of statistical data are comparatively little developed. Even in the statistically most advanced countries, however, these uses are quite important, especially in analysing the demographic and social characteristics of cities and geographical subdivisions of the country.

Just as statistics on economic activities of a population group serve to characterize the group from certain economic and social standpoints, the classification of an individual by occupation or by status in relation to the labour market serves as an indicator of his economic and social position. Valuable results are obtained by relating these classifications to the other demographic characteristics which are available from the census schedules. Examples of the subjects which may be studied in this way are: differences in the social positions of various ethnic groups; social and economic differences in fertility; relationships between family limitation and employment of women; and relationships between employment or occupation and other indices of social and economic status, such as educational level, income and value of home.

In like manner, households may be classified by occupation of the household head or of other members, in such a way as to indicate the social and economic status of the household as a whole. In this way it is possible to derive statistics of the population economically dependent upon various occupations or industries, showing the numbers of bread-winners employed in each occupation or industry and of household members who depend on them for support, or simply a classification of all household members by occupation or industry of the head. This application is discussed in chapter XIII.

## B. Basic concepts recommended by international agencies

### 1. League of Nations Committee of Statistical Experts

In 1938, the League of Nations Committee of Statistical Experts took up the problem of developing standards for statistics of economic activities obtained from population censuses.[3] Having reviewed contemporary practices in various countries, the Committee drew up a proposal for improving international comparability of these data, including a recommended definition of the economically active population in general terms and standard classifications by industry (branch of economic activity) and by occupational status (i.e., whether an employee, employer, own-account worker, unpaid family worker, etc.)[4]

The Committee's recommendation regarding the definition of the "gainfully occupied population" (that is, the economically active) was stated as follows:

"For the purpose of international classification, any occupation for which the person engaged therein is remunerated, directly or indirectly, in cash or in kind — i.e., any principal remunerated occupation or any secondary occupation which is the sole remunerated occupation of the person concerned — is to be considered as a gainful occupation. Housework done by members of a family in their own homes is not included under that description, but work done by members of a family in helping the head of the family in his occupation is so included, even though only indirectly remunerated. The occupation of persons working in labour camps or other similar institutions, or engaged in unemployment relief work, is to be considered as a gainful occupation.

"The particulars given should be based, generally speaking, on the occupation at the moment of the census. A person who has recently exercised

[3] League of Nations. *Statistics of the Gainfully Occupied Population: Definitions and Classifications Recommended by the Committee of Statistical Experts,* Geneva, 1938. (Studies and Reports on Statistical Methods, No. 1.)

[4] This classification was designated in the Committee's report as "personal status"; many other terms have been used, including "industrial status", "class of worker", "social status", etc.

a gainful occupation is to be considered as still engaged in that occupation even though, by reason of sickness, injury, vacation or inability to obtain work, he may, at the time of the census, be temporarily not working.

"Young persons of working age and not at school, who have never actually exercised a gainful occupation, are not to be treated as part of the gainfully-occupied population, even though they may be seeking work and consequently included in statistics of unemployment. It is, however, desirable that censuses should be so taken that the number of young persons so situated can be ascertained."

The Committee noted that in some countries the detailed tabulations of census data on this subject were limited to persons whose *principal* activity was gainful work, although the census schedules also called for information regarding gainful occupations exercised as supplementary activities by persons engaged principally in non-gainful pursuits. Such countries were urged to make detailed tabulations also for persons whose gainful activities were secondary, and thus to provide the data required for international comparisons.

The Committee also noted that a major source of non-comparability in the census figures for different countries was variation in the extent to which they included persons assisting without pay in the operation of farms or other enterprises operated by members of their families. As an aid in evaluating the degree of comparability with respect to the classification of such persons, the Committee recommended that both the persons reported in the census as unpaid workers in family enterprises, and the persons classified as not economically active, should be divided into the following four groups: (*a*) wives of farmers; (*b*) wives of persons other than farmers; (*c*) other members of farmers' families; (*d*) other members of families of persons other than farmers.

The Committee's primary concern was not the standardization of the procedures followed in compiling the data, but the development of classications of the results that would reveal incomparabilities and provide a basis for adjustments for the purpose of international comparisons. In addition the Committee proposed certain standard classifications for tabulations of the economically active by age and other characteristics, which are discussed in chapters XII and XIII.

### 2. Sixth and Seventh International Conferences of Labour Statisticians

In August 1947 the Sixth International Conference of Labour Statisticians, convened under the auspices of the International Labour Office, undertook to formulate general standards for statistics of the "labour force" (i.e. economically active population), employment and unemployment obtained from all sources, including periodic canvasses of establishments; social insurance, employment exchange and trade union records; and industrial censuses, as well as censuses of population. Its recommendations included definitions of the "labour force", employment and unemployment, and a recommended classification of occupational status categories.[5]

The Sixth International Conference of Labour Statisticians emphasized the role of population census figures as "bench-marks" for continuing series of estimates, and the need for common definitions of the census data and continuing series. The recommendations pertaining to definitions of the "labour force" were stated as follows:

"Statistics of the 'civilian labour force' should include all civilian persons above a specified age who are either employed (at work, or temporarily absent from a job) or unemployed (without a job and seeking work).

"Statistics of the 'total labour force' should include the civilian labour force and the armed forces.

"Statistics of the 'total number of employed persons' in the civilian labour force should include all those who, in a specified period, perform some work, together with those who have a job but are temporarily absent from work.

"These statistics should include the following industrial status groups ('industrial status' being the status of the individual in respect of his employment): (*a*) workers for public or private employers; (*b*) employers; (*c*) persons who work for their own account without employees; (*d*) unpaid family workers.

"Persons in institutions, including labour camps but excluding the armed forces, shall be regarded as at work or having a job only if they are free to seek alternative employment.

[5] International Labour Office. *International Standards for Statistics of Employment, Unemployment and the Labour Force, Cost of Living and Industrial Injuries. Adopted by the Sixth International Conference of Labour Statisticians.* 1947.

"Statistics of the 'total number of unemployed persons' should include all persons, able to take a job if offered one, who are out of a job on a given day and have remained out of a job and seeking work for a specified minimum period not exceeding one week.

"Where the specified minimum period to which the statistics relate is longer than one day, special inquiries should be made from time to time in order to ascertain the difference between the number of unemployed so defined and the number which would be arrived at if the specified minimum period taken were a single day."

The Conference also adopted certain recommendations regarding tabulations of data on this subject, which are discussed in chapters XI, XII, and XIII.

These recommendations of the Sixth International Conference of Labour Statisticians differed from those of the League of Nations Committee of Statistical Experts, with regard to the criteria for identifying members of the economically active population. According to the recommendations of the Conference, the primary criterion was to be activity in the labour market, either working or seeking employment, during a specified brief period of time. The League of Nations Committee, on the other hand, framed its recommendations in terms of the identification of persons having gainful occupations, according to a concept of status which was not directly dependent upon activity during any stated time period. In so doing, the Committee adopted the type of approach to the problem which had been followed in practically every country prior to the time of its recommendations. For convenience, the type of definition recommended by the Sixth International Conference of Labour Statisticians will be called the "labour force concept", while that recommended by the League of Nations Committee will be called the "gainful worker concept".

The Seventh International Conference of Labour Statisticians, held in September and October 1949, adopted the major categories of a standard international classification of occupations.[6] The Conference recommended that the International Labour Office study further the question of occupational classification, with a view to drafting internationally acceptable subdivisions of these major categories. Likewise it recommended further study of possible subdivisions of the major categories of occupational status (see chapter XI).

### 3. United Nations Population Commission

Statistics of the economically active population were included in the list of topics recommended by the Population Commission at its third session (May 1948), for investigation in 1950 censuses of population. The Commission recommended that data be obtained on the total economically active population, on occupation, industry and occupational status of the economically active, and on certain categories of the population not economically active. The recommendations of the Commission were:[7]

"Two alternative types of data both aimed at the same general objective of measuring the economically active population ('labour force' or 'gainful workers') may be obtained in population censuses: (1) data according to the 'activity status' concept, following the general international standards which were adopted in August 1947 by the Sixth International Conference of Labour Statisticians; or (2) data according to the concept of 'gainfully occupied' recommended in 1938 by the League of Nations Committee of Statistical Experts, or to modifications of that concept designed to give precise and objective measures.

"Whichever of the two types of data is obtained, the economically active population ('labour force' or 'gainful workers') should include employees, employers, own-account workers, and unpaid family workers (as defined . . . below); it should include the armed forces as well as civilians, and unemployed workers as well as those employed at the time of the census; and it should include persons engaged partly in economic and partly in non-economic activities, as well as those wholly engaged in economic activities.

"Data should be obtained for the following groups of the population not economically active: (1) persons engaged only in housework at home, without pay; (2) students not also engaged in economic activities; (3) inmates of penal, mental, and charitable institutions, even though they may work for pay within the institution; and (4) all other persons not engaged in economic activities, such as retired and disabled persons and those who derive their income from rents, royalties, dividends, pensions, etc.

[6] International Labour Office. Seventh International Conference of Labour Statisticians. *Report of the Committee on the International Standard Classification of Occupations.* Geneva, 1949.

[7] *Report of the Population Commission* (third session) (*op. cit.*), pp. 18-19.

"The following data should be obtained for the economically active population (with the exception of unemployed persons who have not previously been employed):

"1. *Occupation,* that is, the trade, profession, or type of work performed by the individual.

"2. *Industry,* that is, branch of economic activity.

"3. *Industrial status,* that is, the classification of the active population into employees (persons who work for wages or salaries in cash or in kind), employers (persons who operate economic enterprises in which they employ one or more employees), workers on own-account (persons who operate economic enterprises without employees), and unpaid family workers (persons who do a specified minimum amount of work without pay in economic enterprises operated by other members of their households)."

It will be observed that the Commission left to each country the choice between the "labour force concept" and the "gainful worker concept", in accordance with the circumstances and the statistical needs of the country.

In considering the problem of tabulations of census results, at its fourth session (April 1949) the Population Commission drew up a list of suggested tabulations relating to the economically active population, which are discussed in chapters XI, XII and XIII. The Commission also gave preliminary consideration to certain proposed standards for the definition of groups of occupational status (employees, employers, own-account workers, unpaid family workers, etc.) which are discussed in chapter XI.

### 4. United Nations Statistical Commission

In September 1947 the United Nations Statistical Commission drew up a revised standard classification of industries (branches of economic activity), for use in the compilation of census statistics on the economically active population as well as in other types of statistics. In this connexion, the Statistical Commission was not concerned with the methods of defining or enumerating the active population, but only with its classification by industry groups. The recommendation of the Statistical Commission was submitted to the various Governments for comment, and was subsequently adopted by the Economic and Social Council of the United Nations as a standard for international use.[8]

### 5. Committee on the 1950 Census of the Americas

At its second session, in February 1949, the Committee on the 1950 Census of the Americas included data on economic activities in its minimum inter-American programme for population censuses. In this connexion the Committee stated:[9]

"In the investigation of this topic it is left optional with each country whether it uses the gainful-worker concept or the labour force concept, in accordance with the recommendations relating to each of these topics made by this Committee and by the United Nations. It is noted that the data to be collected are to include occupation (trade, profession, or type of work performed), industry (branch of economic activity), and industrial status (class of worker)."

The Committee's recommendations regarding tabulations of these data are discussed in chapters XI, XII and XIII. In referring to the "recommendations relating to each of these concepts made by this Committee", the Committee presumably had in mind the remarks on this subject which were contained in the report of the first meeting of its Coordinating Board (July 1948).[10] The Board stated:[11]

"The 'gainfully occupied' approach to the measurement of the economically active population is based on the *usual* or *customary* activities of persons of working age, and is nominally independent of activity at a given time. A gainful worker is defined as a person who usually, or for a large part of his time, works at an occupation by which he earns money (or a money equivalent) or in which he assists in the production of marketable goods. The gainfully occupied population is made up of the whole number of gainful workers. . . . The labour force concept is defined primarily on the basis of activities during a stated interval of time, regardless of the usual activities or occupational status."

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[8] Statistical Commission. *International Standard Industrial Classification of All Economic Activities.* Economic and Social Council, Official Records, Third Year, Seventh Session. Supplement No. 5B. 1948.

[9] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . . (op. cit.),* p. 23.

[10] "Summary of the first session of the Co-ordinating Board of the Committee on the 1950 Census of the Americas . . ." *Estadística.* Vol. VI, No. 21. Dec. 1948. pp. 568-585.

[11] *Ibid.,* pp. 583, 584.

The Board also drew up proposed questions for the census schedule, following each of the two approaches.

## C. The concept of economic activities

The fundamental concept of the economically active population, as enumerated in recent population censuses of various countries, is almost universally the same. Generally speaking, it is defined as that part of the population which furnishes the supply of labour for the production of economic goods and services, including employers, own-account workers, and "unpaid family workers" as well as employees, and including the unemployed as well as persons actually engaged in these types of work at the time of the enumeration. The essentials of this concept are stated in the recommendation of the League of Nations Committee of Statistical Experts concerning the definition of a "gainful occupation":

"Any occupation for which the person engaged therein is remunerated, directly or indirectly, in cash or in kind . . . is to be considered as a gainful occupation. Housework done by members of a family in their own homes is not included under that description, but work done by members of a family in helping the head of the family in his occupation is so included, even though only indirectly remunerated."

In some countries the census tabulations do not show any totals for persons engaged in this type of activities, but simply give a classification of the whole population (or of the population in a certain age group) by "occupations", with such groups as housewives and students, who are engaged in non-economic activities, and retired or disabled persons, presented as "occupational" categories. This scheme of tabulation, however, involves the fundamental distinction between remunerated work and other activities, and permits the derivation by addition of totals for the economically active.

Departures from the usual concept have occurred in a few censuses where certain groups engaged in non-economic activities have been included in totals for the active population, or some economically active groups have been excluded. These modifications will be discussed after consideration of variations in the criteria whereby persons engaged in economic activities are identified.

## D. Criteria for identifying the economically active

As already stated, the two principal types of criteria for identifying members of the economically active population are represented by the "labour force" definition recommended by the Sixth International Conference of Labour Statisticians, and by the "gainful worker" definition proposed by the League of Nations Committee of Statistical Experts. Since the latter has been used in the great majority of census enumerations, it will be considered first.

### 1. The "gainful worker" concept

The "gainful worker" concept is based on the idea that each person has a more or less stable functional role, as a bread-winner following a gainful occupation, or as a housewife, student, retired pensioner, etc. and that this role is to some extent independent of his activity at any given time. Thus the economically active population is enumerated by asking each individual to state his occupation, and by tabulating the data for persons reporting occupations that come within the concept of gainful work. Examples of such straightforward applications of the concept, with little or no explanation regarding the conditions under which an individual should be considered as "having an occupation", are found in some recent censuses, including those of El Salvador (1930) and Honduras (1940). Where the concept is applied in its simplest form, there are no provisions as to whether or not unemployed and retired workers should be considered as still attached to their former occupations; whether or not students being trained for certain vocations should state any occupation; or what should be done about seasonal workers and others intermittently engaged in gainful work.

This concept has the advantage of requiring only the simplest census questions and instructions, but it is ambiguous when applied to persons, such as those mentioned above, who do not have a single, definite occupational role. Consequently variations in the results for different areas and successive census dates are likely to occur because of differences in interpretations of the question, which do not reflect actual differences in the functional distribution of the people. Moreover, it is impossible to define objectively the results obtained by this method. These weaknesses are especially serious when the data are used for international comparisons. For this purpose, statistics which cannot be objectively defined may

be less useful than figures based on conflicting but specific definitions, which can be at least approximately reconciled by estimating the sizes of the groups classified differently.

In some censuses the concept has been made more definite by referring specifically either to the usual status or to the status at the time of the census, and by elaborating the instructions for borderline groups. The concept of usual status was used in the 1948 census of the Philippine Islands, where the schedule called for the usual occupation of each person usually engaged in gainful work. The instructions provided that persons who, because of old age, sickness, disability, retirement, or institutionalization worked only occasionally or for short periods each day, should be returned as having no occupations; but gainful occupations should be reported for unemployed persons who were "involuntarily" and "temporarily" out of work.

The 1939 census of Germany affords an example of a modified "gainful worker" concept. The economically active population, as enumerated in that census, consisted of persons who reported specific occupations to which they belonged on the day of the census, regardless of whether or not they were employed. Persons who had formerly learned or practised occupations which they no longer followed were not to report those occupations, but the present ones. Retired workers, persons living on rents, pensions, etc. and others no longer following gainful occupations were to be reported accordingly. When defined in these terms, the "gainful worker" concept approaches the "labour force" concept of activity at a given moment or during a specified time. The results may differ, however, in the case of persons who, at the time of the census, are temporarily out of work or engaged in some work other than their usual occupations, and who meanwhile consider themselves as retaining their normal occupational affiliation.

"Gainful worker" concepts of these general types, with more or less detailed instructions for borderline groups, have been used in many recent censuses throughout the world. The terms of the definitions have varied, especially with regard to persons not working at the time of the enumeration. These variations are discussed below in connexion with the definitions of employment and unemployment (see chapter XII).

Data based on a "gainful worker" concept have an advantage, for some purposes, over data relating specifically to activities at a stated time, because they are likely to be less influenced by atypical conditions at the time of the enumeration. This relative insensitivity to temporary changes in circumstances is an advantage, for example, where the data are used to characterize individuals or populations from social and economic points of view. On the other hand, it is a major disadvantage where the data are used in connexion with statistics from other sources which refer to persons actually employed or engaged in other labour market activities at a specified date. Furthermore, their lack of objectivity is a serious drawback of this type of statistics, even though an effort is made to clarify their coverage by elaborating instructions regarding the classification of borderline groups. As the instructions are made more specific and more detailed, the concept loses its advantage of simplicity.

### 2. The "labour force" concept

The principle of enumerating the economically active population chiefly on the basis of questions regarding each individual's activities during a given, short period of time, or on a given day, is stated in the recommendation of the Sixth International Conference of Labour Statisticians. In effect, these recommendations provide that all persons either employed or seeking employment on a given day or during a given period not exceeding one week should be classified as members of the "labour force", regardless of their usual activities or their conception of their occupations.

This type of definition is a comparatively recent innovation in population census methodology. A definition closely resembling that recommended by the Conference of Labour Statisticians was used in the 1940 census of the United States, and more or less similar definitions have been used in a few other recent censuses, for example that of New Zealand in 1945. In the 1940 United States census the "labour force" was defined as persons who, during the week before the census date, did any work for pay or profit (including unpaid family workers) or who were seeking such work, or who had jobs or businesses from which they were temporarily absent during the week. The classifications by occupation, industry, and occupational status referred to the jobs held during the week (or the last regular jobs for persons seeking work).

Similar methods are used also in the United States and in Canada for current measurements of the economically active population based on census-type surveys of population samples. The results have shown how greatly an enumeration

of economic activities may be affected by its time reference. Estimates based on the sample data for the United States, which have been obtained at monthly intervals since 1940, indicate that the number of individuals who enter or leave economic activities during the course of a year may amount to roughly one-fourth of the annual average number economically active. Since the part-year workers have peculiar distributions by sex, age, occupation, industry and other characteristics, not only the size but also the composition of the economically active group as shown by a census may be greatly influenced by the time reference. This consideration is especially important in areas where employment is subject to very large seasonal fluctuations, as it is in most countries which are predominantly agricultural. It may also be exceedingly important in other countries at times when the normal distribution of the population among the various functional groups has been dislocated by major economic disturbances.

It has already been pointed out that statistics referring to activities on a particular day or during a specified brief interval of time can be more objectively defined than those which are based on concepts of normal status, and can more easily be linked with employment and unemployment data from other sources. Their weakness resulting from the influence of atypical conditions at the time of enumeration may be partly overcome if other sources of information are adequate to show at least the approximate magnitude of short-term changes in the principal components of the economically active population. But in those countries where the population census is the only source of comprehensive data in this field, and where major branches of employment are subject to large variations from month to month, an enumeration showing the situation on a single day or during a single week is likely to be much less valuable than one having a broader time base. Even in countries where data on short-term variations are comparatively well developed, many important uses may be better served by data which are less affected by conditions at the census date. This is true of the applications in measuring characteristics of the economically active population that are not shown by other data, of their use in representing the occupational and industrial structure in local areas and of demographic applications generally (see part A).

An alternative which requires consideration is to refer to activities during a much longer interval, such as a year. For example, the economically active population may be defined as persons who were employed at gainful occupations (or seeking employment) at any time (or for a stated minimum length of time) during the twelve months preceding the date of the census, or during the preceding calendar year; or as persons whose principal activity during such a period was gainful work. The classifications by occupation, industry and occupational status may refer to the last or the longest job held during the period, or to the job from which most income was obtained.

A major drawback of the year as a time reference is the difficulty of getting accurate reports on the activities of the people over so long a period of time. It is especially difficult to get accurate information on the *amount* of employment during a year. From a theoretical standpoint, the only entirely satisfactory unit of measurement is the working hour, but a question on the number of hours of gainful work during a year is obviously impracticable. If the week or the month is taken as the unit, allowance should be made, if possible, for variations in hours of work per day and in days of work per week or month, but this involves serious complications. These difficulties would be reduced, however, if the census questions were designed only to determine whether or not each individual was employed for a given minimum length of time during the year, or to show his principal activity during that time.

## E. Definitions of employment and unemployment

Where a simple "gainful worker" concept is used as the basis for enumeration of the economically active population, definitions of its employed and unemployed segments may not be important, if data for these groups are not considered as major objects of the enumeration. However, the use of specific definitions of these groups is one of the ways in which the meaning of the "gainful worker" concept has been made more precise in some censuses. Employment and unemployment definitions are of fundamental importance where the economically active group is defined with reference to the activities of individuals during a specified period of time, for in effect the economically active population is measured in that case by enumerating employed and unemployed workers and combining the results. It will be convenient, therefore, to discuss separately the problems of measuring employment

and unemployment in censuses where a "gainful worker" concept is used, and in those where the "labour force" concept is applied.

### 1. Definitions used in connexion with the "gainful worker" concept

In some censuses where the economically active population has been enumerated by means of questions concerning occupations, there have been neither any questions on the census schedules regarding employment or unemployment at the time of the census nor any specific instructions regarding the occupational returns to be made for employed or unemployed workers. For example, in the 1939 census of Germany, the instructions merely stated that the unemployed need not be designated as such, because of the insignificant magnitude of unemployment at that time. Among other recent censuses in which no reference has been made to employment or unemployment are those of Brazil (1940), El Salvador (1930) and Paraguay (1936).

Where separate data have been obtained for the employed and the unemployed components of the economically active population enumerated on the basis of a "gainful worker" concept, two types of methods have been used to make the classification. One method is to have each person reporting a gainful occupation indicate (either in answer to a special question or by means of an entry attached to the occupational designation) whether or not he was employed at the census date or during a specified period. In some cases (for example, in the 1943 census of Cuba, and the 1940 censuses of Denmark and Panama) this has been done without furnishing any specific definition of employment.

The second method is to require each person reported as an employee to give the name and address of his employer, if any, at the time of the census. This was done in the 1934 census of Austria, the 1947 census of Luxembourg, the 1931 censuses of England and Wales and of Scotland, the 1946 census of the Union of South Africa and many others, especially in European countries. In some countries (e.g. the Netherlands) the census schedules have called also for the name and location of the establishment, if any, currently being operated by each employer or independent worker. These procedures make it possible, by checking against other available records, to limit the data for the employed to persons who are on the payrolls of employers or actually operating economic enterprises, though it does not ensure that all of the latter are returned as employed, or even as economically active.

Both identifying employers or establishments on the census schedules and comparing with other records are difficult operations. Where such methods can be carried out successfully, however, their utility is not limited to providing a means of classifying the economically active population into employed and unemployed categories. One of their major advantages is to make possible a great improvement in the quality of occupational and industrial classifications.

Any method of dividing into employed and unemployed components an economically active total enumerated on the basis of a "gainful worker" concept is likely to give results for the unemployed which are difficult to interpret and to fit in with unemployment data obtained from other sources. This is true because of the vagueness of the "gainful worker" concept, especially as applied to persons who are not working at the time of the census. For example, census enumerators and respondents may or may not consider as "having a gainful occupation" women who are currently engaged in household duties but who have previously been employed and who would like to return to work; boys and girls currently attending school who work for pay during school vacations; or workers who are permanently or temporarily unable to compete for jobs because of their physical condition, age or other handicaps. Variations in the interpretation of the concept with reference to such groups have proportionally much greater effects on the numbers and characteristics of persons classified as unemployed than on the figures for the active population as a whole.

For these reasons employment and unemployment concepts have been used in some censuses, not only to establish the dividing lines between the two parts of the economically active group but also to clarify the "gainful worker" concept itself. The criterion most widely used for this purpose has been the reason for not working. For example, in the 1940 census of Greece respondents were instructed to report gainful occupations if they were idle because of illness, lay-off, vacation, imprisonment for a term of less than ten years or inability to find employment. In the 1930 census of Czechoslovakia the reasons mentioned were lack of work, illness and industrial disputes. Ability to work and length of idleness have also been used as criteria in this connexion. In the 1948 census of the Philippine Islands, where the enumeration was based on usual occupations, the instructions stated that occupations

should be reported for unemployed workers if they were "temporarily" and "involuntarily" out of work. The League of Nations Committee of Statistical Experts combined the criterion of reason for idleness with a reference to length of idleness in recommending, "A person who has recently exercised a gainful occupation [should] be considered as still engaged in that occupation even though, by reason of sickness, injury, vacation or inability to obtain work, he may, at the time of the census, be temporarily not working."

In some censuses questions have been asked on reasons for not working, length of idleness, ability to work, etc. of all persons reporting occupations but not at work. The results have been used for tabulations showing the different classes of persons not working at the time of the census, and in some cases also for excluding from the economically active, persons whose answers to these questions indicated that they had little claim to the status of gainful workers. Questions on the reasons for idleness were asked in the 1941 census of Canada, the 1947 census of Egypt, the 1946 census of France, the 1940 census of Chile, and in the 1945 census of Sweden (for a sample of the unemployed). In the 1947 census of Australia, persons who usually worked but who were out of a job at the time of the census and were not actively seeking work were asked to state the reason, e.g. sickness, accident, on strike, etc. Questions on the length of unemployment, for persons out of work at the time of the census, were asked in the above-mentioned censuses of Australia, Egypt, France, Chile and Sweden, and also in the 1940 censuses of Mexico and Peru.

As a means of improving the precision of measures of unemployment and the economically active population, both references to the reason for not being at work and to the length of unemployment are open to the objections that careful investigation is often needed in order to obtain even approximately accurate reports on these subjects and that respondents are commonly unable to give reliable information for other members of their households. Questions on reasons for not being at work are open to the additional objection that even the individual concerned is not always in a position to know the true reason. These difficulties are involved to some extent even where no specific questions on these subjects appear on the census schedule, if the instructions governing the reporting of occupations refer to the reasons for not working or the length of idleness.

### 2. Definitions used in connexion with the "labour force" concept

Where the economically active population is defined with reference to activities at a specified time or during a brief period, its employed and unemployed components are defined chiefly with reference to two types of labour market activity: working and seeking work. However, certain groups who are not active during the specified period may be included, notably persons who have jobs at which they are not working for various reasons and who, meanwhile, are not seeking work. The International Conference of Labour Statisticians recommended that persons "who have a job but are temporarily absent from work" should be included, together with those at work during the specified period, in the statistics for employed workers. This recommendation, however, is only a statement of a general principle which requires elaboration if it is to be used for the purpose of a census enumeration. The meaning of "having a job" may be evident in the case of employees who are ill or on vacation, but it is not evident, without definition, in many other cases. Persons who have been laid off because of bad weather, industrial disputes, slack orders, lack of materials, breakdowns of equipment or seasonal stoppage of work may perhaps be regarded as having jobs or as unemployed, or as temporarily not economically active. The concept is ambiguous also with reference to employers, the self-employed, unpaid family workers and employees who do not work steadily for one employer; these may or may not be considered as "having a job" when their work is interrupted for any reason. Variations in the classification of such persons may have a great effect on the statistics, not only for employed workers but also for the economically active population as a whole.

One method of defining the status of "having a job" is to refer to the reasons for not being at work. This was done in the 1940 census of the United States. Persons not at work during the specified week, and not seeking work, were asked whether or not they had jobs (or businesses) from which they were temporarily absent because of vacation, illness, industrial dispute, bad weather or a lay-off of not more than four weeks' duration. The statistics for employed workers were obtained by adding together the persons reported as working at gainful occupations and those reported as having jobs.

Other recent censuses in which unemployment data were obtained corresponding closely to the

definition recommended by the Sixth International Conference of Labour Statisticians include the 1945 census of New Zealand and the 1947 census of the Netherlands. Instructions for the New Zealand census provided that the unemployed should be defined as persons seeking work, with the stipulation that those who were "between jobs" should not be reported as unemployed. In the Netherlands census of 1947 the unemployed were enumerated by a question as to whether or not the respondent was seeking work, for each person not reported as employed.

The criterion of activity in seeking work, as a basis for the definition of unemployment, has the advantages of being comparatively objective and requiring only a relatively simple question, which can be answered by "yes" or "no". The results are particularly appropriate for analysing the pressure exerted on the labour market by unemployed workers competing for jobs. On the other hand, this criterion may exclude important groups of persons who form a part of the available, unused labour supply, but who do not actually seek employment. In a narrow labour market where there are only a few kinds of jobs available, and where the number of employers is small, would-be workers may be aware of all possible openings without actually seeking employment. This situation is likely to exist in isolated agricultural areas, especially where communication and transportation facilities are poor, and in small industrial or mining towns, as well as in the markets for certain specialized skills. In order to make allowances for such situations, the "seeking work" criterion was modified in the United States census of 1940 by providing that persons who were not seeking work because of the belief that no work was to be had should be regarded as unemployed.[12] Even with this modification, the criterion would not be very satisfactory in a country where the situation mentioned above is very common, as it is in some agricultural countries. It might also prove unsatisfactory in industrial countries during periods of very severe unemployment, when many workers may abandon the search for employment as a hopeless endeavour. Under these circumstances, one may question the applicability of the basic concept of the "labour force" as the group of persons currently engaged in labour market activity.

[12] Under other circumstances different exceptions may be required. In the 1945 census of New Zealand, for example, it was provided that ex-servicemen awaiting return to work were to be returned as unemployed, presumably even though not seeking employment.

It should be observed that the definition of the unemployed recommended by the Sixth International Conference of Labour Statisticians includes "first-job seekers", that is, persons looking for work who have not previously been employed. Most of this group have presumably been excluded both from the unemployed and from the economically active totals, in censuses where the "gainful worker" concept was used without modification. Not having been employed in the past, they would be unlikely to consider themselves as having any particular gainful occupation. In the census of Canada in 1941, explicit instructions were given to the effect that gainful occupations should not be reported for these persons. Enumerators in the Canadian census, however, were instructed to make a special notation for persons between fourteen and twenty-four years of age who had never had a gainful occupation and who were not attending school, but who were seeking employment. The latter method is in accordance with the recommendation of the League of Nations Committee of Statistical Experts.

## F. The classification of persons with dual status or activities

In the majority of censuses persons with dual status or activities, such as students and housewives who also work for pay and retired workers who do some work at part-time or intermittent jobs, have been classified as economically active, at least by definition. In some censuses, however, the questions have called for each person's principal activity, so that persons who were working to some extent for pay, for profit, or as unpaid family workers but who considered themselves chiefly students, housewives, retired, etc. were classified in the latter categories. Examples are the 1940 census of Mexico and the 1947 census of Australia. In some other countries certain kinds of persons having dual status have been included in the economically active, and others excluded. For example, in the 1941 census of Canada students regularly attending school were to be excluded even though working in their spare time. In still other cases, information has been obtained regarding both the principal and supplementary occupation, activity or status of each individual, so that it was possible to derive separate statistics for persons having a primarily non-gainful status or activity but also economically active, and vice versa. This has been done in the recent censuses of many European countries (for example, Poland 1931, Czechoslovakia 1930, Germany 1939, Switzerland 1941 and Sweden

1945) and also in a few censuses elsewhere (for example, Brazil 1940 and the Philippines 1948).

The League of Nations Committee of Statistical Experts paid special attention to this aspect of definitions. While recognizing the value of data showing both primary and supplementary activities, the Committee recommended that each country should obtain, as a minimum, statistics for all persons having any gainful occupations, regardless of any other activities or status which they might have in addition. The same principle is implied in the recommendation of the International Conference of Labour Statisticians regarding the coverage of data for employed workers.

If it is desired to measure the total volume of labour supply, employment or unemployment, it is necessary to include all persons who have a dual status or function. This procedure is appropriate for the purpose of obtaining bench-marks for current employment and unemployment estimates and for rounding out incomplete data from establishment reports, social insurance records, etc. On the other hand, the inclusion of persons who are engaged only to a minor extent in economic activities makes the statistics tend to exaggerate the proportion of the potential labour supply that is actually devoted to such activities. Likewise, data compiled on this basis give a biased representation of the relative importance of various occupational and industrial categories of the economically active, and of the differences in the economic activities of different population groups which have varying proportions of part-time workers. The bias also affects the validity of the classifications as indications of the economic and social status of individuals and families. In general, data showing the principal activity of each individual, with those engaged chiefly in non-gainful activities excluded from the economically active, would be most appropriate for the latter types of analyses.

The only way to satisfy all needs is to obtain data on the active population both including and excluding persons whose economic activity is only secondary. If this is practicable, the user of the results can be permitted to choose the definition most appropriate for his purposes. This method also permits the tabulation of separate statistics for what might be called "principal" and "secondary" workers, that is, persons whose remunerated employment is their main activity, and those having chiefly a non-economic function or status. This classification is valuable for a number of purposes; for example, when applied to the unemployed it gives an indication of the social importance of their unemployment.

The achievement of these purposes by making two complete inquiries, one on primary and one on secondary activities, occupations, etc. involves a great addition to the work of the census. Even a single set of data on occupation, industry and occupational status is difficult to obtain accurately on the schedules, to codify and tabulate, and expensive to publish in detail. The addition of another parallel set of data on all these subjects aggravates the difficulties to such an extent that it could not be recommended for any country where the scope of the census must be kept to a minimum.

The difficulty is much less if the schedule does not call for the specification of both primary and supplementary occupation, industry and occupational status, but only for information as to primary and secondary activity or status in terms of such broad categories as employed, unemployed, student, housewife, retired, etc., with the details of occupation and industry, etc., only for the primary job of each person identified as economically active on the basis of either primary or secondary activity. It might not be prohibitively difficult in many countries to obtain major categories of occupational status (e.g., employers, own-account workers, employees, unpaid family workers), or major occupation or industry groups with reference to both "primary" and "secondary" jobs. In some countries, however, this extension of the inquiry would not be consistent with the objectives of maximum completeness and accuracy of reporting on other items.

Some of the advantages of data which show how many of the economically active population are engaged only secondarily in gainful work can be achieved also by inquiring into the *extent* of employment of all those having any gainful work. For example, in the censuses of New Zealand in 1945 and the United States in 1940, where the economically active population was defined as including all persons who were gainfully employed or seeking work, there was also a question on hours of work for each person reported as employed. It has already been mentioned that in several censuses the extent of employment has been measured with reference to a year. These data, of course, are valuable also for other purposes than obtaining a refined measure of the size and composition of the economically active population. They have applications in the study of such subjects as labour productivity, underemployment, income distribution and problems of regulation of working hours. But they also require

additional questions on the census schedules, which complicate the problems of enumeration, tabulation and publication of results, though to a lesser extent than detailed questions on secondary occupations.

## G. The definition of unpaid family workers

The League of Nations Committee of Statistical Experts, the sixth International Conference of Labour Statisticians, the Population Commission and the Committee on the 1950 Census of the Americas all recommended that statistics of the economically active should include unpaid family workers, that is, persons who assist without pay in an economic enterprise operated by other members of their households. The inclusion of such workers is accepted census procedure in the great majority of countries; in fact, there seems to have been no recent census in any country where they were explicitly excluded from the definition of the economically active population.[13] In a few censuses, however, (e.g., that of El Salvador in 1930) the schedules and instructions have not stated whether or not unpaid family workers should be reported as having gainful occupations. In such cases it may be assumed that many persons whose main activity was helping without pay on family farms or in family businesses reported their occupations accordingly and were counted as economically active.

The problem of international standardization with regard to unpaid family workers is not in establishing the principle that they should be regarded as economically active, but in finding the means of enumerating them on a uniform basis in different countries. Differences in the number of persons enumerated as unpaid family workers, in proportion to the whole number who might possibly be regarded as such, are among the most important sources of incomparability in the statistics shown by the censuses of various countries. The magnitude of these differences is illustrated by the fact that in Germany the ratio of female to male unpaid family workers in agriculture, forestry and fishery, calculated from the 1939 census figures, was over four to one, as compared with two to one in the 1931 census of Poland, and one to one in the 1931 census of Yugoslavia.[14] These differences are chiefly the results of differences in the kinds of questions asked in the census, in the instructions to enumerators or respondents, and in the rules of classification followed during the tabulation of results.

### 1. Exclusion of unpaid family workers from international comparisons

One means of nullifying the influence of the variations in reporting of this group is to deduct the figures for unpaid family workers from the totals of the economically active population for each country, thus limiting the comparisons to the figures for employers, own-account workers and paid employees. The data for some countries do not permit this treatment either because no classification of the economically active by occupational status is included in the census tabulations or because unpaid family workers are combined with other categories in this classification.

The result of omitting unpaid family workers, even where it is feasible to do so, is a warped basis for international comparisons either of the size or the composition of the economically active population. Figures which exclude unpaid family workers grossly understate the numbers of workers engaged in agriculture in all countries where a family-farm system is common. They may also seriously understate the numbers in some other branches of economic activity, especially retail trade. They misrepresent the relative contributions of different sex-age groups of the population to the supply of labour, since large proportions of unpaid family workers are women and children. The inclusion of unpaid family workers on a uniform basis is essential for unbiased comparisons.

### 2. Distinction between unpaid family work and non-economic activities

One of the difficulties is the lack of any simple criteria for distinguishing unpaid family work which contributes to the operation of an economic enterprise from household duties not connected with the family enterprise. This difficulty is most evident in farm households. Between the cultivation of the fields and the care of the living quarters lies a wide range of activities which may or may not be regarded as connected with the operation of the farm: for example, cooking done by the farmer's wife, where some products of

[13] In a sample enumeration of the economically active population in the United States in 1937, enumerators were instructed not to report unpaid family workers as employed, but this method has not been used in any of the regular censuses of the United States. Analysis of the 1937 returns revealed that many unpaid workers were actually reported, contrary to instructions, as employed, apparently because they considered themselves or were considered by their families as workers in the enterprise. See United States, *Census of Partial Employment, Unemployment, and Occupations, 1937*. Washington, 1939. Volume IV, p. 111.

[14] International Labour Office, *Yearbook of Labour Statistics*, 1945-1946, 1947. Table II.

the kitchen, such as preserves, are marketed; feeding chickens, gathering fuel, and drawing water for both farm and household use. No precise definition of the kinds of work on a farm which should be regarded for census purposes as unpaid family work has been attempted in any country. The matter has generally been left to the discretion of the census enumerators and respondents. The variety of types of work, especially in agriculture, in different regions of the same country as well as in different countries makes it practically impossible to apply any uniform rules in this matter. It is possible only to outline in general terms the types of work which can be considered as contributing to the operation of a family enterprise, e.g., in the case of a farm, work done in connexion with cultivation, harvesting, preparation of products for sale, care of livestock and repair of farm equipment. The types of work specified would, of course, vary from country to country in accordance with the conditions of work.

Some unpaid family workers may not think of themselves as "employed" or as having an occupation, and may not be so regarded by other members of their families, although they are engaged in work which contributes directly to the operation of the family enterprise. For this reason, general questions on employment and occupations may not produce complete returns for unpaid family workers, even though the instructions to enumerators and respondents provide that they should be considered as economically active. More complete returns may be obtained by adding a question to the census schedule specifically asking each person who might be an unpaid family worker whether or not he assists in an enterprise operated by a member of the family. Such a question, addressed to all married women and to all children over fourteen years of age living at home, was contained in the schedule for the 1940 census of Denmark. The disadvantage of this method is that the additional question is asked of a great many persons to whom it is not applicable. On the other hand, an attempt to limit its coverage, for example by restricting it to members of households where any person is the operator of a farm or business enterprise, involves difficulties of arranging the various questions and defining their coverage in such a way as not to be confusing to enumerators or respondents. These disadvantages may outweigh the gain in increased completeness of returns, especially in a country where unpaid family workers form a relatively small proportion of the economically active population.

### 3. Exclusion of unpaid family workers doing only a small amount of work

Still another difficulty is that a very large proportion of unpaid family workers do only a little work connected with the family enterprise. It would probably be impossible, even if it were desirable, to include in the economically active population all persons who do any work at all in connexion with a family enterprise, because enumerators and respondents are likely to overlook minor amounts of such work done by persons who are primarily engaged in other activities. If all unpaid family workers were included without distinction as to amount of work, the statistics would exaggerate the relative importance of agriculture, trade and other occupations that are carried on largely in family enterprises. The census instructions in some countries therefore provide that unpaid family workers should be reported as such only if they work "regularly" (e.g. in the censuses of Belgium in 1947, Czechoslovakia in 1930, Hungary in 1941, Luxembourg in 1947, and the Netherlands in 1947), or if they put in a "substantial" amount of time (e.g., in the census of Australia in 1947). In the United States census of 1940, persons doing only "incidental chores" were not to be reported as unpaid family workers. The elasticity of these terms adds to the variability of the returns for this category.

In some censuses the instructions have given a more definite criterion for selection of unpaid family workers to be reported as economically active, that is, providing that they should be so reported only if the unpaid family work is their principal activity. Examples are the censuses of England and Wales and Scotland (1931), Ireland (1936), Sweden (1945) and Poland (1931). In the case of Poland it was explicitly stated that the principal activity should be determined with reference to the amounts of time spent at various activities, and not on the basis of the subject's opinion as to the most important activity. A determination on the basis of the amount of time spent in unpaid family work as compared with other activities is quite objective, though perhaps rather difficult in many instances, and seems entirely appropriate where the basic statistics on the economically active population are limited to persons whose economic activity is their principal one. However, as already stated, the definitions of the economically active population recommended by international bodies include persons whose gainful work is not their main activity. In the framework of such a definition, it appears inconsistent to restrict the data on unpaid family workers to those whose work in the economic enterprise occupies

the major part of their time. This restriction may exclude many persons who do as much work on the farm or in the business as a full-time paid employee, although they spend more time at other activities such as housework.

An alternative solution is suggested by the recommendation of the Population Commission and the Committee on the 1950 Census of the Americas, that unpaid family workers should be defined as those who spend *a stated minimum amount of time* working without pay in a family enterprise. This kind of definition has not been widely used in population censuses up to the present; however, it appears to offer an objective means of selecting, from the group of persons who do some unpaid family work, those whose contribution is sufficient to justify their inclusion in the economically active population. The minimum amount of time can be specified either in terms of hours per day, week, etc. or in terms of a given proportion of a full-time day, week, etc. Where a definition of the economically active population according to the "labour force" concept is applied, the definition of unpaid family workers may refer to a minimum amount of work during the specific day, week, etc. to which the questions on economic activities refer. Where the "gainful worker" concept is used, it may be provided that persons who normally or usually do a given minimum amount of such work should be reported as unpaid family workers.

Definitions of this kind are in accordance with the recommendations of the Food and Agriculture Organization of the United Nations with regard to the enumeration of unpaid family workers in 1950 censuses of agriculture. The FAO proposal calls for a count of persons employed on each agricultural holding during a specified week, including members of the landholder's family who spent the equivalent, in hours, of one-third of a normal work-week without wages in agricultural work connected with the holding. It also provides for information on the number of persons employed during the census year, including members of the holder's family who regularly worked on the holding without pay, for at least one-third of the working time during the twelve months.[15]

Definitions of unpaid family workers based on a specified minimum amount of work have been used only rarely in population censuses. In the census of Jamaica (1943), persons employed full-time without pay on a farm or in a store, etc. were to be reported as economically active. This form of the definition is open to the objection that it excludes many persons who do a substantial amount of unpaid work, though not as much as full-time. It may be pointed out also that any definition involving a reference to full-time work, or to a given fraction of full-time, is somewhat difficult to apply because it requires the determination of what constitutes full-time work, and admits the possibility that enumerators and respondents may adopt varying standards of full-time. Instructions used in the census of New Zealand (1945) called for the inclusion in the economically active population of persons who did a "reasonable amount" of unpaid family work. In the processing of census returns, however, a more objective criterion was applied, and those persons who had worked in the family enterprise for at least twenty hours during the census week were classified as unpaid family workers.

A definition of the type recommended by the Population Commission and the Committee on the 1950 Census of the Americas has been used in the recent monthly sample surveys of the population in the United States, and has been found more satisfactory than the definitions previously used in the population censuses of that country. In these sample surveys enumerators are instructed to enumerate all persons doing any unpaid family work during the survey week and to report the number of hours worked by each. In the process of tabulation those unpaid family workers who worked less than fifteen hours are eliminated from the count of the economically active population. This procedure, of course, depends on the inclusion in the inquiry of a question on hours of work or some other measure of the amount of time worked. Where no questions on amount of time worked are asked, however, it would be possible to make reference to a minimum amount of work (in terms of hours per week or day) in the instructions to enumerators and respondents regarding the definition of unpaid family workers.

### 4. Definitions based on sex, age and family relationships

In some countries the census authorities, apparently despairing of any consistent distinction, on the basis of reported activities, between workers and dependants in households operating family enterprises, have resorted to arbitrary rules of classification based on the sex, age and family relationships of the household members. In the 1946 census of France, all persons aged 14-60 in farmers' households who reported no other occupation were treated as agricultural workers; however, the farmer's wife was not so classified if she reported that her principal activity was home

[15] Food and Agriculture Organization of the United Nations. *Program for the 1950 World Census of Agriculture.* 1948. pp. 19-20.

housework. In the census of Bulgaria (1934) all men aged 15 to 74 and all women aged 15 to 64 in the households of farm operators were classified as unpaid family workers unless they reported another occupation or indicated that they were unable to work or attending school. In the German census of 1939 all wives of farmers, but no other female members of the household were classified as unpaid family helpers.

Definitions of this type have the advantage of giving a uniform basis for classifying the members of farm operators' households, but they are in no way based on an actual measurement of economic activity at a given time, nor of usual activity. They relieve enumerators of the responsibility of determining who shall be classified as an unpaid family worker, since the definitions can be applied in the process of tabulation on the basis of other entries on the census schedule. Such procedures, if applied uniformly in all countries, would yield more nearly comparable totals of the economically active population than are now available, but the statistics for any one country would not give a true picture of that nation's economically active population. They would overstate the proportion of the population engaged in gainful activity and exaggerate the importance of agriculture in relation to other branches of economic activity, as well as the contribution of women and young persons to the labour supply. French statisticians have acknowledged that the techniques used in classifying unpaid family workers in their recent censuses have resulted in an overstatement of the population active in agriculture.[16]

#### 5. Other variations in definitions

In addition to these basic problems of defining and enumerating unpaid family workers, it is useful to take brief note of certain variations in the details of the definitions used in the recent censuses of various countries. One such variation affects persons who assist another member of the household in an enterprise which is not his primary occupation. According to the definition recommended by the Population Commission and the Committee on the 1950 Census of the Americas, such persons would be counted as unpaid family workers; in some censuses (for example, that of Czechoslovakia 1930), they have been classified as dependants. The recommended definition also includes persons who assist a household member other than the household head; in some censuses these have been excluded (e.g., the Netherlands 1947 and Denmark 1940). Further, the recommended definition includes household members not related to the household head, such as friends and protegés, who assist in the family enterprise; in some censuses (e.g., the United States 1940) the definition has been limited to persons related to the head of the household.

[16] *Institut national de la statistique et des études économiques. Bulletin de la Statistique Générale de la France.* July-September 1948. p. 211.

## H. Other groups presenting special problems in the definition of economic activities

#### 1. Domestic workers

Some countries have departed from the normal concept of economic activities, either by including housewives or by excluding domestic servants. In the 1939 census of the Philippine Islands, women doing housework at home were combined in the occupational classification with domestic servants, and included in the totals for the "active population". On the other hand, in the 1940 census of Chile and in recent censuses of several other American countries, both housewives and domestic servants were excluded from the figures for the active group.

The exclusion from the economically active totals of those domestic servants who live in the homes of their employers has been customary census procedure in Czechoslovakia, Yugoslavia, Finland and several other European countries. In these countries such servants, together with dependent members of the family, have been classified apart, according to the occupation of the head of the household.

Inclusion in the economically active population of family members rendering services in their homes without pay might be justified on the grounds that their services contribute to the economic well-being of the family, and that they compete with hired domestic servants and commercial service establishments. On the other hand, where home houseworkers are considered as not economically active, it might be argued that paid domestic servants should be classified in the same way because their work is not substantially different. In fact, a servant living in the employer's household and receiving food, lodging and a small cash wage is difficult to distinguish on any economic criterion from a family member helping with the housework and possibly receiving a cash allowance. But the inclusion of family members engaged in domestic duties and the exclusion of hired servants are inappropriate for most of the principal uses of the statistics, including the measurement of the supply of labour offered in the market for wages; the provision of bench-marks for current estimates of employment

and unemployment; studies of the numbers and characteristics of workers affected by various laws applying to employment for wages; and the analysis of social and economic characteristics of population groups. A distinction between housewives and domestic service workers is therefore desirable from the standpoint of maximum usefulness of the data from each country, as well as for international comparability. If the two groups are classified separately in detailed tabulations, it is possible to present in addition whatever tabulations may be desired for the two combined, or for the economically active population plus or minus these two groups.

### 2. Members of the armed forces

The usual practice in population censuses has been to regard military service as work for pay and thus to include members of the armed forces in the economically active population. This is in agreement with the recommendation of the Sixth International Conference of Labour Statisticians, so far as the definition of the "total labour force" is concerned.

A few countries have followed different practices. In the 1930 census of Czechoslovakia, military personnel, together with retired and disabled workers and institutional inmates, were grouped as "persons prevented from exercising their occupation", and classified separately from the economically active, according to their previous occupations. Another example is the 1939 occupational census of Germany, which excluded personnel of the military organizations for youths, but included officers and enlisted men in the regular army. The logic of these procedures is obvious in the case of a country where military service is ordinarily only a brief interruption of young men's civilian work, having no relation to the competitive labour market. It is less appropriate, in peacetime, for a country where the normal strength of the military force is made up chiefly of enlisted men who are more or less permanently engaged in this service and who must be recruited in competition with other employments. It should be noted that classification schemes in which members of the armed forces are excluded from the economically active can be converted to the standard recommended by the Sixth International Conference of Labour Statisticians if this group is shown separately and classified by characteristics in enough detail to satisfy the requirements for international analyses.

In countries where the armed forces are classified as economically active, the systems of classification often do not provide a count of their total number, and thus do not yield the separate data for the armed forces, and the "civilian labour force" that were recommended by the Sixth International Conference of Labour Statisticians. If, as usual in most countries, the census schedule does not contain any question as to whether or not each individual is a member of the armed forces, only those who report distinctively military occupations can be identified. In several censuses taken since the end of World War II (including those of France in 1946 and of New Zealand and the Netherlands in 1947), specific questions on military status have been asked.

### 3. Institutional inmates

Another group which may or may not be included in the concept of the economically active population consists of the inmates of prisons, mental hospitals, homes for the needy, labour camps and similar institutions. Like workers in the free labour market, these inmates often produce goods and services which have an economic value and which compete at least indirectly with similar goods and services produced elsewhere, even though they may not actually be sold. Also, they sometimes receive cash wages or credits for their work on the books of the institution. On the other hand, the inmates of such institutions are, for the most part, charges on the social body; their production is usually only a partial offset to the cost of institutionalization. Their competition with other workers is only indirect, for they are usually not free to work outside the institution.

A review of methods in recent censuses reveals four different ways of classifying institutional inmates in statistics on economic activities.

(1) To apply the same census questions and definitions to inmates as to other population groups. This seems to have been done in the censuses of Brazil (1940), Chile (1940), France (1946), Mexico (1940), and other countries where the census schedules and instructions have made no special mention of inmates. The result is likely to be variable reporting. In some cases occupations followed within the institution may be reported; in other cases occupations before entry into the institution; and in still other cases, the inmates may be reported without occupations.

(2) To include in the economically active group those inmates who are regularly employed within the institution.

(3) To classify institutional inmates, like unemployed workers, as economically active, and to allocate them to their former occupations. In the censuses where this has been done, it has generally been provided that those who were confined

for long periods should be returned as having no occupation, and thus classified as inactive. In the 1947 census of Australia, for example, the instructions called for reporting the occupation practised before entering the institution, in the case of inmates only "temporarily" institutionalized. In the 1945 census of New Zealand this was to be done for inmates who expected to be available for employment within three months.

(4) To exclude all inmates of certain types of institutions from the economically active group, regardless of their activity within the institution, the terms of their confinement, or their previous occupations. This was apparently done, for example, in the censuses of Germany (1939), the United States (1940) and India (1941). The exclusion may be effected by instructing enumerators not to enter any occupations for institutional inmates, or by discarding such entries during the editing of the schedules or tabulation of results. This method is the one which agrees most closely with the recommendation of the Sixth International Conference of Labour Statisticians.

An essential part of any rule regarding the classification of institutional inmates should be the definition of an institution, but in most countries little attention appears to have been given to this matter. A fairly specific definition was used for the 1940 census of the United States: that is, "penal and mental institutions and homes for the aged, infirm, and needy".

## I. Age limits

It has been a common practice to limit inquiries on economic activities in censuses of population to persons who have attained "working age". The most usual minimum age limit appears to be fourteen years; this was used, *inter alia,* in the census of Canada in 1941, El Salvador in 1930, Denmark in 1940, the Netherlands in 1947, and the United States in 1940. In some censuses (including those of Greece and Panama in 1940 and the Philippines in 1948) the data covered all persons ten years old and over. In the census of New Zealand in 1945, the age group covered was fifteen and over. Censuses in which no age limit seems to have been set include those of Czechoslovakia (1930), France and Norway (1946), Peru (1940), Poland (1931) and Switzerland (1941).

An age limitation can be justified on the ground that information for the few younger children who are gainfully occupied is not worth the trouble for enumerators and respondents in asking the questions for the whole population below the stated age limit. This justification is valid if the minimum age is placed low enough to exclude only very few employed children. In that case, differences in the limits chosen will have only a negligible effect on the comparability of results for different countries, particularly if classifications by age in the tabulations of results are made in enough detail to permit the identification of a standard age group for all countries (see chapter XIII).

## J. The formulation of census questions on economic activities

The comparability of statistics on the economically active population obtained from different censuses depends not only on the concepts adopted but also on the manner in which they are implemented by questions on the census schedules. The content of the questions and their sequence on the schedule may have even more influence on the results than the definitions given in the accompanying instructions. This does not mean that the way to achieve international comparability is to use identical questions in all censuses; on the contrary, it is obvious that the form of the questions should depend on the conditions which exist in each country. Certain principles, however, may be applicable under widely differing conditions. It is therefore useful to discuss in general terms the ways of formulating and arranging questions on economic activities that have been adopted in the recent censuses of various countries.

### 1. Questions on occupation, etc.

The most widely used method has been to make the enumeration of the economically active population entirely on the basis of answers to questions on occupation, usually divided into three parts in order to obtain specific designations of occupation proper, industry (i.e., branch of economic activity), and occupational status (i.e., whether an employee, employer, etc.). There is usually provision for entering designations for persons who have no gainful occupation, as "student", "housewife", "pensioner", etc. In addition, special entries may be called for to identify the unemployed, the retired or other special groups.

Because of the nature of the questions, this method tends to give an enumeration according to the "gainful worker" concept. The results may be altered by instructions on the reporting of special groups, such as the unemployed and the retired and the disabled, as pointed out in parts D and E. However, since enumerators and respondents sometimes do not pay careful attention to the instructions or do not fully understand them, the nature of the questions themselves is most important. This is especially true if the instructions

are lengthy, so that they cannot be grasped and remembered after only a quick reading.

The advantage of this method is its simplicity. If occupational data are to be obtained in any case, the use of the questions on occupation, etc. to identify the economically active population permits the greatest economy of space and number of questions on the schedule. If objectivity and precision of results, comparability as between different areas and population groups, or stability of results for successive censuses are not considered essential, data can be obtained most economically from such questions with almost no supporting instructions.

2. MULTIPLE-CHOICE QUESTIONS ON CATEGORIES OF THE ECONOMICALLY ACTIVE AND INACTIVE POPULATION

A method which has been used in several recent censuses is to indicate on the schedule the major categories of the economically active and inactive into which the population is to be classified, so that the enumerator or respondent can choose the category which is appropriate for each individual enumerated. Questions regarding the details of occupation, industry, etc. may then be limited to persons in those categories which compose the economically active population. This method can be used with either the "gainful worker" or the "labour force" concept.

An example is furnished by the 1945 census of New Zealand. On the schedule for that census, the first question relating to economic activities was headed "category of occupation", and called for one of the following codes to indicate each individual's activity or status on the census day:

"P: Armed forces (regulars or permanent staff).

"F: Armed forces (other).

"E: Employer of labour in own business or profession.

"O: On own account, not employing labour.

"W: Working for wages or salary.

"U: Unemployed seeking work or ex-services awaiting entry into work.

"A: Relative assisting on farm, in shop, etc. without wages.

"I: Invalid or sick or under detention and not likely to be available for employment within three months (aged fifteen or over).

"C: Child under fifteen years.

"S: Full-time student (fifteen or over).

"D: Unpaid domestic duties (not housewife or widow with children).

"H: Housewife (or widow with children).

"R: Retired, independent means, etc."

Specific data on occupation, industry, etc. were to be supplied for persons designating E, O, W, U or A.

This kind of question has the advantage of calling to the attention of enumerators or respondents the major categories of the economically active and inactive populations. Thus, it reduces the chance that retired workers, invalids, students, etc., may be counted as economically active, and that certain types of economic activities such as unpaid family work, may otherwise be overlooked. In the form used for the New Zealand census, the question has the disadvantage that it involves a somewhat complicated system of code entries, which may be misunderstood or carelessly misused. The complication would be much less serious if fewer categories were specified. Also, the danger of confusion might be reduced, if the schedule design permitted, by a system of "check block" entries made by marking "x" opposite the appropriate category printed on the schedule.

A variation of the same method, which requires neither codes nor check blocks, was used in the 1947 census of Australia. The portion of the schedule devoted to questions on economic activities was divided into three sections, each of which referred to a major category of the economically active or inactive population. The three sections were arranged as follows:

"1. For those not engaged in an industry, business, trade or service who are:

"Children not attending school, write 'C'.

"Mainly dependent on pension or superannuation, write 'P'.

"Inmates of institutions (e.g., invalids and the aged, gaols, reformatories, etc.), write 'I'.

"Full-time students or scholars, write 'S'.

"Of independent means, write 'M'.

"Engaged in unpaid home duties, write 'H.D.'.

"Others not engaged in industry, etc., write 'N.A.'.

"2. For those who are usually engaged in an industry, business or trade or service but out of a job at the time of the census:

"(*a*) State the period (in number of working days, or weeks, or months) since last working.

"(*b*) If not at present actively seeking a job state reason exactly; for example, sickness, accident, on strike, locked-out, resting, etc.

"(*c*) If able and willing to work but unable to secure employment, write 'U'. If only temporarily laid off and expecting to resume former job, write 'U.L.'.

"3. For those who are engaged in an industry, business, trade or service at the time of the census:

"(*a*) Grade. If at present employing others in your own trade or business write 'E'. If conducting own business or farm without employing others (except casually) write 'O'. If an employee working for wages or salary (including apprentices) write 'W'. If helping but not receiving wages or salary write 'H'.

"(*b*) Occupation or craft. State in precise terms the present occupation, craft or calling; . . . If unemployed or temporarily absent from work, write occupation or craft in which usually engaged.

"(*c*) Industry, trade or service. State the exact branch of industry, business, trade or service in which at present engaged or employed; for example, 'dairy farming' . . . If unemployed or temporarily absent from work state industry, trade or service in which usually engaged."

Multiple-choice questions or divisions of the schedule into sections of the types described above require some rule for the reporting of persons to whom more than one of the specified designations is applicable. This involves no great difficulty if the object is to classify the population by *principal* type of activity or status. But a major difficulty is created if some categories have priority over others; for example, if the employed are defined as all persons having any gainful employment, regardless of any non-economic activity or status which they may have in addition. A scheme of priorities set forth in the instructions for a multiple-choice question is likely not to be observed in an important number of cases. A question of this kind alone, without additional questions on secondary activities, is therefore likely to yield an incomplete enumeration of the economically active population defined as the whole number of persons who are engaged even to a minor extent in gainful occupations.

### 3. Linked series of questions on individual types of activities or status

A method of arranging questions on the schedule in a linked series which showed the desired priorities in the reporting of different types of activities was used in the 1940 census of the United States. The arrangement was as follows:

"21. Was this person at work for pay or profit in private or non-emergency Government work during the week of March 24-30? (Yes or No.)

"22. If not, was he at work on, or assigned to, public emergency work (WPA, NYA, CCC,[17] etc.) during the week of March 24-30? (Yes or No.)

"23. If neither at work nor assigned to public emergency work ('No' in cols. 21 and 22) was this person seeking work? (Yes or No.)

"24. If neither at work nor assigned to public emergency work ('No' in cols. 21 and 22) and if not seeking work, did he have a job, business, etc.? (Yes or No.)

"25. For persons answering 'No' to questions 21, 22, 23 and 24, indicate whether engaged in home housework (H), in school (S), unable to work (U), or other (Ot.)."

Questions on occupation, industry and occupational status during the specified week were asked of all persons who answered "Yes" to questions 21, 22 and 24; and on latest occupation, etc., for those answering "Yes" to question 23. There were also questions on hours of work for persons at work ("Yes" to question 21) and length of unemployment for persons seeking work or on public emergency work (i.e., relief work).

The arrangement of the questions was designed to yield a count of the economically active including all persons who were working at gainful occupations, seeking work or with jobs during the specified week, regardless of any additional non-economic activity or status which they might have. Within the economically active group, priority in classification was given to the activity of working, so that the count of the unemployed would be limited to persons who were entirely without work (except on public emergency projects). "Seeking work" was given priority over "having a job" so that persons absent from their jobs would not be counted as employed if they were seeking other jobs.

A serious drawback of this scheme is that it requires several questions, which not only occupy valuable space on the schedule and add to the work of obtaining and recording the information, but which may also confuse enumerators and respondents, or exhaust their patience. For example, in the case of a student who is neither employed nor seeking work it is necessary, if the scheme is followed out correctly, to go through the whole

[17] WPA = Works Progress Administration; NYA = National Youth Administration; and CCC = Civilian Conservation Corps.

set of questions before his status is determined, even though the answer may seem obvious to both the enumerator and the respondent. Asking all the questions in such a case may be justified as the only way to make sure that the student is not also employed or seeking work, but this justification is not obvious to respondents and may not be fully appreciated by enumerators. Consequently, the intended sequence of questions is likely not to be observed in many cases. Nevertheless, this arrangement of the questions served to call the enumerators' attention to the priorities that were desired, and thereby probably achieved a fuller enumeration of the economically active, according to the stated definitions, than would be possible with only a multiple-choice question.

### 4. Questions on primary and supplementary activities or status

The method of asking two questions or sets of questions, one on primary and the other on supplementary activities or status, has distinct advantages for obtaining a complete enumeration of persons who are economically active but also engaged in non-economic activities. The example of the 1940 census of Brazil represents fairly well the methods of this kind which have been used in different countries. These were the questions used in that census:

"28. What is the principal profession, occupation, employment, official position or function that you perform?

"29. In what branch of activity do you perform the principal occupation? (Agriculture, Transportation, Administration, etc. . . .)

"30. In what place (establishment, division or department) do you perform the principal occupation? (Cattle farm, coal mine, commercial office, railroad, theatre, etc. . . .)

"31. Is the principal occupation directly or indirectly remunerated?

"32. In the principal occupation are you an employee, an employer, or do you work on your own account?

"33. If you have any supplementary occupation, what is it? (See question 28.)

"34. In what branch of activity do you perform the supplementary occupation?

"35. In what place do you perform your supplementary occupation?

"36. Is the supplementary occupation directly or indirectly remunerated?

"37. In the supplementary occupation, are you an employee, an employer or do you work on your own account?"

The obvious drawback of this method is the labour which two sets of questions on occupation, etc. require, both in the enumeration and in the processing of the returns. However, there are possibilities for reducing the additional work and expense, by limiting the information obtained with reference to supplementary activities. Some of the possibilities were discussed in part F, above. An example is the procedure followed in the current sample enumerations of economic activities in the United States. The relevant questions asked in these enumerations are:

"19. Last week what was . . .'s main activity (working, looking for work, keeping house, going to school or something else?) (WK, LK, H, S, or OT.)

"If main activity was other than working (LK, M, S, or OT in 19):

"20. In addition did . . . do any work for pay or profit last week (or without pay on family farm or business?) (Yes or No.)

"21. If No in 20: Was . . . looking for work? (Do not ask if LK in 19.) (Yes or No.)

"22. If No in 21: Did . . . have a job or business at which he did not work last week? (Yes or No.)

"23. If Yes in 22: What was the reason . . . did not work last week? (Enter one code.)"

Only one report on the details of occupation, industry and occupational status is obtained; this refers to the principal gainful employment during the stated week for persons reported as employed in answer to either the first or the subsequent questions, and to the last gainful employment of persons reported as seeking work.

The answer to the first question in the above list presumably represents what each individual (or the person giving information for him) regards as his principal activity or status, while the following questions bring out supplementary economic activities on the part of persons who are primarily students, housewives, etc. This method is believed to give a more nearly complete enumeration of persons who have supplementary economic activities than was obtained by the linked series of questions used for the 1940 census of the United States; and it is probably not much, if any, more difficult to carry out. A possible simplification, which might make the method applicable in many countries where the form used for the United States sample surveys would be too complicated,

is to combine the series of questions on supplementary activities into one multiple-choice question on that subject, similar to the first question on primary activity or status.

## K. Summary of the problem of comparability

The achievement of international comparability in population census statistics on economic activities is largely a problem of improving their quality. The lack of comparability heretofore has been due not merely to differences in definition, but also, in large measure, to the vagueness of concepts and inadequacy of techniques generally used for census inquiries on this subject. The definitions have been founded for the most part on vague subjective concepts, the economically active being identified as persons who were considered as "having gainful occupations", whether or not they were active in the labour market at the time of the census or at any other specified time. This criterion does not provide a clear-cut basis for the classification of important borderline groups such as the unemployed, seasonal workers, part-time workers and persons having recently retired. Where the general concept has been supplemented with explicit provisions for the reporting of such groups, the result has often been a set of definitions which would require for accurate application a more elaborate set of questions than could be attempted in a population census. Consequently the results have not clearly reflected the characteristics of the economically active population in many countries and have presented a generally blurred picture of international differences, even between countries where the formal definitions were nearly the same.

These weaknesses were inherent in the definition of the "gainfully occupied population" which was recommended in 1938 by the League of Nations Committee of Statistical Experts. This definition failed to give the basis for the needed improvement in precision and objectivity of census statistics in this field. In this respect the definition recommended in 1947 by the Sixth International Conference of Labour Statisticians, and the one corresponding to the "labour force" concept proposed by the Population Commission and the Committee on the 1950 Census of the Americas, constitute a major advance. Being based on the activities of individuals on a specified day or during a specified brief interval of time, these definitions are more objective than those involved in the "gainful worker" concept. They have the further advantage of bringing census data more nearly into conformity from a conceptual point of view with statistics from other sources. Definitions referring to activities at a specified point of time are especially advantageous for determining the extent of employment and unemployment of the economically active population, and for obtaining "bench-mark" measures which may be used in connexion with statistics from non-census sources.

It is apparent, however, that definitions based on the "labour force" concept are not appropriate to all of the uses of census data in this field, and in some countries may be less appropriate than a "gainful worker" type of definition for the purposes which are most important under existing conditions. Data referring to the activities of the people on a specified day or week may be affected by seasonal or other temporary conditions existing at that time, in such a way as to impair greatly their usefulness for many of the purposes which census data on the economically active population are intended to serve. Moreover, accurate enumeration on this basis may not be feasible in many countries where the conditions of census taking are most difficult. These facts were implicitly recognized by the Population Commission and by the Committee on the 1950 Census of the Americas, in their suggestion that a choice between the "labour force" and the "gainful worker" concepts be made by each country in the light of local conditions. The Population Commission also referred to the possibility that those countries which preferred the "gainful worker" concept might make modifications in the methods previously used, with a view to improving the objectivity and quality of results. Clearly the development of more precise and objective questions and definitions within the general framework of the "gainful worker" concept is essential to progress in the improvement of quality and comparability of the data for those countries where the "labour force" concept is not considered appropriate or feasible. One possible means of improvement is to refer the questions on economic or non-economic activities to a certain time period, long enough to avoid the weaknesses of the "labour force" inquiry relating to a day or a week, yet sufficiently specific to permit objective answers. For example, questions relating to activities during the year preceding the census date might yield more objective results than vague inquiries about "usual occupation".

The foregoing review of the methods used in different countries also demonstrates the need to develop specific objective definitions of unpaid family workers which could be applied easily and

accurately by census enumerators and respondents. The inadequacy of definitions of this segment of the economically active population has been a major source of the lack of international comparability. The review also shows the need for standardizing the techniques used for implementing the definitions of the economically active population and its components. Real comparability of results cannot be achieved unless in each country the census questions are sufficiently detailed and properly formulated to yield at least an approximately accurate enumeration of the major groups involved in the definitions.

It must be recognized also that in many countries the adoption of improved definitions and methods of enumerating the economically active population, or the adaptation of national practices to international standards, will involve major departures from previous census practices. In view of the importance of maintaining comparability with data for the past, this consideration will be a powerful obstacle to progress unless provisions can be made to determine the relationships between the results of the new methods and of the methods previously used. The problem is comparatively simple where the changes consist only in excluding from the economically active population certain specific, easily identified groups which were previously included, or vice versa. For example, in the countries which have deviated from the procedures recommended by international agencies in respect of the inclusion or exclusion of home houseworkers, domestic servants, institutional inmates, persons living on income from property, or members of the armed forces, it is not difficult to provide statistics that can be converted either to the international standard or to the classification previously used, simply by making separate tabulations for these groups. The problem is more serious where the change consists in adopting a new type of criterion for identifying the persons engaged in economic activities, or altering the kinds of questions used so as to achieve a more complete and accurate enumeration of the economically active group as defined. In that case, full knowledge of the effects of the changes requires the simultaneous application of both the new and the old methods. Sampling methods make it possible to obtain reliable measures of the effects of such changes with minimum expense and inconvenience.

# XI. INDUSTRY, OCCUPATION AND OCCUPATIONAL STATUS OF THE ECONOMICALLY ACTIVE

*(prepared by the Population Division of the United Nations in collaboration with the International Labour Office)*

## A. Classifications of industry, occupation and occupational status recommended by international agencies

By far the most important classifications of census statistics on the economically active population are those which describe the types of economic activities in which the workers are engaged, namely, industry, occupation and occupational status. "Industry" refers to the branch of economic activity pertaining to the enterprise in which the individual works. "Occupation" refers to the trade, profession or type of work in which the individual is engaged.[1] "Occupational status" (sometimes called "industrial status", "class of worker", "social status", "position in industry", etc.) refers to the classification distinguishing employees, employers, workers on own-account, and unpaid family workers, or similar categories. The League of Nations Committee of Statistical Experts, the Sixth International Conference of Labour Statisticians, and the Population Commission have all recommended that all three of these classifications be made in census data on the economically active population.[2]

The variations in the forms of these classifications as presented in the statistics of different countries have been studied in detail by various international agencies, with a view to the development of international standards. As stated in chapter X, an international standard classification of industries, prepared by the Statistical Commission, has been adopted by the Economic and Social Council; and the major groups of an international standard classification of occupations were adopted by the Seventh International Conference of Labour Statisticians, in October 1949. The recommendations of international bodies with reference to classifications by occupation status are set forth below.

The League of Nations Committee of Statistical Experts, in 1938, recommended[3] that the following categories of "personal status" (i.e. occupation status) be distinguished in population censuses: (1) employers, that is: persons working on their own account with paid assistants in their occupation; (2) persons working on their own account either alone or with the assistance of members of their families; (3) members of families aiding the heads of their families in their occupations; (4) persons in receipt of wages or salaries. Group 4 was to be subdivided as follows: (*a*) directors and managers; (*b*) other persons in receipt of salaries or wages, if possible distinguishing between persons in receipt of salaries and wage earners. The latter distinction was to be optional and was conceded to be of more value for national than for international analyses, particularly since such statistics are affected in some countries by specific legislation and by social insurance systems.

The Committee observed that in countries not taking censuses of population and of establishments simultaneously, a distinction between "employers" and "workers on own account" in the classification system would have to be made by a question on the population census schedule asking specifically whether a self-employed person had any paid assistants. It was also proposed that the classification by "personal status" should ". . . be applied to all branches of economic activity in order to permit the preparation of aggregate figures for the various groups".

The Sixth International Conference of Labour Statisticians, in 1947, recommended[4] that statistics of employed persons should include the following categories of "industrial status": (1) workers for

[1] The difference between industrial and occupational classifications is illustrated in the case of transport workers. A driver employed in a brewery is classified, in an occupational classification, under transport; in an industry classification he is placed under the brewing industry as a branch of manufacturers.

[2] See chapter X (part B) above.

[3] League of Nations. *Statistics of the Gainfully Occupied Population . . . (op. cit.)*, pp. 17-18.

[4] International Labour Office. *International Standards for Statistics of Employment, Unemployment, and the Labour Force . . . (op. cit.)*, p. 9.

public or private employers; (2) employers; (3) persons who work for their own account without employees; (4) unpaid family workers. No subdivisions of these groups were specifically recommended for international use.

At its third session, in May 1948, the Population Commission recommended that in censuses of population taken in or about 1950 data should be obtained on "the classification of the active population into employees (persons who work for wages or salaries in cash or in kind), employers (persons who operate economic enterprises in which they employ one or more employees), workers on own account (persons who operate economic enterprises without employees), and unpaid family workers (persons who do a specified minimum amount of work without pay in economic enterprises operated by other members of their households)".[5] At its fourth session, in April 1949, the Commission suggested, in connexion with its discussion of the tabulations of the census results,[6] that the employee category be subdivided into: "wage earners, salaried employees, directors and managers, professional workers who are employed for wages and salaries, and domestic servants". The Commission went on to suggest, "Where there are many persons who work for companies or employers but who receive a percentage of sales as remuneration, these persons also may be shown as a separate subdivision of category (i) [employees]. For the purpose of establishing these subdivisions of group (i), use may be made of other questions on the schedule in addition to that on industrial or social status, notably the question on occupation."

With regard to the definitions and methods of enumerating these categories, the Commission requested the Secretariat to submit to the Statistical Commission, to the specialized agencies and to Member Governments, for comment, a document containing proposals for international standards. A document containing such proposals, so far as the four major occupational status categories were concerned, was submitted to the Statistical Commission at its fourth session and subsequently circulated for comment to the specialized agencies and Member Governments.[7]

[5] *Report of the Population Commission* (third session) (*op. cit.*), p. 19.

[6] *Report of the fourth session of the Population Commission (op. cit.)*, pp. 34-35.

[7] Population Commission. *Proposals for Standardizing Definitions and Methods of Enumerating Industrial or Social Status Groups in Population Censuses.* United Nations document E/CN.9/C.2/3/Rev.2. 15 June 1949 (mimeo).

The Statistical Commission at its fourth session (April-May 1949) also considered the recommendations of the Population Commission regarding the categories of occupational status to be tabulated in population censuses. For the sake of clarity, the Statistical Commission recommended that the subdivisions of the employee category be changed to: directors and managers, professional workers who are employed for wages or salaries, other salaried employees, domestic service workers and other wage earners.[8]

A comparison of the recommendations of these international bodies shows that all of them agreed in proposing the four major categories of employees, employers, persons working on own account and unpaid family workers. It may be noted that these four major categories depend on the same general criterion of classification, which may be called the primary concept of occupational status, as recommended by international bodies. This criterion is the employment relationship existing between the individual and other workers in the establishment, if any. So far as it depends on this criterion, the classification by occupational status is distinctly different from that by occupation or by industry, as it does not refer either to the type of work done by the individual or to the type of activity of the establishment. In the various subdivisions of the employee group, however, the League of Nations Committee of Statistical Experts and the Population Commission have introduced other criteria. The distinction between salaried workers and wage earners depends, in principle, only on the way in which the employee is paid, but in practice it is commonly made on the basis of the type of work done. The identification of such groups as managers and directors, professional workers and domestic servants, as recommended by the Population Commission, depends entirely on type of work. These categories are therefore not conceptually distinct from occupational groups; in fact such categories have actually been included in the occupational classifications of many censuses.

The question of subdividing the major categories of occupational status was discussed by the Seventh International Conference of Labour Statisticians, in September and October 1949, in connexion with the international standard classification of occupations.[9] The Conference recom-

[8] Statistical Commission. Fourth session. *Summary record of the forty-third meeting.* United Nations document E/CN.3/SR.43. 28 April 1949 (mimeo), pp. 4-8.

[9] International Labour Office. Seventh International Conference of Labour Statisticians. *Report of the Committee on the International Standard Classification of Occupations.* 1949.

mended that the International Labour Office study the problem of finding internationally acceptable subdivisions of the major categories, and defining these subdivisions.

## B. Classifications by industry and occupation used in recent censuses

The problems involved in establishing acceptable principles for the classifications of the active population by industry and occupation and the various forms of industrial and occupational classifications used in different countries, have been discussed at length elsewhere.[10] The present discussion is therefore limited to census practices in the classifications by occupational status, which have not previously been treated in detail.

## C. Classifications by occupational status used in recent censuses

### 1. Purposes of the classification

In contrast to the uniformity of the recommendations of various international bodies concerning the main categories of occupational status to be distinguished, there have been striking differences in the classifications actually used in the recent censuses of various countries. In fact, the forms of the classification have been so diverse that only in a general sense can they be described as variations of the same type of classification of economic activities. An understanding of the merits of the different forms requires some consideration of the principal purposes for which data on occupational status of the active population are used.

A classification by occupational status in any form gives valuable information about the organization of economic activities. For example, the relative proportions of active population found in each of the four major categories recommended by the international agencies (employees, employers, persons working on own account and unpaid family workers) give a measure of the structure of economic enterprises which can be used as a rough index of the degree of economic development. The usefulness of the classification in this connexion is greatly enhanced if it is presented in combination with a classification by industry. Data in this form are valuable for analysing the factors affecting productivity, labour supply, unemployment, etc. in different industries.

For a careful analysis of the incidence of unemployment, data on the composition of the active population with reference to occupational status are essential. Employees are the group most susceptible to unemployment, while employers, persons working on their own account and unpaid family workers suffer relatively little risk of being totally unemployed (though their position in times of economic crises may be little better than that of unemployed wage earners.) This consideration becomes particularly important when unemployment statistics are used as indices of relative economic prosperity or depression in various countries.

Another important use of the classification is to supplement the information on types of work and skills given by data on occupations. Within a given occupational category, the nature of the work and the amount of skill and experience which it requires often differ in accordance with occupational status. For example, the responsibilities of an independent bricklayer who does jobs on contract differ substantially from those of a bricklayer employed by a construction company; the job of a shoemaker who operates a shop hiring one or more other shoemakers as helpers is not the same as that of his skilled employees. Census statistics on occupations are therefore commonly presented in combination with the classification by occupational status.[11]

The recent development in many countries of legislation relating to social security, wages, working hours, child labour and other matters affecting economic activities has given increasing importance to the classification of the working population by occupational status. Such legislation commonly has a different bearing on the various status groups. For example, legislation for the protection of workers against destitution due to unemployment, sickness, old age, etc. has commonly been limited entirely or largely to the employee group. In planning the provisions of such laws and in evaluating their effectiveness, as well as in their administration, information regarding the number of workers covered, in pro-

[10] International Labour Office. *International Standard Classification of Occupations.* 1949. League of Nations. *Statistics of the Gainfully Occupied Population . . . (op. cit.).* Annex II. "Minimum Nomenclature of Industries". Statistical Commission. *Report of the Committee on Industrial Classification.* United Nations document E/CN.3/35, 29 August 1947 (mimeo). Statistical Commission. *International Standard Industrial Classification of all Economic Activities.* United Nations document E/CN.3/63. 14 March 1949 (mimeo).

[11] Within classifications designated as "occupational" it is not unusual to find headings which are essentially categories of occupational status. For example, unpaid family workers and hired hands doing farm labour are commonly listed as separate "occupations".

portion to the whole economically active population, has an evident importance. The particular types of classifications by occupational status which are most useful in this connexion obviously depend on the laws in each country.

In some countries, much importance is attached to the use of the classification by occupational status as a rough scale of economic or social standing of the workers. The major categories of employees, employers, persons working on own account and unpaid family workers, as recommended by international agencies, are evidently not sufficient for this purpose. However, the subdivision of the employee category into groups such as managers and directors, other salaried employees and wage earners gives at least a rough indication of relative economic and social standing. In some censuses, much more extensive subdivisions of this type have been made; for example, such groups as "technical employees", "supervisory personnel", "apprentices", etc. have been distinguished. The introduction of categories which are essentially occupational (that is, which depend on the kind of work done and not on the status of the worker) also appears to have been intended mainly to improve the value of the classification as an index of economic and social standing. For example, the essentially occupational groups "professional workers employed for wages or salaries" and "domestic servants", proposed by the Population Commission as subdivisions of the employee category, are obviously pertinent to the differentiation of social and economic strata.

In addition to these major uses of the data, it may be pointed out that the classification by occupational status has a special value for purposes of international comparisons of statistics on the size and composition of the economically active population. The presentation of separate statistics for the category of unpaid family workers is especially important in this connexion, because, as pointed out above, one of the principal sources of non-comparability in the statistics for the economically active population as a whole is the variation in the numbers of persons enumerated as unpaid family workers.

### 2. Major types of classifications by occupational status

The four major categories recommended by international agencies (employees, employers, persons working on own account and unpaid family workers) have been presented in the published tabulations of recent censuses in only a few countries. In the censuses of Australia (1933), New Zealand (1936) and Ireland (1936) these four categories were tabulated, though the titles used for the categories were not the same in all these censuses, and there were differences in the definitions, especially of unpaid family workers. In addition, the censuses of Portugal (1940) and Poland (1931) showed more detailed classifications by occupational status, which permitted the derivation of totals for the four major groups.

In some censuses the classifications have differed from the ones recommended for international use only in that two of the basic groups were combined. Common among such classifications is one which does not distinguish between employers and workers on own-account, giving only three of the four recommended groups, employers and persons working on own-account, employees and unpaid family workers. The censuses of Bulgaria (1934), Canada (1941), Czechoslovakia (1930), Denmark (1940), Hungary (1941), Sweden (1945), Switzerland (1941) and the United States (1940) provided classifications of this type. In the census of Canada, a differentiation between employers and workers on own-account was made for all industries except agriculture. For reasons to be explained below this distinction is very difficult to make accurately, especially in agriculture.

Another type of classification given in some censuses identifies all recommended groups with the exception of unpaid family workers. In the censuses of Egypt (1937) and Cuba (1943), for example, workers were divided into three major groups: employers, own-account workers and employees. Only two of the recommended major groups: (*a*) employers and persons working on own-account, and (*b*) employees, were identified in the censuses of Chile (1940) and the Netherlands (1930). Where unpaid family workers have not been shown separately it has generally been impossible to determine from the census reports with which other category they were combined — whether with employees or with employers and persons working on own-account. As previously stated, it did not appear that they had been specifically excluded from the economically active population in any of the censuses studied.

Various subgroups of the major categories, particularly of the employee group, have been tabulated in many censuses, but none of those examined gave a classification of employees into the identical groups which the Population Commission suggested as being especially useful, namely: directors and managers, professional

workers who are employed for wages or salaries, other salaried employees, domestic service workers and other wage earners. However, one or more of these subgroups has been included in the classifications presented in many censuses.

Most common among the subdivisions of employees made in recent census tabulations is the separation of wage earners from salaried employees. Tabulations in about half of the censuses examined, including those of Austria (1934), Belgium (1930), Bulgaria (1934), Chile (1940), Czechoslovakia (1930), Denmark (1945), Germany (1939), Poland (1931), Portugal (1940), Sweden (1945), Switzerland (1941) and Yugoslavia (1931), among others, permitted such a distinction to be made. Among the censuses in which managers and directors, or some similar group of managerial employees, were identified in the classifications by occupational status were those of Italy (1936), Luxembourg (1935), the Netherlands (1930) and Switzerland (1941). The problems involved in identifying wage earners, salaried employees and managerial employees will be discussed below. Domestic servants have appeared as separate groups in the classifications by occupational status of a few censuses, for example that of Colombia (1938). It is much more usual to find this category in classifications by occupation.

Various other subdivisions not singled out by the Population Commission as being especially desirable for international comparisons have been presented in some census tabulations of occupational status. These subdivisions have generally involved other criteria of classification, in addition to the relationship of the individual to other workers in the enterprise, and thus have made the classification a highly diversified one. However, if the subgroups fall within one of the major recommended categories, they in no way impair international comparability in terms of the four major groups.

In the United States census of 1940, employees were divided into two subgroups on the basis of type of ownership of the enterprise; (*a*) those working for government and (*b*) those working for private employers or organizations.

This subdivision, of course, does not hinder international comparisons for the total of all employees (i.e. wage earners as well as salaried employees). It is probably the best means of obtaining a total count of all persons working for the government, including not only those working in establishments which have peculiarly governmental functions (e.g. legislative and judicial), and which are therefore commonly identified as "government" in classifications by industry, but also those in establishments operated by the government in which the work is similar to that in many privately operated establishments. In classifications by industry, the latter are customarily allocated to the various industrial groups corresponding to the activities of the establishments concerned, so that only from a separate classification, such as that by occupational status, could the total number of government workers be obtained.

Certain classes of government workers have also appeared in occupational status classifications in the 1935 census of Luxembourg ("officials of the State and communes"), and the 1940 census of Portugal ("persons performing civil or military functions for the State or administrative corps and receiving a monthly salary"). The omission of certain groups of government workers such as the armed forces from occupational status classification in some censuses is discussed in section 3 below (Population coverage of classifications by occupational status).

The Portuguese census also showed a subdivision of employees into those paid by the day or week, by the month and by the year. Other subgroups of employees which have occasionally been identified are apprentices in the censuses of Australia (1933), Austria (1934), Czechoslovakia (1930), Egypt (1937), New Zealand (1936), Poland (1931), Switzerland (1941) and Yugoslavia (1931); and industrial home workers in the censuses of Czechoslovakia (1930), Italy (1936), Poland (1931) and Switzerland (1941). Classifications such as these provide data which are valuable for many purposes, and in no way interfere with international comparisons of statistics for major groups.

The occupational status classifications published in the censuses of Czechoslovakia (1930) and Switzerland (1941) contained statistics for numerous subgroups of employees, some of them being definitely occupational. Among the many groups into which employees were divided in the Swiss census are: directors, superior technical employees, subordinate technical employees, skilled workers and apprentices. Separate categories of employees shown in the Czechoslovakian classification, included "officials", "subordinate personnel", "wage workers", "apprentices", "day labourers" and "industrial home workers". The inclusion of numerous subgroups in these classifications does not affect international comparability

of the data since the minor groups are such that they may be combined to form one of the recommended major categories.

Employers and persons working on own account have also been subdivided in some censuses. In the 1940 census of Portugal each of these major groups was divided into: (1) those owning agricultural land, (2) those renting agricultural land, (3) partners in agricultural enterprises and (4) those in non-agricultural enterprises.

In contradistinction to these subdivisions of the recommended categories are classifications in which the major categories are based on concepts differing from those recommended by international bodies, and which cannot be converted to the recommended form. For example, in quite a few censuses the concept of the "employer" group has been based on function rather than on ownership of an economic enterprise. In the census of Colombia (1938), for example, managers and directors were placed in the same category with owners and partners. The major categories of occupational status distinguished in the censuses of England and Wales and Scotland in 1931 included: (1) "managerial personnel", including employers; (2) "operative employees", that is, employees not in supervisory capacities, and (3) "own-account workers". In the Belgian census of 1930 managers and directors were classified in the same group with employers, if they were responsible for the daily management of an establishment and were not under the direct supervision of another administrator. According to the primary concept underlying the international recommendations, which refers to the employment relationship between the individual and other workers in the establishment and not to the function he performs, salaried officials such as managers and directors should evidently be classified as employees.

Detailed classifications generally resembling those by occupational status but based to a large extent on strictly occupational criteria, were published in the censuses of Colombia (1938) and Italy (1936). In neither census was a standard classification applied uniformly to persons in all industries. Instead, different groups, partly representing occupational status and partly occupation, were identified within the various major industries. The summary groups shown in the Colombian census for all employed persons included: "owners, directors, chiefs, managers", "salaried employees", "day labourers and wage workers", "farmers and settlers", "family workers in agriculture", "servants in agriculture" and "servants in general". In the census of Italy, on the other hand, such groups were shown as "owners and employers", "craftsmen", "directors and managers", "liberal professions", "servants and labourers", "home workers" and "family helpers". Such classifications cannot be used to derive the internationally recommended major categories.

In the Finnish census of 1940 various groups of supervisory personnel were distinguished from subordinate workers within each of the branches of economic activity. A uniform classification was not applied to all industry groups, however, and no aggregate totals were presented for categories resembling occupational status groups. In the census of Norway (1930) a detailed classification of the economically active population, based on a variety of criteria, was made apparently as an index of social and economic status. Among the groups identified were "heads of enterprises", "higher employees", "specialists", "office and store employees", "foremen" and "workers".

The 1936 census publications of France presented a classification differing from that of other countries in that it made a basic distinction between persons working in establishments (defined as two or more persons working together in a permanent manner and in a determined place) and isolated workers (including persons working on their own account as well as wage workers with no fixed employer). Persons working in establishments were divided into (1) chiefs, including managers and directors; (2) salaried employees; and (3) wage workers. In recognition of the fact that this classification did not distinguish all basic categories of occupational status, isolated workers were further divided into three categories: workers on own account, persons working at home for piece-rates, and wage workers having no fixed employer. The data were regrouped to obtain totals for "patrons" as distinct from "employees" — a classification referred to as "social position". This classification more nearly approaches the concepts recommended by international agencies, but it was shown only in summary form, cross-classified only by sex, and managers and directors were included in the group of "patrons".

### 3. Population coverage of classifications by occupational status

In general, classifications by occupational status have related to the whole population identified as

economically active.[12] However, differences in coverage have resulted from variations in definitions of the economically active population, and in some cases from the omission of certain segments of the economically active from classifications by occupational status.

(*a*) *Coverage of the unemployed.* In most censuses persons with gainful occupations but out of work at the time of the census have been included in the economically active population and classified according to the status of their "most recent", "last regular" or "usual" job. The unemployed usually have either been tabulated separately by occupational status (as in the censuses of Austria 1934, Czechoslovakia 1930, Switzerland 1941, and the United States 1940) or they have been merged with the employed (Bulgaria 1934, Hungary 1941 and Germany 1939).

In some censuses, on the other hand, classifications by occupational status have been limited to those members of the economically active population who were employed at the time of the census, the unemployed being shown as a separate group not distributed by occupational status. Such was the method in the censuses of Great Britain (1931), Ireland (1936) and Australia (1933). Occasionally the unemployed have been shown as a separate group but have been excluded from the active population (e.g. Colombia 1938, Panama 1940 and Peru 1940). Exclusion of unemployed persons from the classification by occupational status may impair comparisons with data from censuses in which the entire economically active population has been classified in this way. It is true, however, that in some censuses where the unemployed have not been classified by occupational status, they have been defined so as to include only employees (e.g. in Ireland 1936). In such cases, the unemployed may be added to the employee group for purposes of international comparisons.

The definitions recommended by the Population Commission for use in future censuses call for the inclusion of unemployed persons in the statistics relating to the economically active population and for their classification by occupational status according to their status in some specified previous job. According to the recommendations of this body, unemployed persons who have not previously been employed are to be shown as a separate group.[13]

(*b*) *Coverage of the liberal professions.* In some censuses persons engaged in the liberal professions have been excluded from the classification by occupational status. This practice was followed in the censuses of Belgium (1930) and the Netherlands (1930). The result is that totals for the four major categories recommended by international agencies cannot be obtained since many professional workers are employees while many others are employers or workers on own account, and a few may be unpaid family workers. The same result occurs where the liberal professions are designated as a category of the classification by occupational status, without distinction between those who work for wages or salaries and those who are employers or workers on own account, as in the censuses of Italy (1936), Panama (1940), Romania (1930) and Venezuela (1941). The latter procedure doubtless reflects a desire to make the classification by occupational status serve better as an index of economic and social standing.

The presentation of data for those professional workers who are employed for wages or salaries, as a subdivision of the employee group (in accordance with the suggestion of the Population Commission) does not limit the coverage of the four major categories.

(*c*) *Coverage of domestic servants.* Domestic service workers, like professional workers, have sometimes been omitted from tabulations of occupational status (for example, in the 1930 census of Belgium) and sometimes presented as a separate, undifferentiated category of the classification (as in the 1938 census of Colombia). Furthermore, in the censuses of a considerable number of European countries (e.g. Austria 1934, Czechoslovakia 1930, Denmark 1940, Luxembourg 1935 and Romania 1930) those domestic servants who live in the household of the employer have been considered, in effect, as dependants, being excluded from all the basic tabulations of the economically active population. The usual procedure of tabulations relating to economic activities in these censuses is to classify servants, as well as other household members considered as dependants, according to the industry, occupation, and occupational status of the household head. In these tabulations the figures for servants and other household members are ordinarily presented separately.

[12] In a number of censuses the entire population has been classified by occupational status, as well as by industry and occupation, dependants being classified according to the status of the individuals who supported them, or according to the status of the heads of households in which they were living (see chapter XIV).

[13] *Report of the fourth session of the Population Commission (op. cit.)*, p. 34.

Since those domestic servants who live with an employer can all be regarded as employees, the procedure of classifying them by activity of the household head does not prevent the derivation of totals for the four major categories of occupational status, provided that the servants are tabulated separately. Also, where domestic servants are defined in such a way that all of them are employees, their presentation as a separate category does not preclude a re-grouping to obtain the totals for the major categories. This type of definition is implied in the recommendation of the Population Commission that domestic servants be tabulated as a subgroup of employees, and is in accordance with the definition of the "domestic service" industry contained in the International Standard Industrial Classification. However, "domestic service" has sometimes been defined (for example, in the classification by industry for the 1940 census of the United States) to include some persons working on their own account for their own clients, e.g., women who take in laundry and sewing at home.

(*d*) *Coverage of workers in public administration.* Workers engaged in public administration are another group sometimes excluded from classifications by occupational status (e.g., in the 1930 census of Belgium). If this group includes only government workers and is shown separately in the industry classification, it may be aded to the figures for other employees in order to derive totals for the major recommended categories.

(*e*) *Coverage of the armed forces.* Classifications by occupational status in most recent censuses have referred to the total active population including the armed forces, but there have been some exceptions to this rule. In the census of Canada in 1941, for example, armed forces were shown in published tables of the total economically active population but excluded from the classification by occupational status.

The schedules used in a few recent censuses (e.g., that of the Netherlands in 1947) have called for information on previous civilian occupations of persons in the armed forces. In tabulations, such persons presumably would be classified according to their status in their last civilian job. Although there may be some merit in classifying military personnel — especially those only temporarily in the military service — according to last civilian job, this practice has not been common.

The Sixth International Conference of Labour Statisticians called for identification of the armed forces separately from the "civilian labour force" and did not recommend their inclusion in the tabulations by occupation, industry and occupational status.[14] On the other hand, the Population Commission recommended the inclusion of the armed forces in these tabulations.[15] From the standpoint of international comparability of data on occupational status, no problem is presented if the armed forces are shown as a separate group within the active population or in some other tabulation. Since members of the armed forces are exclusively employees, they may be added to that group to get the totals for the recommended major categories of occupational status.

(*f*) *Coverage of persons not economically active.* The discussion thus far has been concerned with the omission from classifications by occupational status of certain groups which form parts of the economically active population as defined by the Population Commission and the Sixth International Conference of Labour Statisticians. Mention should also be made of instances where persons not included in the recommended definitions of the active population have been included in classifications by occupational status.

The Czechoslovak census of 1930 affords an example of a classification by occupational status which covered retired persons, pensioners, persons living off investments and other persons without occupation but with independent income. These persons were included with workers on own account in the distribution by occupational status. Other censuses in which certain groups of economically inactive persons were classified in the same group with own-account workers include those of Romania in 1930 (retired persons and persons with independent means), Bulgaria in 1934 (persons supported by the public, or by institutions, societies or foundations), and Mexico in 1940 (proprietors not working in their businesses). Retired persons, and persons without occupation but with independent income were distributed among three groups of occupational status in the 1941 census of Hungary: "independents", "employees", and "workers", according to their status in their former jobs.

Inclusion in classifications by occupational status of economically independent persons without occupation, such as those discussed above, will impair the international comparability of the statistics if such persons cannot be identified separately and subtracted from the totals.

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[14] International Labour Office. *International Standards for Statistics of Employment, Unemployment and the Labour Force . . . (op. cit.).*

[15] *Report of the Population Commission* (third session) (*op. cit.*), p. 19.

### 4. Problems in enumerating and defining certain groups of occupational status

(*a*) *Unpaid family workers.* The problems of defining and enumerating unpaid family workers are primarily problems of distinguishing them from persons not economically active, rather than from other categories of the active population. They are discussed in chapter X as an aspect of the problem of defining and enumerating the economically active population. Here it is necessary only to discuss briefly certain questions involved in the distinction between unpaid family workers and employees.

Definitions of unpaid family workers have occasionally included persons other than family members. In the 1941 Canadian census, for example, "unpaid family workers" were defined to include some employees of institutions who during training periods receive only room and board as payment for services rendered, and also members of religious orders having no fixed money payment. Persons such as these do not fall within the scope of the usual concept of unpaid family workers. The definitions most generally used imply that staff members of institutions, those who receive room or board or some other type of pay in kind are to be classified as employees, while those receiving no remuneration of any kind are excluded from the active population. Another example is found in the census of Australia (1947) where the instructions for enumeration of the category corresponding to unpaid family workers (persons helping but not receiving wages or salaries) did not confine this category to persons helping in a family enterprise. *Employees or relatives* were to be reported in this category if they worked without pay in the operation of a business or farm.

In numerous censuses, among them those of Ireland, the Netherlands, Norway, Sweden, and Switzerland, no attempt has been made to separate those family helpers who receive pay for their work in the family enterprise from those who do not. The distinction between paid and unpaid family helpers may be difficult to make in the case of persons who receive cash allowances, which may or may not be dependent upon the work performed.

(*b*) *Employers and workers on own account.* Experience has shown that a division of self-employed persons into those who are employers and those who are workers on their own account is difficult to make accurately in population censuses. Nevertheless, all international agencies which have considered the matter have recommended that statistics be presented separately for these two groups.

In somewhat less than half of the censuses containing tabulations relating to occupational status has an attempt been made to separate employers from persons working on their own account. The 1940 United States census schedule called for separate identification of employers and own-account workers, but analysis of preliminary tabulations of these statistics revealed their unreliability, and the two groups were combined in published tabulations.

Enumerators or respondents may overlook the fact that persons operating small business establishments and farmers may employ one or more hired workers and therefore qualify for inclusion in the "employer" category. There may be some failure also to count as employers persons in the liberal professions who practise their profession independently and employ one or more paid assistants (e.g. nurse or secretary). On the other hand, errors in the opposite direction may occasionally occur, for example, in classifying as "employers" persons who employ only domestic servants in their own households, and persons aided in their businesses only by unpaid family workers. The problem of obtaining a classification on a uniform basis is also complicated, where the "gainful worker" concept is used, by possible variations in the reporting of persons who employ hired workers only occasionally or only during certain seasons of the year, as is common in farm areas.

In addition to the problem of accurate reporting, some questions of concept are involved in the distinction between these two groups. In general, "employers" are defined as persons operating economic enterprises, alone or in partnership, and employing one or more paid workers in connexion with their businesses. Conversely, persons working on their own account have usually been defined as those operating their own businesses, farms or professional enterprises and employing no one other than unpaid family workers in connexion with their work. Persons employing only domestic servants in their own households have not generally been defined as employers unless, in addition, they employed persons in connexion with their businesses.

Departures from these definitions have been observed in a few censuses. In the census of Portugal (1940), persons operating agricultural, commercial or industrial enterprises who usually had one or more persons working for them were classified as employers. Persons in the liberal professions,

however, were required to have five or more employees working for them in order to be enumerated as employers. In the census of the Netherlands (1947) persons who were assisted in their businesses by their children were defined as employers, but those assisted only by their wives or partners were not so defined.

(*c*) *Salaried employees and wage workers.* The distinction between these two groups depends in principle on the type of payment received, i.e. whether paid a salary computed on a monthly or yearly basis, or a daily or hourly wage. However, the object of distinguishing between them is primarily to give an indication either of the kind of work done or of the economic level and social standing of the workers. In fact, in the majority of the censuses where separate data on salaried employees and wage earners have been given, the distinction has been made primarily on the basis of function, whether "manual" work or work of an administrative, supervisory, sales, clerical or predominantly "intellectual "nature. Other criteria used have included the type of social insurance system to which the worker belongs, type of trade union, grade of position and the like.

Belgium (1930), Bulgaria (1934) and France (1936) are examples of censuses in which employees were divided into these two groups primarily according to whether they were engaged in manual or non-manual work. In the census of Poland (1931) the division was based primarily on a person's status under the social insurance law. The criteria used in the 1945 census of Sweden were the kind of work, education required, grade of position and type of trade union.

The classification of employees into these two groups is one of the most difficult divisions to make objectively and uniformly. It has been attempted in quite a few censuses, particularly in Europe, because of its usefulness for analyses of economic and social status. It was presumably for this reason that the League of Nations Committee of Statistical Experts and the Population Commission suggested that the subdivision be made. The Sixth International Conference of Labour Statisticians, however, did not call for this subdivision, probably because of the difficulty which it entails in enumeration and coding of the census returns, and because of the limited value of the results for international comparisons.

(*d*) *Persons working on commission.* In the case of persons such as salesmen who receive no set salary, but who are paid a percentage of their sales, there is a question whether they should be included with employees or with persons working on own account. In most censuses this question has not been mentioned either in the instructions for filling the census schedule or in the published explanations of the tabulated data. In the censuses of the United States (1940) and Canada (1941) persons working on commission were classified as employees, since they are dependent on employers. In the Polish census of 1931, on the other hand, they were included in the category of employers and persons working on own account, though it was recognized that they were a borderline group. The latter procedure may be defended on the ground that such workers are similar to independent merchants in that they often work on their own initiative with little or no control from the owners of the merchandise sold, and their remuneration depends on the volume of sales. The similarity is closest in the case of salesmen who handle the goods of more than one firm.

The Population Commission recommended that in countries where the number of workers on commission is large, it would be useful to show such persons as a separate subgroup of employees.[16]

(*e*) *Persons working for piece-rates.* As pointed out earlier, the classifications by occupational status used in a number of censuses have included a separate group of persons working at home for piece-rates. In a number of other censuses these persons have been combined with employees. A different practice was followed in the 1940 census of Greece, where instructions specified that persons working "by the piece" at home or at the client's residence should be considered as workers on own account. According to the concepts recommended by international agencies, persons working in their own homes for piece-rates paid by their own clientele appear to meet the requirements for inclusion in the group of persons working on their own account, as do such persons as painters, carpenters and plumbers who have their own businesses, though they usually work at the client's home and are paid by the hour or "by the job". On the other hand, those who work at home for an employer, being paid by the piece, appear to meet the definition of employees.

## D. Formulation of census questions on industry, occupation and occupational status

Experience with census classifications of economic activities of the population, accumulated in many countries over a century or more of census taking history, has shown that reliable classifications in sufficient detail for the major uses

[16] *Report of the fourth session of the Population Commission (op. cit.),* pp. 34-35.

of the data are very difficult to achieve. Good results depend on careful arrangement and wording of the questions so as to obtain a clear and specific description of each person's job in terms which are suitable for classification into a standard list of categories. They also require adequate instructions to enumerators or respondents concerning the manner in which the answers should be given, and careful editing and coding of the returns by a trained clerical staff.

### 1. Arrangement of the questions

In those censuses taken during the nineteenth century or before which included investigations of economic activities, it was often considered sufficient to provide a space on the census schedule under the heading "occupation", or some similar term, where the enumerator or respondent was to write, in a word or two, the nature of the job or calling. This method, of course, gave no basis for classifications by industry as distinguished from occupation, nor by occupational status. Even the classifications by occupation which were derived by this method were unsatisfactory by modern standards. The replies to such a simple question tended to be too vague to permit the distinctions now considered necessary for an adequate classification. In many cases the person's job was likely to be described in terms of the activities, or even the mere name, of the establishment where he worked, or in terms of occupational status, instead of strictly occupational terms. Even a precise description from a purely occupational point of view would have been inadequate in many cases for a modern occupational classification, for the identification of many of the occupational groups distinguished in present-day classifications requires reference to the industry in which the work is done and to the occupational status as well as to the occupational designation reported on the census schedule. For these reasons, the questions on economic activities in the recent censuses of most countries have been divided into several parts, the usual procedure being to call for separate reports on occupation proper, on industry (branch of economic activity), and on occupational status. In a few recent censuses, however, (for example those of the Dominican Republic 1935 and Syria 1947) the method of a single question on "occupation" has been retained.

### 2. Phrasing of questions on occupation and industry

The distinction between occupation and industry, as two aspects of a person's economic activity, is not likely to be understood by most respondents or enumerators without some explanation. One method commonly used to clarify the meaning of these questions on the census schedules has been to print on the census schedules explanatory phrases or questions worded in such a way as to make clear the kind of answer that is desired. Some examples of the headings used in a few recent censuses are given below:

*Canada, 1941*

*Occupation:* Trade or profession, as stationary engineer, insurance agent, etc.

*Industry:* Give kind of product made or dealt in or service rendered, and branch of industry.

*Poland, 1931*

Col. 20: Designation of principal occupation, trade, special function or other kind of lucrative work furnishing the principal means of subsistence.

Col. 23: Kind of enterprise, manufacture, shop, store, business, institution, office where the enumerated person works. If the enterprise is composed of a number of distinct establishments, indicate, besides, the kind of establishment.

*Philippines, 1948*

*Usual occupation:* Trade, profession, or particular kind of work done; as teacher, farm laborer, farmer, miner, etc.

*Industry:* Kind of farm, industry, business, factory, store, etc. in which this person is employed or works, as sugar-cane farm, coconut farm, grocery store, gold mine, etc.

An alternative or additional means of explanation is to print some examples of appropriate entries on the schedule. This method also has been widely used in recent censuses. In addition to their usefulness for clarifying the meaning of the questions, such examples have the value of indicating the degree of detail that is desired in the description of the person's job. They can also be used as an effective method of calling attention to certain specific distinctions between similar occupational or industrial designations, which are necessary for the desired classifications but which may be overlooked by the enumerators and respondents.

### 3. Forms of questions on occupational status

Since the number of categories to be distinguished in the classification by occupational status is much smaller than in the occupational and industrial classifications, the problem of clarifying the meaning of the question is simpler. It can be done by listing the various categories in a multiple-

choice question or by asking a series of questions designed to identify separately each of the categories.

In some censuses the various categories of occupational status have been printed within the space on the schedule where the entry for each individual was to be made. Thus the question could be answered simply by underlining the appropriate category or marking a check in a designated place opposite it, etc. In some other censuses, the list of categories has been printed in the column headings or elsewhere on the schedule, sometimes with a code symbol for each category. The enumerator or respondent has then been instructed to write the appropriate category or symbol in the designated place for each individual.

The list of categories for a multiple-choice question can either be limited to the groups to be distinguished in the final tabulation, or it can be expanded to identify more or less detailed subgroups which constitute special problems of classification. Examples of the latter procedure are found in the censuses of Hungary and Switzerland in 1941. Among the categories listed on the Hungarian schedule were worker on own account, official, production manager, skilled worker, semi-skilled worker, day labourer, servant who lives in, servant employed on the farm, etc. The respondent was instructed to underline the entry which best described his status, or if none was applicable, to write in a different entry. The categories shown on the schedule were combined in the published tabulations into four major groups: employers and workers on own account, salaried employees, wage workers and unpaid family helpers. The Swiss census schedule contained two separate lists of possible entries for occupational status. The first list related to agriculture, and the second to all other branches of economic activity. Among the possible entries were: owner of enterprise, partner, director, manager or superintendent, foreman, skilled worker, apprentice, etc. Many of these same groups were identified separately in the published tabulations, although a summary of major categories was also presented. The use of a detailed list of categories for enumeration eliminates the need for specific instructions to enumerators and respondents concerning the allocation to major categories of problem groups such as managers and directors, commission salesmen, etc. The main disadvantages of this method are that it requires a considerable amount of space on the schedule, and that the categories listed may duplicate the occupational entries in some cases.

An example of a compact multiple-choice question referring only to a few major categories of occupational status is found in the 1940 census of the United States. Enumerators were instructed to indicate, by means of code symbols, whether each worker was working for government, for a private employer, in his own business, farm, etc., with one or more paid employees, in his own business, etc. without employees, or without pay on a family farm or business. The primary advantages of such an approach are that it conserves space on the schedule; it focuses attention on the basic groups to be identified, rather than on occupational subgroups; and it keeps coding and tabulation work to a minimum. This method requires, however, that detailed definitions of the major categories be contained in the instructions for filling the schedule. Enumerators or respondents must be instructed how to classify persons whose status may not be entirely clear, e.g. persons working on commission or persons working at home for piece-rates for an employer. There is no assurance that such instructions will be studied and applied uniformly in all cases.

In censuses where major groups only are identified by the schedule question relating to occupational status, the tabulations of results may nevertheless provide numerous subgroups, along the lines suggested by the Population Commission. Such classifications can be obtained by cross-classifying occupational status with occupation and industry.

The schedule for the Netherlands census in 1947 contained a series of questions relating to occupational status. The following questions, *not* consecutively arranged on the schedule, were among those asked of males:

"Does he work daily in a business owned by the head of the family (his father)?

"Is he owner of a business, part-owner, partner, lessee, tenant, manager of a branch establishment, skipper (not owner of a vessel)? If so, state what he is.

"If he has a business of his own does he work without personnel?

"If he is not the head of a business, does he have a leading position in the business? If so, state what it is, e.g. works manager, foreman, overseer, shop walker, branch manager, chief salesman, etc."

Such a series of questions has the disadvantage of using a considerable amount of space, and tends to complicate tabulation processes.

In a number of censuses where most of the groups of occupational status were identified by one question, additional questions have been asked relating to specific groups, usually employers or

unpaid family workers. In the Norwegian census of 1946, for example, a separate question was addressed to persons having their own businesses in order to determine whether or not they had any employees. A question on the census schedule used in Denmark in 1940 inquired of wives and children over fourteen living at home whether they helped the head of the household in his occupation. Such questions are likely to result in more accurate and complete reporting of persons engaged in the activities mentioned. They have the disadvantage, however, of imposing an additional burden in enumeration and in the processing of returns.

In some recent censuses information on occupational status has not been obtained from a separate question, but in connexion with other questions on economic activities. Reference is made in chapter X to the use of a classification by occupational status as a part of the basic question distinguishing between the economically active population and various inactive groups. This method was applied in the 1945 census of New Zealand, where the active population was identified by means of a multiple-choice question listing twelve categories of economic and other activities, of which four were subdivisions of employed civilians by occupational status. As stated previously, such an arrangement may improve the enumeration of the economically active by calling to the attention of enumerators and respondents the specific types of activity which are regarded as economic. However, in the form used in New Zealand it had the disadvantage of providing no data on occupational status of unemployed persons seeking work.

In the census of Venezuela 1941, certain groupings of the active population relevant to occupational status were derived entirely from examination of the entries on occupation and industry, with no specific question whatever on occupational status. This method is evidently inadequate. In many cases statements of occupation and industry, even though given in quite specific terms, permit only an uncertain conjecture as to the worker's occupational status. It should be noted, however, that the quality and completeness of returns from a specific question on occupational status can be greatly improved by checking them against the occupation and industry entries for each worker, correcting returns that are obviously inconsistent, and supplying missing entries where they can safely be inferred from the occupation and industry reports.

## E. Tabulations of census results on occupation, industry and occupational status

### 1. Tabulations recommended by international organizations

The recommendations of various international bodies to the effect that data on occupation, industry and occupational status should be obtained in population censuses and classified according to certain specified standards, of course apply not only to the collection of the original data on the census schedules but also to the published tabulations of results. In addition, some of these bodies have made observations regarding the manner in which the classifications by occupation, industry and occupational status may be tabulated in relation to one another, so as to provide more adequate information on the economic activities of the people.

The suggestions of the Population Commission concerning desirable tabulations of census returns, which were contained in the report of its fourth session, included the following paragraph relating to tabulations by industry, occupation, and "industrial or social status" (that is, occupational status):[17]

"Under this heading two principal tabulations are suggested: (i) a tabulation by industry . . . for the economically active population cross-classified by industrial or social status . . . and (ii) a tabulation by occupation . . . for the economically active population cross-classified by industrial or social status. Both these tabulations should be made for each sex separately. Unemployed persons who have not previously been employed should be shown as a separate category in classifications by industry, occupation, or industrial or social status."

The Commission went on to suggest that, where more detailed tabulations could be made, a cross-tabulation by occupation for economically active persons in each industry be provided, if possible, by sex.

The Committee on the 1950 Census of the Americas, at its second session, included in its preliminary minimum list of tabulations to be recommended to participating countries, the tabulation of "industrial status (class of worker), i.e. employees, employers, own-account workers, and unpaid family workers, in each industrial

[17] *Report of the fourth session of the Population Commission (op. cit.)*, p. 34.

group, by sex".[18] Tabulations of data on individual occupations were among the subjects referred by the Committee to its Co-ordinating Board, for the preparation of studies and proposals to be considered at the third session of the Committee.

The Population Commission and the Committee on the 1950 Census of the Americas also listed certain tabulations of data on industry, occupation and occupational status in relation to employment and unemployment, and to age, which are discussed in chapters XII and XIII.

### 2. Tabulations presented in the publications of recent censuses

Table 30 shows that a classification of the economically active population by either industry or occupation has appeared in the reports of nearly all the recent population censuses examined for this study. To be sure, in some censuses of less developed countries not covered by the table, these tabulations have not been undertaken or have been limited to small segments of the population.

The degree of detail in the classifications by occupation and industry varied greatly from country to country. The number of industrial groups presented varied from less than twenty in the 1940 censuses of Brazil and Panama to more than 400 in those of Austria (1934) and Scotland (1931). The detail of occupational classification ranged from a simple differentiation of professional persons from other workers in the 1935 census of the Dominican Republic to more than 500 occupational groups in the census of Switzerland (1941).

The table indicates that industrial classifications were tabulated in thirty-five of the fifty-three censuses studied, and occupational classifications in thirty-three. The exact number of countries presenting classifications that referred strictly to industry or to occupation is somewhat doubtful, for in some cases classifications which appear to refer to industry may actually be based on data for occupations, grouped according to the industries in which the various occupations are most commonly found.[19] In some cases (e.g. the census of Yugoslavia, 1931) the classification was a hybrid, consisting of an industrial classification in certain fields and an occupational classification in others.

In twenty-two of the fifty-three censuses examined, both industrial and occupational classifications were given. The tabulation of both types of classifications in so many censuses is evidence of the fact that both are needed to satisfy basic statistical requirements.

Cross-tabulations of industry by occupation are exceedingly valuable, for they permit a comprehensive analysis of the types and skills of workers within each industry. Despite their great value, data of this type have not been provided by the majority of censuses, largely because they are expensive. The reports of thirteen of the censuses listed in table 30 included such cross-tabulations, but the amount of detail shown varied greatly from country to country.

In a number of censuses, data have been tabulated on subsidiary occupation, or on the industry in which the subsidiary occupation is followed. These include, for example, the censuses of Belgium (1930), Czechoslovakia (1930) and Norway (1930). A cross-classification of principal and subsidiary occupation or industry was shown in the censuses of Czechoslovakia and Norway. This cross-classification is valuable for detailed analysis of occupational skills and of the sources from which workers draw their support, especially in countries where many workers are engaged concurrently in agriculture and other industries, or where there is much seasonal shifting of occupations. Like the cross-classification of industry and occupation, it is costly.

Some form of classification by occupational status has been given in the reports of most of the recent censuses. Of the fifty-three censuses listed in table 30, thirty-four provided tabulations on this subject. In thirty-one censuses, the classification by occupational status was cross-tabulated with industry. This cross-tabulation, showing the numbers of employees, employers, independent workers and unpaid family workers, or like groups, in each industry, gives valuable information not only on the characteristics of the labour supply but also on the organization of production and structure of economic enterprises in each branch of activity. It has been suggested both by the Population Commission and by the Committee on the 1950 Census of the Americas as one of the tabulations to be provided from 1950 census data. The cross-tabulation of occupational status with occupation is also valuable. It enhances the value of

[18] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . . (op. cit.)*, p. 30.

[19] In compiling table 30, all available information was utilized to determine whether the classifications given referred to industry or to occupation. Where explanations were not given in the census reports, it was necessary to make the determination by inspecting the titles of the groups contained in the classifications. It is believed that some classifications designated in this way as industry may have been derived from tabulations of occupations, or vice versa.

## Table 30. Tabulations of industry, occupation and occupational status of the economically active population in recent censuses

("x" indicates that the specified classification was presented; "–", that it was not presented; ".." that information on the tabulations was not available or was not complete)

| Country | Census year | Industry | Occupation | Occupational status | Industry by occupation | Industry by occupational status | Occupation by occupational status |
|---|---|---|---|---|---|---|---|
| AFRICA: | | | | | | | |
| Egypt | 1937 | x | x | x | – | x | – |
| Union of South Africa | 1936 | x[1] | x | – | – | – | – |
| AMERICA: | | | | | | | |
| Argentina | 1947 | .. | .. | .. | .. | .. | .. |
| Brazil | 1940 | x | .. | .. | .. | .. | .. |
| Canada | 1941 | x | x | x | x | x | x |
| Chile | 1940 | x | x | x | .. | x | .. |
| Colombia | 1938 | x | – | x | – | x | – |
| Costa Rica | 1927 | .. | .. | .. | .. | .. | .. |
| Cuba | 1943 | x | x | x | – | x | x |
| Dominican Republic | 1935 | .. | x[2] | .. | .. | .. | .. |
| El Salvador | 1930 | – | x | – | – | – | – |
| Guatemala | 1940 | – | x | – | – | – | – |
| Honduras | 1945 | – | x | – | – | – | – |
| Mexico | 1940 | x | – | x | – | x | – |
| Nicaragua | 1940 | x | .. | .. | .. | .. | .. |
| Panama | 1940 | x | x | x | x | x[3] | x |
| Paraguay | 1936 | .. | .. | .. | .. | .. | .. |
| Peru | 1940 | x | – | x | – | x | – |
| United States of America | 1940 | x | x | x | x | x | x |
| Venezuela | 1941 | x | – | x | – | x | – |
| ASIA: | | | | | | | |
| India | 1931 | – | x | – | – | – | – |
| Japan | 1940 | x | x | x | x | x | .. |
| Philippines | 1939 | –[4] | x[4] | –[5] | – | –[5] | –[5] |
| Syria | 1947 | .. | .. | .. | .. | .. | .. |
| Turkey | 1935 | – | x | – | – | – | – |
| EUROPE: | | | | | | | |
| Austria | 1934 | x | x | x | x | x | x |
| Belgium | 1930 | – | x | x | – | – | x |
| Bulgaria | 1934 | x | x | x | x | x | x |
| Czechoslovakia | 1930 | x | x | x | – | x | x |
| Denmark | 1940 | x | x | x | – | x | x |
| Finland | 1940 | x | – | x[6] | – | x[6] | – |
| France | 1946 | x | .. | .. | .. | .. | .. |
| Germany | 1939 | x | x | x | .. | x | x |
| Greece | 1940 | .. | .. | .. | .. | .. | .. |
| Hungary | 1941 | .. | x | x | .. | .. | x |
| Ireland | 1936 | x | x | x | x | x | x |
| Italy | 1936 | x | x | x | x | x | x |
| Luxembourg | 1935 | x | – | x | – | x | – |
| Netherlands | 1930 | x | x | x | –[7] | x | x |
| Norway | 1930 | – | x | x | – | – | x |
| Poland | 1931 | x | – | x | – | x | – |
| Portugal | 1940 | x | x | x | x | x | – |
| Romania | 1930 | x | – | x | – | x | – |
| Spain | 1940 | .. | x | .. | .. | .. | .. |
| Sweden | 1945 | x | ..[8] | x | .. | x | ..[8] |

[1] These data were not shown for the Bantu population.

[2] The only classification found pertaining to economic activities was one which divided the population into three groups: (1) professionals; (2) non-professional workers; and (3) family members.

[3] Occupational status was shown only for the industry group "agriculture, animal husbandry and fishing" and for the total active population.

[4] The classification presented was a hybrid one, in part occupational and in part industrial. The occupational grouping appears to have predominated.

[5] Occupational status was shown only for certain segments of the economically active population.

[6] Within the various branches of economic activities, heads of enterprises and higher employees were distinguished from subordinate personnel. A uniform classification was not applied to all branches of activity.

[7] Within each industry category, persons whose individual occupations differed from the major work of the establishment (e.g. clerical or service personnel in manufacturing industries) were classified separately by their occupations.

[8] The available census publications show data for some selected occupations, but do not include all of the economically active population.

## Table 30. Tabulations of industry, occupation and occupational status of the economically active population in recent censuses (cont.)

("x" indicates that the specified classification was presented; "–", that it was not presented; ".." that information on the tabulations was not available or was not complete)

| Country | Census year | Industry | Occupation | Occupational status | Industry by occupation | Industry by occupational status | Occupation by occupational status |
|---|---|---|---|---|---|---|---|
| Switzerland | 1941 | x | x | x | x | x | x |
| United Kingdom | | | | | | | |
| England and Wales | 1931 | x | x | x | x | x | x |
| Northern Ireland | 1937 | – | – | – | – | – | – |
| Scotland | 1931 | x | x | x | x | x | x |
| USSR | 1939 | .. | ..[9] | .. | .. | .. | .. |
| Yugoslavia | 1931 | x[10] | –[10] | x | – | x | – |
| OCEANIA: | | | | | | | |
| Australia | 1933 | x | x | x | x | x | – |
| New Zealand | 1936 | x | x | x | – | x | x |

[9] The available tabulations show only the number of workers in a small number of selected occupations.

[10] The classification presented was a hybrid one, based in part on industry and in part on occupation.

the occupational classification as a means of describing the types of work done by members of the labour force, analysing their skills and indicating their social and economic status. This cross-classification, which was tabulated in nineteen of the censuses, was mentioned by the Population Commission as a desirable one.

In some cases, the classifications by occupational status, tabulated in relation to occupation and industry have varied from one occupational or industrial group to another, so that comparisons on a uniform basis could not be made. This practice severely limits the value of the tabulations for the purposes mentioned above.

# XII. EMPLOYMENT AND UNEMPLOYMENT

*(prepared by the Population Division of the United Nations in collaboration with the International Labour Office)*

The problems of defining and enumerating the employed and unemployed segments of the economically active population are discussed in chapter X in connexion with the definition and enumeration of the economically active population itself. The discussion here is therefore limited to the tabulations of results.

## A. Tabulations on employment and unemployment recommended by international organizations

The League of Nations Committee of Statistical Experts did not include data on employment and unemployment among the types of data on economic activities which it recommended as an international standard for population censuses. Statistics on this subject were also excluded from the list of topics recommended by the Population Commission at its third session for investigation in population censuses, and from the minimum list of topics adopted by the Committee on the 1950 Census of the Americas at its second session.

The Sixth International Conference of Labour Statisticians, on the other hand, regarded employment and unemployment data as essential to statistics of the "labour force" whether obtained from population censuses or from other sources. All its recommendations regarding tabulations of data on the "labour force" applied as well to the employed and unemployed segments. In addition to classifications by age, marital status, etc. to be discussed in chapter XIII, the Conference recommended that these data be made available "for the principal regions and chief centres of population; . . . for occupation groups; by industrial status [i.e., occupational status]; for the branches of economic activity specified in the international standard classification of industries".[1]

The Population Commission at its fourth session also made some suggestions regarding the tabulations of data on employment and unemployment in censuses where such data were to be obtained, though it had not included such data in its recommended list of the most important topics. The report of the fourth session included the following paragraph on this subject.[2]

"Where separate data for employed and unemployed workers or measures of the extent of employment or unemployment during a given period are obtained in the census, such data should be classified by: (i) industry, (ii) occupation, and (iii) age. All such tabulations should be made by sex. In many censuses such tabulations have been limited to persons classified as employees; where that is not done it is desirable, for the sake of international comparability, that the tabulations be made separately for employees (that is, wage or salary workers) and other members of the economically active population."

The Committee on the 1950 Census of the Americas, at its second session, referred to its Co-ordinating Board for further study, the question of tabulations of employment and unemployment data.

## B. Tabulations of employment and unemployment data in recent censuses

Of the fifty-three census reports examined, twenty-two showed either a subdivision of the economically active population into employed and unemployed components or at least a separate tabulation of unemployed workers (see table 31). In twelve of these censuses the data on employment and unemployment were classified either by industry or by occupation; eight censuses showed both classifications. In some cases the degree of detail provided in the industry and occupation classifications of the unemployed was not so great as for employed persons. In four censuses, the unemployed were tabulated by occupational status; in three others, the data for the unemployed were confined to employees. In three censuses, data

[1] International Labour Office, *International Standards for Statistics of Employment, Unemployment and the Labour Force . . . (op. cit.)*, p. 10.

[2] *Report of the fourth session of the Population Commission (op. cit.)*, p. 38.

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[1] International Labour Office, *International Standards for Statistics of Employment, Unemployment and the Labour Force . . . (op. cit.)*, p. 10.

[2] *Report of the fourth session of the Population Commission (op. cit.)*, p. 38.

## Table 31. Tabulations of employment and unemployment data in recent censuses

(This table is limited to those censuses for which some tabulations distinguishing the employed and the unemployed were available. "x" indicates that the specified type of data was shown either for the employed and unemployed or for the total economically active population and the employed or the unemployed; "–", that it was not so presented)

| Country | Census year | Totals | Industry | Occupation | Occupational status |
|---|---|---|---|---|---|
| AFRICA: | | | | | |
| Egypt | 1937 | x | x | – | – |
| Union of South Africa | 1936 | x[1] | – | x[1] | – |
| AMERICA: | | | | | |
| Canada | 1941 | x[2] | x[2] | x[2] | x[2] |
| Chile | 1940 | x | x | – | – |
| Colombia | 1938 | x | – | – | – |
| Cuba | 1943 | x | x | x | – |
| Mexico | 1940 | x[3] | x[3] | – | – |
| Panama | 1940 | x | – | – | – |
| Peru | 1940 | x | x | – | – |
| United States of America | 1940 | x | x | x | x |
| ASIA: | | | | | |
| Japan | 1940 | x | x | – | – |
| Philippines | 1939 | x | –[4] | x[4] | –[5] |
| EUROPE: | | | | | |
| Austria | 1934 | x | x | x | x |
| Czechoslovakia | 1930 | x | – | x | x |
| Ireland | 1936 | x | x | x | x[6] |
| Poland | 1931 | x | x | – | x[6] |
| Portugal | 1940 | x | x | x | – |
| Switzerland | 1941 | x | – | x | x |
| United Kingdom | | | | | |
| England and Wales | 1931 | x | x | x | – |
| Scotland | 1931 | x | – | x | – |
| OCEANIA: | | | | | |
| Australia | 1933 | x | x | x | – |
| New Zealand | 1936 | x | – | x | – |

[1] These data were not tabulated for the Bantu population.

[2] Employment and unemployment data were shown for employees only.

[3] The tabulation showed persons unemployed for one month or more at the time of the census.

[4] The classification was a hybrid one, in part occupational and in part industrial.

[5] Occupational status was shown only for certain segments of the economically active population.

[6] The unemployed were defined so as to include only employees.

for the unemployed were tabulated without any classifications by industry, occupation or occupational status.

Census questions on industry, occupation and occupational status as applied to the unemployed sometimes refer to the situation in their last previous employment. This practice gives rise to certain difficulties, since in some cases unemployed persons may accept, in an emergency, temporary jobs in an industry or occupation which is far different from their usual one and for which they are not especially qualified. For this reason instructions to enumerators or respondents used in some censuses have specified that the industry in which the unemployed person is usually engaged should be reported.

To one group of the unemployed, namely, those who are looking for work but who have never previously been employed, the classifications by industry, occupation and occupational status are inapplicable. As already stated, in censuses where the economically active population has been defined in accordance with the "gainful worker" concept, such persons have commonly been excluded from the statistics for the unemployed and for the total economically active. However, the Sixth International Conference of Labour Statisticians, the Population Commission, and the Committee on the 1950 Census of the Americas all recommended that they be included. The Population Commission recommended that, in tabulations by industry, occupation and occupational status of the economically active population these persons be shown as a separate category not subdivided by these classifications. So far as the classification by industry is concerned, this procedure is in accordance with the Standard Industrial Classification adopted by the Statistical Commission and the Economic and Social Council.

Additional classifications relevant to employment and unemployment, which have been pre-

sented in the reports of some population censuses, may be briefly noted. In a number of cases a classification of the unemployed according to the duration of unemployment has been tabulated, for example, in the censuses of New Zealand (1936), Australia (1933), Ireland (1936) and the United States (1940). In a few censuses the unemployed have been classified by cause of unemployment, specifying, for example, scarcity of work, accident or illness, industrial disputes, temporary lay-off. Such classifications have appeared in the reports of the censuses of Canada (1941), Australia (1933) and New Zealand (1936), among others. The New Zealand census report also included a classification showing whether or not the unemployed person was registered at a government employment bureau.

Measures of employment and unemployment other than the subdivision of the active population into the groups employed and unemployed at the time of the enumeration have been shown in the reports of some censuses. Tabulations of the active population by number of weeks or months of employment during a specified year are found in the census reports of Canada (1941) and the United States (1940). These data reflect both the incidence of unemployment among persons who are available for work throughout the year, and the extent of seasonal or other types of part-year participation in gainful activities. In the census of the United States (1940), data on hours of work during the week preceding the census date were tabulated for the employed, thus providing a measure of part-time employment.

# XIII. DEMOGRAPHIC CHARACTERISTICS OF THE ECONOMICALLY ACTIVE AND INACTIVE POPULATION

*(prepared by the Population Division of the United Nations in collaboration with the International Labour Office)*

## A. Principal types of tabulations on demographic characteristics

The population census as a source of information on the economic activities of the people has the advantage of providing data on a large number of characteristics of the workers which cannot easily be obtained from other sources of statistics on employment, unemployment, occupations, etc. Tabulations of the economically active population classified by sex, age, marital and dependency status, and other characteristics, together with corresponding tabulations for the population as a whole, provide valuable information on the factors affecting labour supply and productivity, on dependency problems, and on the distribution of manpower resources among various types of economic and non-economic activities. The tabulations on these subjects have been recommended by international agencies and those which have been made in recent censuses are discussed here.

Table 32 shows the principal characteristics of the active population (other than occupation, industry, occupational status, and employment and unemployment) shown in the publications of recent censuses.

## B. Sex and age of the economically active

### 1. Tabulations recommended by international bodies

The League of Nations Committee of Statistical Experts, in 1938, recommended that both the tabulations of statistics of the economically active population by industry and those by occupational status should be made for each sex by age groups. The Committee also indicated that certain groups of the population not economically active should be tabulated by sex and age. The age grouping recommended by the Committee was: under 15 years, 15-19, 20-64, and 65 years and over. However, it was recommended that the group 20-64 years be divided if possible into 20-44 and 45-64 years, and preferably subdivided into five-year or ten-year groups.[1]

The Sixth International Conference of Labour Statisticians, in 1947, recommended that statistics on the economically active population, employment and unemployment be made available by age groups, but did not specify the age groups to be tabulated.[2]

The Population Commission at its fourth session (April 1949) suggested that the economically active and inactive population should be tabulated, for each sex, by at least the following age groups: under 15 years (if any persons under that age were included in the enumeration of the economically active population), 15-19, 20-24, ten-year groups from 25 to 64, 65 years and over. It will be observed that these age groups are parallel to those previously recommended by the League of Nations Committee. The Commission also suggested that, where more detailed tabulations could be undertaken, the following be made: (*a*) the division of the inactive population in each sex-age group into students; persons doing housework at home; inmates of penal, mental and charitable institutions; and others; and (*b*) the classifications of economically active population by occupational status, by industry and by occupation, each tabulated by the age groups specified above, by sex. Where data on employment and unemployment were to be obtained in the census, the Commission recommended that these also be tabulated by sex and age groups.[3]

The Committee on the 1950 Census of the Americas at its second session (February 1949) recommended a tabulation of the economically

[1] League of Nations. *Statistics of the gainfully occupied population . . . (op. cit.)*, p. 10.

[2] International Labour Office. *International standards for statistics of employment, unemployment and the labour force . . . (op. cit.)*, p. 10.

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[3] *Report of the fourth session of the Population Commission (op. cit.)*, pp. 33-35, 38.

## Table 32. Types of cross-tabulations presented with data on the economically active population in recent censuses

("x" indicates that the given characteristic was tabulated at least for the active population as a whole; "–" that it was not tabulated; ". ." that information on the tabulations was not available or was not complete)

| Country | Census year | Sex | Age by sex | Marital status by sex | Marital status by age and sex | Birthplace | Legal nationality | Literacy or educational level |
|---|---|---|---|---|---|---|---|---|
| AFRICA: | | | | | | | | |
| Egypt | 1937 | x | x | – | – | – | x | x |
| Union of South Africa | 1936 | x | x[1] | –[2] | – | – | – | – |
| AMERICA: | | | | | | | | |
| Argentina | 1947 | .. | .. | .. | .. | .. | .. | .. |
| Brazil | 1940 | x | x | .. | .. | .. | .. | .. |
| Canada | 1941 | x | x | x | x | x | – | – |
| Chile | 1940 | x | x | .. | .. | .. | .. | .. |
| Colombia | 1938 | x | – | – | – | – | x | – |
| Costa Rica | 1927 | .. | .. | .. | .. | .. | .. | .. |
| Cuba | 1943 | x | x[3] | – | – | – | x | – |
| Dominican Republic | 1935 | x[4] | .. | .. | .. | .. | x[4] | .. |
| El Salvador | 1930 | x | – | – | – | – | – | – |
| Guatemala | 1940 | x | – | – | – | – | – | – |
| Honduras | 1945 | x | – | – | – | – | – | – |
| Mexico | 1940 | x | – | – | – | – | x | – |
| Nicaragua | 1940 | x | .. | .. | .. | .. | .. | .. |
| Panama | 1940 | x | x | – | – | x | x | – |
| Paraguay | 1936 | .. | .. | .. | .. | .. | .. | .. |
| Peru | 1940 | x | x | – | – | – | x | – |
| United States of America | 1940 | x | x | x | x | x | x[5] | x |
| Venezuela | 1941 | x | – | – | – | – | x | – |
| ASIA: | | | | | | | | |
| India | 1931 | x | – | – | – | – | – | – |
| Japan | 1940 | x | x | x | x | .. | .. | .. |
| Philippines | 1939 | x | x | – | – | – | x | x |
| Syria | 1947 | .. | .. | .. | .. | .. | .. | .. |
| Turkey | 1935 | x | x | – | – | – | x | – |
| EUROPE: | | | | | | | | |
| Austria | 1934 | x | x | x | – | – | – | – |
| Belgium | 1930 | x | x | x | x | – | x | – |
| Bulgaria | 1934 | x | x | x | – | – | – | x |
| Czechoslovakia | 1930 | x | x | x | x | .. | x | .. |
| Denmark | 1940 | x | x | x[6] | x[6] | – | – | – |
| Finland | 1940 | x | – | – | – | – | – | – |
| France | 1946 | x | .. | .. | .. | .. | .. | .. |
| Germany | 1939 | x | x | x | x | .. | x | .. |
| Greece | 1940 | .. | .. | .. | .. | .. | .. | .. |
| Hungary | 1941 | x | .. | .. | .. | .. | .. | .. |
| Ireland | 1936 | x | x | x | x | x | – | – |
| Italy | 1936 | x | x | x | – | – | x[7] | – |
| Luxembourg | 1935 | x | – | – | – | – | x | – |
| Netherlands | 1930 | x | x | x | – | – | x | x[8] |
| Norway | 1930 | x | x | x | x | – | x | – |
| Poland | 1931 | x | x | x[9] | – | – | – | – |
| Portugal | 1940 | x | x | – | – | – | x | x |
| Romania | 1930 | x | x | – | – | – | – | x |
| Spain | 1940 | x | .. | .. | .. | .. | x | .. |
| Sweden | 1945 | x | x | x | x | – | .. | – |
| Switzerland | 1941 | x | x | x | x | – | x | – |
| United Kingdom | | | | | | | | |
| England and Wales | 1931 | x | x | x | – | – | – | – |
| Northern Ireland | 1937 | – | – | – | – | – | – | – |
| Scotland | 1931 | x | x | x | – | – | x | – |
| USSR | 1939 | .. | .. | .. | .. | .. | .. | .. |
| Yugoslavia | 1931 | x | .. | .. | .. | .. | .. | .. |
| OCEANIA: | | | | | | | | |
| Australia | 1933 | x | x | x | x | x | – | – |
| New Zealand | 1936 | x | x | x | – | x | – | – |

[1] These data were not shown for the Bantu population.

[2] Data on marital status of the economically active population were shown for principal towns only.

[3] Data were given by age and by sex, but age and sex were not cross-classified.

[4] The population was classified into three groups: (1) professionals; (2) non-professional workers, and (3) family members.

[5] These data were shown for the white population only.

[6] Data on marital status were presented for females only.

[7] These data were shown only for aliens residing in the country.

[8] This tabulation referred to university graduates by industry.

[9] Marital status was shown for females active in non-agricultural industries and for female employees in agriculture.

active and the inactive population, by sex, for the age groups 15-19, 20-24, ten-year groups from 25 to 74, 75 years and over. The Committee recommended that "those countries which for national purposes investigate the gainfully occupied population under 15 years of age should tabulate this group separately".[4] These recommendations agree almost exactly with the suggestions of the Population Commission.

2. Tabulations made in recent censuses

In all of the censuses for which tabulations of the economically active population were available, the totals at least were presented for males and females separately. Most of the other classifications of the economically active population were likewise shown by sex. A sex classification is, of course, essential for most types of analyses of statistics on economic activities.

A classification of the economically active population by age groups was tabulated in thirty-one of the fifty-three censuses studied (see table 32). The amount of detail in the age classification ranged from five groups (under 13, 13-20, 21-40, 41-64, 65 and over) in the 1930 census of Romania to a tabulation by single years in the 1940 census of Japan and by single years from 14 to 74 years of age in the 1940 census of the United States. In nearly all cases the age classification was shown separately for males and females (see table 33).

(*a*) *Minimum age.* The tabulations relating to economic activities in many censuses were restricted to the population over a given minimum age. The minimum differed from census to census, being chosen in the light of customs in each country, and of the legal age limits for employment and compulsory school attendance. As shown in table 33, in those countries where the tabulations were restricted to the population over a given minimum age, the most common limits were fourteen years and ten years. In a few censuses higher or lower minimum ages were used; for example, five years in Egypt (1937), and fifteen years in Norway (1930) and the Union of South Africa (1936). In a great many censuses, however, no minimum was set.

Variations in the minimum age would not impair international comparability if, in those censuses where a low minimum or no minimum age was specified, tabulations by age groups were provided in such form that the children below the minimum age most commonly specified in other censuses could be identified separately. In some cases, however, this has not been done. Among the fifty-three censuses studied were nine in which the age grouping shown in published tabulations did not provide data for the economically active population fifteen years old and over which would agree with proposals of the Population Commission and other international bodies. The closest approximations to the group fifteen and over that could be obtained from these censuses were:

Brazil, 1940: 10 and over or 20 and over.
Cuba, 1943: 13 and over.
Austria, 1934: 16 and over.
Germany, 1939: 14 and over or 16 and over.
Ireland, 1936: 14 and over or 16 and over.
Netherlands, 1930: 14 and over.
Romania, 1930: 13 and over.
Switzerland, 1941: 17 and over.
New Zealand, 1936: 14 and over or 16 and over.

(*b*) *Age groupings.* The age groups used for classifications of the economically active population in various censuses have been so diverse that no uniform classification, even by very broad age groups, could be obtained for nearly all countries.

The groupings recommended by the Population Commission (15-19, 20-24, 25-34, 35-44, 45-54, 55-64, 65 and over) could be derived from the classifications shown in nine of the fifty-three censuses studied. Four of these censuses (Japan 1940, Sweden 1945, the Union of South Africa 1936 and the United States 1940) also gave the subdivision of the group 65 and over into 65-74, 75 and over, recommended by the Committee on the 1950 Census of the Americas. In eight more censuses, the classification proposed by the Population Commission could be derived for the age groups above 25 years, but the groups 15-19 and 20-24 could not be obtained, usually because the age 20 years was combined with the ages just younger (18-20, etc.) or because the age 15 was combined with age 14.

Combinations of the age groups recommended by the Population Commission into broader categories would increase only slightly the number of countries for which the resulting classification could be obtained. In addition to the censuses mentioned above, there was only one for which the categories 25-44, 45-64, and 65 and over could be obtained (Denmark 1940). The groups 20-44, 45-64, and 65 and over could be obtained for Peru (1940).

[4] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . .* (*op. cit.*), p. 30.

## Table 33. Age classifications used in tabulations of data on the economically active population by age and sex in recent censuses

(This table is limited to censuses for which some tabulations on the economically active population by age were available. The age classifications shown are the most detailed classifications of the active population by age presented in each census. "–" indicates that the given type of classification was not shown)

| Country | Census year | Minimum age (years) | Age range covered in classifications by: 5-year groups | 10-year (but not 5-year) groups | Other age groups tabulated |
|---|---|---|---|---|---|
| AFRICA: | | | | | |
| Egypt | 1937 | 5 | 5 to 29 | 30 to 59 | 60 and over |
| Union of South Africa[1] | 1936 | 15 | 15 to 74 | – | Single years, 15-20, 21-24, 75 and over |
| AMERICA: | | | | | |
| Brazil | 1940 | 10 | – | 10 to 79 | 80 and over |
| Canada | 1941 | 14 | 15 to 24, 55 to 69 | 25 to 54 | 14, 15, 16-17, 18-19, 70 and over |
| Chile | 1940 | 0 | 15 – 19 | 20 to 59 | 0-14, 60 and over |
| Cuba[2] | 1943 | 13 | – | 20 to 59 | 13-19, 60 and over |
| Panama | 1940 | 10 | 10 to 39 | 40 to 69 | 70 and over |
| Peru | 1940 | 6 | 15 to 19 | 20 - 29 | 6-14, 30-44, 45-64, 65 and over |
| United States of America | 1940 | 14 | 15 to 74 | – | Single years 14-74, 75 and over |
| ASIA: | | | | | |
| Japan | 1940 | 0 | 0 to 19 | – | Single years, 0-120 |
| Philippines | 1939 | 10 | 10 to 24 | 25 to 64 | 65 and over |
| Turkey | 1935 | 0 | – | 15 to 74 | 0-14, 75 and over |
| EUROPE: | | | | | |
| Austria | 1934 | 0 | 20 to 29, 60 to 69 | 30 to 59 | 0-15, 16-17, 18-19, 70 and over |
| Belgium | 1930 | 0 | 55 to 64 | – | 0-14, 15-20, 21-54, 65 and over |
| Bulgaria | 1934 | 0 | 15 to 69 | – | 0-14, 15-16, 17-19, 70 and over |
| Czechoslovakia | 1930 | 0 | 15 to 64 | – | 0-14, 65-79, 80 and over |
| Denmark | 1940 | 0 | 15 to 24, 60 to 64 | 25 to 44 | 0-14, 15-17, 18-19, 45-59, 65 and over |
| Germany | 1939 | 0 | 20 to 64 | – | 0-13, 14-15, 16-17, 18-19, 65 and over |
| Ireland | 1936 | 14 | 20 to 34, 55 to 69 | 35 to 54 | 14-15, 16-17, 18-19, 70 and over |
| Italy | 1936 | 10 | 10 – 14 | 15 to 64 | 15-17, 18-20, 21-24, 65 and over |
| Netherlands | 1930 | 0 | 20 to 29, 60 to 69 | 30 to 59 | 0-13, 14-17, 18-19, 20, 21-24, 70 and over |
| Norway | 1930 | 15 | 21 to 30 | 31 to 70 | 15-17, 18-20, 71 and over |
| Poland | 1931 | 0 | – | 22 to 61 | 0-14, 15-17, 18-21, 22-24, 25-31, 62 and over |
| Portugal | 1940 | 10 | 10 to 19 | 20 to 59 | 60 and over |
| Romania | 1930 | 0 | – | – | 0-12, 13-20, 21-40, 41-64, 65 and over |
| Sweden | 1945 | 0 | 0 to 79 | – | 80 and over |
| Switzerland | 1941 | 0 | 20 to 29, 60 to 69 | 30 to 59 | 0-16, 17-19, 70 and over |
| United Kingdom | | | | | |
| England and Wales | 1931 | 14 | 25 to 34, 55 to 74 | 35 to 54 | 14-15, 16-17, 18-20, 21-24, 75 and over |
| Scotland | 1931 | 14 | 25 to 34, 55 to 69 | 35 to 54 | 14-15, 16-17, 18-20, 21-24, 70 and over |
| OCEANIA: | | | | | |
| Australia | 1933 | 10 | 10 to 69 | – | 70 and over |
| New Zealand | 1936 | 0 | 20 to 64 | – | 0-13, 14-15, 16-19, 20, 21-24, 65 and over |

[1] These data were not shown for the Bantu population.

[2] Data were given by age and by sex, but age and sex were not cross-classified.

In those censuses where neither the age classification suggested by the Population Commission nor a condensation of it could be derived, the most general reason for the difficulty was the presentation of data in ten-year age groups beginning with ages that end in zero (30-39, 40-49, etc.) rather than with ages that end in five (25-34, 35-44, etc.). This system of age grouping was used, throughout a major part of the classification of the active population by age, in the censuses of Austria (1934), Brazil (1940), Chile (1940), Cuba (1943), Egypt (1937), the Netherlands (1930), Panama (1940), Portugal (1940) and Switzerland (1941). The considerations involved

## Table 34. Tabulations of industry, occupation and occupational status by age and sex in recent censuses

(This table is limited to censuses for which some tabulations on the economically active population by age groups were available. "x" indicates that the specified classification was presented by age and sex; "–" that it was not so presented; ".." that information on the tabulations was not complete)

| *Country* | *Census year* | *Industry* | *Occupation* | *Occupational status* |
|---|---|---|---|---|
| AFRICA: | | | | |
| Egypt | 1937 | x | – | – |
| Union of South Africa | 1936 | – | x[1] | – |
| AMERICA: | | | | |
| Brazil | 1940 | x | – | – |
| Canada | 1941 | x | x | x |
| Chile | 1940 | x | .. | x |
| Cuba | 1943 | x[2] | x[2] | – |
| Panama[3] | 1940 | – | – | – |
| Peru | 1940 | x | – | – |
| United States of America | 1940 | x | x | x |
| ASIA: | | | | |
| Japan | 1940 | x | – | x |
| Philippines | 1939 | – | x[4] | –[5] |
| Turkey | 1935 | – | x | – |
| EUROPE: | | | | |
| Austria | 1934 | – | x | x |
| Belgium | 1930 | – | x | x |
| Bulgaria | 1934 | – | x | x |
| Czechoslovakia | 1930 | – | x | x |
| Denmark | 1940 | x | x[2] | x |
| Germany | 1939 | x | .. | x |
| Ireland | 1936 | x | x | x |
| Italy | 1936 | x | x | x[2] |
| Netherlands | 1930 | x[6] | x[7] | x |
| Norway | 1930 | – | x | x |
| Poland | 1931 | x | – | x |
| Portugal | 1940 | x | x | x |
| Romania | 1930 | x | – | – |
| Sweden | 1945 | x | – | x |
| Switzerland | 1941 | x | x | x |
| United Kingdom | | | | |
| England and Wales | 1931 | x[2] | x | x |
| Scotland | 1931 | x | x | x |
| OCEANIA: | | | | |
| Australia | 1933 | x | x | x |
| New Zealand | 1936 | x | x | x |

[1] These data were not shown for the "native" (Bantu) population.

[2] Data were given by age and by sex, but age and sex were not cross-classified.

[3] Age was shown only for the total economically active population.

[4] The classification was a hybrid one, in part occupational and in part industrial.

[5] Occupational status was shown only for certain segments of the economically active population.

[6] The tabulation cross-classifying industry and age referred only to workers in three of the four major occupational status groups: heads of enterprises—owners; heads of enterprises—working for a company; and foremen and managers.

[7] The tabulation cross-classifying detailed occupation groups and age referred to workers in only one occupational status group: "ordinary workers".

than in the case of the age tabulations for the active population as a whole.

## C. Marital status of the economically active

### 1. IMPORTANCE OF THE CLASSIFICATION

A classification of the economically active population by marital status, for each sex, is valuable for three major purposes. First, it serves as an indication of the responsibilities of workers for the support of dependants. Most of the married men who are economically active, for example, may be presumed to have dependants; most of the married women are themselves dependants in the sense that they have a claim to be supported by their husbands; most of the employed single persons are independent and without dependants. Second, the marital status classification of the active population, when related to the corresponding classification of the whole population, pro-

vides materials for analysing the influence of marriage customs, widowhood, etc. upon the labour supply. An analysis by marital status of the female active population is particularly essential for an adequate understanding of the factors affecting the employment of women. Third, the data on economic activities of married women are valuable for the study of those social problems which are associated with the participation of this group in gainful occupations. For all of these purposes, classifications of marital status by age are especially desirable. It is useful to have such tabulations not only for the active population as a whole, but also for the classifications by occupation, industry and occupational status.

### 2. Tabulations recommended by international bodies

The League of Nations Committee of Statistical Experts gave the classification by marital status nearly as prominent a place as that by age, in its recommendations regarding tabulations of data on the economically active population. The Committee recommended that "for each chapter of the classification by branches of economic activity, and for each group of the classification by personal status [i.e. occupational status], the gainfully occupied population should be subdivided first of all by sex. The data for each sex should then be subdivided according to age and marital status".[5] The marital status categories to be presented were not specified.

The Sixth International Conference of Labour Statisticians recommended that statistics on the active population, employment and unemployment should be made available for each sex by marital status, but did not mention cross-classifications by age, or by occupation, industry and occupational status.[6]

The Population Commission indicated that the classification of the economically active population by marital status was, in its view, less important than that by age. However, the Commission suggested that, where feasible, it would be desirable to present a classification by marital status of the active and of the inactive population of each sex, in each age group.[7]

[5] League of Nations. *Statistics of the gainfully occupied population . . . (op. cit.)*, p. 19.

[6] International Labour Office. *International standards for statistics of employment, unemployment and the labour force . . . (op. cit.)*, p. 10.

[7] *Report of the fourth session of the Population Commission (op. cit.)*, p. 34.

Marital status of the economically active population was not mentioned by the Committee on the 1950 Census of the Americas in the preliminary minimum list of tabulations adopted at its second session.

### 3. Tabulations shown in recent census reports

Tabulations of data on the economically active population by marital status were presented in the reports of twenty of the fifty-three censuses examined (see table 32). Classifications of marital status by industry were shown, for example, in the censuses of Bulgaria (1934), Denmark (1940 — for females only), Italy (1936), Japan (1940), Poland (1931), Sweden (1945) and Switzerland (1941), and by occupation in the censuses of Austria (1934), Belgium (1930), England and Wales and Scotland (1931), New Zealand (1936), Norway (1930) and the United States (1940). Marital status was tabulated by both industry and occupation in the censuses of Australia (1933), Canada (1941), Ireland (1936) and the Netherlands (1930).

In nearly all cases the marital status classification was shown for each sex. In more than half of the twenty censuses where the data were presented by marital status, they were cross-classified by age as well as by sex. Without the classification by age, the value of such tabulations for analysing the dependency status of workers and the relationships between labour supply and marriage, widowhood and divorce is greatly limited. The age classifications shown in combination with marital status of the active population were commonly less detailed than those presented without the cross-classifications by marital status. Consequently the possibilities of internal comparisons in this field were very narrow.

## D. Household relationships of unpaid family workers

The League of Nations Committee of Statistical Experts recommended a tabulation showing the position in the household of persons reported as unpaid family workers and of persons reported as not economically active.[8] This tabulation was intended to provide a better basis for comparisons of total figures on the economically active population in censuses where different practices were followed with reference to the inclusion or exclu-

[8] League of Nations. *Statistics of the gainfully occupied population . . . (op. cit.)*, pp. 10, 19.

sion of persons assisting without pay in family enterprises. For this purpose the Committee recommended that the gainfully occupied population be tabulated in the following groups:

"(1) All persons gainfully occupied . . . with the exception of those specified in group 2 below.

"(2) Members of families,[9] whatever their degree of relationship, aiding the heads of their families in their occupations, showing separately:

"(*a*) Wives of farmers;

"(*b*) Wives of persons other than farmers;

"(*c*) Other members of farmers' families;

"(*d*) Other members of families of persons other than farmers."

and that the population not reported as gainfully occupied be classified as follows:

"(1) Members of families of working age, capable of work and not attending school, distinguishing:

"(*a*) Wives of farmers;

"(*b*) Wives of persons other than farmers;

"(*c*) Other members of farmers' families;

"(*d*) Other members of families of persons other than farmers.

"(2) All other persons . . ."

The Population Commission, at its fourth session, made a similar suggestion. The Commission stated:[10]

"It is important for evaluating the data on economically active population in each country, as well as for international comparisons, to make tabulations showing to what extent members of the households of farmers (that is, operators of agricultural enterprises) are included in the economically active population as unpaid family workers. For this purpose wherever feasible, a tabulation should be made showing the numbers of (1) wives of farmers, (2) male members of farmers' households (other than farmers), and (3) female members of such households (other than the wives of farmers), in the range of ages covered by the statistics for the economically active population, indicating how many of each group are classified as: (1) unpaid family workers in agriculture, (2) employees (i.e. wage or salary workers) in agriculture, (3) employers and own-account workers in agriculture, (4) economically active in non-agricultural industries, and (5) persons not economically active".

So far as is known neither the tabulation recommended by the League of Nations Committee nor that proposed by the Population Commission has been made in any census. Such tabulations would contribute greatly to existing knowledge regarding the meaning and international comparability of census data on the economically active population, and would provide a much better basis for international comparisons.

## E. Other characteristics of the economically active

No attempt is made here to give an exhaustive list of all types of cross-classifications of data on economic activities with other population characteristics found in the census reports of different countries. Table 32 shows, however, some of the characteristics, in addition to sex, age and marital status, that have most often been tabulated for the active population.

Classifications by birthplace (the distinction between natives and foreign-born persons, a classification of the foreign-born by country of birth, or a classification of natives by locality of birth within the country) were shown for the economically active population in the censuses of Australia (1933), Canada (1941), Ireland (1936), New Zealand (1936), Panama (1940) and the United States (1940). A cross-tabulation with data on nationality (i.e., either a distinction between nationals and aliens, or a tabulation by country of nationality) has been shown more frequently, in twenty-two censuses. A tabulation by literacy or level of education was shown in some censuses, for example, Bulgaria (1934), Egypt (1937), the Philippines (1939), Portugal (1940), Romania (1930) and the United States (1940). Classifications of the active population by religion were found in a few censuses, including those of Australia (1933), Czechoslovakia (1930) and Ireland (1936). Classifications by race or ethnic nationality were found in a considerable number of censuses, including those of Australia (1933), Canada (1941), Cuba (1943), Czechoslovakia (1930), New Zealand (1936), Panama (1940), Romania (1930) and the United States (1940). In some cases (e.g. the United States) a classification by race was included in most of the tabulations on other characteristics of the active population.

[9] It is unclear whether the Committee intended to limit "members of families" to persons related by kinship to the heads of their households, or whether it was intended to included lodgers and other non-relatives in the households.

[10] *Report of the fourth session of the Population Commission (op. cit.),* pp. 37-38.

## F. Characteristics of the inactive population

This section deals with tabulations of various categories of population not economically active, such as students, housewives and institutional inmates, and with the classifications by characteristics of these groups that have been shown in the reports of recent population censuses. Tabulations relating to characteristics of the inactive population as a whole, without subdivisions such as these, are not discussed here, because they are, in effect, covered by the preceding discussion. Wherever a classification by sex, age, marital status or other characteristics is tabulated both for the economically active and for the total population, it is obviously possible to derive the same classification by subtraction for the inactive population as a whole, even though the data for the inactive population may not be shown in the census tables.

### 1. Categories of the inactive population

The Population Commission, at its third session, recommended that data for the following categories of the population not economically active should be obtained in population censuses: "(1) persons engaged only in housework at home, without pay; (2) students not also engaged in economic activities; (3) inmates of penal, mental, and charitable institutions, even though they may work for pay within the institution; and (4) all other persons not engaged in economic activities, such as retired and disabled persons and those who derive their income from rents, royalties, dividends, etc."[11]

The subdivision of the inactive population into such categories gives a valuable supplement to the information that is provided by the tabulations on characteristics of the active population. It is useful for an analysis of the factors which determine the size of the economically active in relation to the total population since it gives a measure of the numerical importance of some of the principal circumstances which limit participation in gainful occupations. Finally, it is of substantial assistance in determining the degree of comparability of the statistics for the active population presented in the censuses of different countries. In the latter connexion, the subdivision of the inactive population is especially useful if it shows as separate categories any groups classified in a given census as not economically active, which are commonly included in the active population as defined in other countries.

In a considerable number of recent censuses, subdivisions of the inactive population closely parallel to those recommended by the Population Commission have been presented.

Students have been shown as a subdivision of the inactive population in the censuses of Colombia (1938), Panama (1940), Ireland (1936), the United States (1940), Venezuela (1941) and other countries.

Among the censuses in which housewives, or women doing housework without pay in their own homes, have been shown separately are those of the United States, 1940 (housework in own homes); Peru, 1940 (housewives); Austria, 1934 (housewives); Venezuela, 1941 (household workers without monetary income); Ireland, 1936 (home duties); New Zealand, 1936 (domestic duties); Colombia, 1938 (women in domestic occupations, except servants). The definition of this group varied in the different censuses and in some cases it was not clearly differentiated from unpaid family workers, who are included in the economically active population as defined by international bodies.

Inmates of institutions as a category of the inactive population have been variously defined; for example, inmates of penal and mental institutions and homes for the aged, infirm and needy (United States, 1940); inmates of hospitals and institutions (Venezuela, 1941); inmates of mental hospitals; inmates of hospitals or benevolent institutions (where no occupation shown); inmates of special schools, and inmates of gaols, lockups, reformatories, industrial schools (where no occupation shown) (New Zealand, 1936); inmates of poor houses and hospitals, and inmates of prisons, of houses of correction and persons in forced labour (Czechoslovakia, 1930); prisoners (Colombia, 1938; Panama, 1940; Venezuela, 1941). The problems of defining this category are discussed in chapter X.

Other groups shown as separate categories in some censuses include retired persons, pensioners, etc. in the censuses of Colombia (1938), Ireland (1936) and New Zealand (1936); *rentiers,* in the censuses of Colombia (1938), Panama (1940) and New Zealand (1936); persons unable to work, in the United States census (1940). In a number of censuses "dependants" and "children" have been shown as separate categories.

In some censuses the numbers of persons in certain of these groups have been provided by the

[11] *Report of the Population Commission* (third session) (*op. cit.*), p. 19.

tabulations, though they were not designated as categories of the inactive population. For example, in some censuses persons living on their own means, students or housewives have been shown as separate groups among the "active population".

### 2. Tabulations of the categories of inactive population by various characteristics

Cross-classifications by all the demographic characteristics mentioned above in the discussion of tabulations of the economically active population (sex, age, marital status, race, birthplace, etc.) are of value also in the tabulations of subdivisions of the inactive population. In many of the censuses where such cross-classifications were shown in the tabulations for the active population, they have been given also for the various groups of the inactive population.

A classification by sex and age of the major categories of the inactive population (students, housewives, inmates of institutions and other inactive persons) was among the tabulations listed as desirable in the report of the fourth session of the Population Commission.[12] This tabulation is especially useful in connexion with the analysis of factors limiting the size of the active population, and with studies of the degree of comparability of census statistics on economic activities for different countries. An age distribution of women in the "housewife" category, for example, furnishes information on the numbers in the most readily employable ages, and in the age groups where family responsibilities hindering the women's gainful employment are likely to be least important. Indications of differences in the situations of persons classified among the "others" not economically active, are given by an age classification. It is desirable, when analysing the potential expansion of the labour supply under emergency conditions, to consider separately certain categories of the inactive population, such as institutional inmates, within specific sex-age groups.

[12] *Report of the fourth session of the Population Commission (op. cit.)*, p. 34.

# XIV. POPULATION DEPENDENT ON AGRICULTURE AND ON VARIOUS OTHER ECONOMIC ACTIVITIES

*(prepared by the Food and Agriculture Organization and the Population Division of the United Nations)*

## A. Purposes of the data

The classifications of the economically active population discussed in the preceding chapters[1] give information on the distribution of labour resources among various types of economic activity. It is useful in addition to have information on the number of people who derive their livelihood from each type of economic activity, including dependants as well as the workers themselves. Such data can readily be obtained as a by-product of a census enumeration of the economically active population, and are valuable for a variety of economic, sociological and demographic analyses. As a means of characterizing the population of a country or area from an economic or social point of view, these data are more appropriate than statistics limited to the economically active population. The proportion of the whole population that depends on certain economic activities (e.g., agriculture) is likely to differ considerably from the proportion of the active population engaged in such activities. The difference is important, inasmuch as the economic status, living standards, customs and conditions affecting mortality, fertility, health, education, etc. of dependants are related to the economic activities of the workers who support them. The data also have certain specific uses to which statistics for the economically active population are not at all applicable; for example, they may be used to compare the average number of dependants per worker in different industries or occupations, in connexion with investigations of the adequacy of earnings.

Statistics of the population dependent on agriculture are especially valuable, not only because of the importance of agriculture as the primary source of livelihood for most of the world's peoples, but also for other reasons. The agricultural population tends to be set off more distinctly from other population groups, in its cultural traits, living standards and social institutions, than the population dependent on any other major branch of economic activity. This is so because, in most countries, the people who make their living from agriculture are, to a comparatively great extent, geographically isolated; and because the home life of a farming household is intimately connected with the operation of the farm. In fact, as pointed out in the discussion of the problem of defining unpaid family workers (chapter X, section G), it is difficult, in the case of agriculture, to make any clear distinction between the workers engaged in economic operations and their dependants. An adequate understanding of the agricultural labour supply, its current status and possible future development, of agricultural productivity, and of the possibilities for increasing the supply of agricultural commodities, therefore requires data on the whole population dependent on agriculture. These questions are of primary importance, not only to individual countries, but also to international organizations concerned with world-wide problems of agricultural production and food supply. Adequate statistics of the agricultural population on an internationally comparable basis are among the most important present statistical needs of the Food and Agriculture Organization.

[1] See chapters X to XIII.

## B. Data recommended by international agencies

The recommendations regarding the content of population censuses to be taken by various countries in or about 1950, which were adopted by the Population Commission at its third session, included the following:[2]

"Statistics on this subject [population dependent on various types of economic activity] should include the economically active population classified by industry, occupation, and industrial status and dependants classified by industry, occupation, and industrial status of the workers upon whom they depend. Classifications by industry are recommended as especially important in data of this type.

[2] *Report of the Population Commission* (third session) (*op. cit.*), p. 20.

"The data for population dependent on various types of economic activity which are discussed above . . . provide one measure of the agricultural population, namely, the total of persons engaged in agricultural occupations and their dependants. Where such data are not feasible or sufficient it is recommended that data be obtained for the population which derives its income or livelihood from agricultural work or agricultural operations. If it is not feasible to apply a definition of the agricultural population based on either source of income or occupational affiliation, data for the population residing on farms or agricultural holdings should be obtained.

"Wherever feasible it is recommended to obtain information about persons whose dependence on agricultural income or affiliation with agricultural occupations is only secondary or subsidiary."

At its fourth session, the Population Commission made the following suggestions with respect to tabulations of the agricultural population:[3]

"It is desirable that a tabulation be made showing the number of persons of each sex (including persons economically active and their dependants) who derive support from various economic activities. The tabulation should be by industrial or social status within each industry. For this tabulation persons not economically active should be allocated to the industry and the industrial or social status of the head of the household. In countries where it is desired to use other criteria for allocating dependants to various categories of industry and industrial or social status, it is desirable that a tabulation based on the category of the household head be made, for purposes of international comparison, in addition to any tabulations based on other criteria. Persons not dependent on any industry should be shown separately and divided into at least three categories:

"(i) Inmates of penal, mental, and charitable institutions;

"(ii) Household heads who are unemployed and have not previously been in work, together with their dependants;

"(iii) Other independent persons with their dependants.

"When the questions on the schedule permit it, category (iii) may be divided into (iii-a) persons living on interest, dividends and rent and (iii-b) others (i.e. pensioners, etc.).

"The tabulation recommended . . . [above] will provide totals by sex, of the population dependent on agriculture. It is also valuable to tabulate the persons of each sex dependent on agriculture by the following characteristics:

"(a) Age, in at least the groups . . . [under 5 years, 10-year groups from 5 to 64 years, 65 years and over];

"(b) Household relationships, showing: (1) heads of 'family households'; (2) relatives of heads of 'family households'; and (3) persons in 'family households' not related to the head, or in 'collective households'.

"If the tabulation . . . [of the population dependent on various types of economic activities] is not feasible, the agricultural population, defined by either the criterion of source of livelihood or that of residence on farms or agricultural holdings, may be tabulated by a classification by economic activity as follows:[4]

"(i) Economically active persons in agriculture, subdivided by industrial or social status . . .

"(ii) Economically active persons in non-agricultural industries (preferably subdivided by major industry groups);

"(iii) Persons not economically active."

The Committee on the 1950 Census of the Americas, at its second session, recommended "that all of the American nations investigate the population economically dependent upon agriculture, in accordance with the recommendations of this Committee and of the United Nations".[5] The question of types of tabulations relating to the population dependent on other economic activities was left to the Committee's Co-ordinating Board for study prior to consideration at the next session of the Committee.

## C. Varieties of data obtained in recent population censuses

Seventeen of the censuses examined for this study provided statistics on the population dependent on various types of economic activities (see table 35). In fifteen of these censuses economic activities were classified according to industry, and in six according to occupation, including four where both classifications by industry and by occupation were presented.[6] A classification

[3] *Report of the fourth session of the Population Commission, (op. cit.)*, pp. 36-37.

[4] These criteria are discussed in section E, below.

[5] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . . (op. cit.)*, p. 23.

[6] In some cases it was not clear whether the classification referred to industry or to occupation, and in one case it was evident that a hybrid classification was given. See chapter XI, section E.

## Table 35. Major varieties of data on the population dependent on agriculture and on various other types of economic activities in recent censuses

("x" indicates that the specified type of data was tabulated; "–" that it was not tabulated; ".." that information on the tabulations was not available or was not complete)

| Country | Census year | Population dependent on various types of economic activities, classified by: Industry | Occupation | Occupational status | Agricultural population only, identified by: Occupation criterion | Residence criterion |
|---|---|---|---|---|---|---|
| AFRICA: | | | | | | |
| Egypt | 1937 | – | – | – | – | – |
| Union of South Africa | 1936 | – | – | – | – | – |
| AMERICA: | | | | | | |
| Argentina | 1947 | .. | .. | .. | .. | .. |
| Brazil | 1940 | .. | .. | .. | .. | .. |
| Canada | 1941 | – | – | – | – | – |
| Chile | 1940 | x | – | – | – | – |
| Colombia | 1938 | – | – | – | – | – |
| Costa Rica | 1927 | .. | .. | .. | .. | .. |
| Cuba | 1943 | – | – | – | – | – |
| Dominican Republic | 1935 | .. | .. | .. | .. | .. |
| El Salvador | 1930 | – | – | – | – | – |
| Guatemala | 1940 | – | – | – | – | – |
| Honduras | 1945 | – | – | – | – | – |
| Mexico | 1940 | – | – | – | – | – |
| Nicaragua | 1940 | .. | .. | .. | .. | .. |
| Panama | 1940 | – | – | – | – | – |
| Paraguay | 1936 | .. | .. | .. | .. | .. |
| Peru | 1940 | – | – | – | – | – |
| United States of America | 1940 | – | – | – | – | x |
| Venezuela | 1941 | – | – | – | – | – |
| ASIA: | | | | | | |
| India | 1931 | – | – | – | – | – |
| Japan | 1940 | – | – | – | – | – |
| Philippines | 1939 | – | – | – | – | – |
| Syria | 1947 | .. | .. | .. | .. | .. |
| Turkey | 1935 | – | – | – | – | – |
| EUROPE: | | | | | | |
| Austria | 1934 | x | – | – | – | – |
| Belgium | 1930 | – | – | – | – | – |
| Bulgaria | 1934 | x | x | x | – | – |
| Czechoslovakia | 1930 | x | x | x | – | – |
| Denmark | 1940 | x | – | x | – | – |
| Finland | 1940 | x | – | x[1] | – | – |
| France | 1946 | .. | .. | .. | x | – |
| Germany | 1939 | x | .. | .. | – | – |
| Greece | 1940 | .. | .. | .. | x | – |
| Hungary | 1941 | .. | x | x | – | – |
| Ireland | 1936 | – | – | – | – | – |
| Italy | 1936 | x | x | x[2] | – | – |
| Luxembourg | 1935 | x | – | x | – | – |
| Netherlands | 1930 | – | – | – | – | – |
| Norway | 1930 | – | x | x | – | – |
| Poland | 1931 | x | – | x | – | – |
| Portugal | 1940 | x[3] | x | x[3] | – | – |
| Romania | 1930 | x | – | – | – | – |
| Spain | 1940 | .. | .. | .. | .. | .. |
| Sweden | 1945 | x | .. | x | – | – |
| Switzerland | 1941 | x | – | x | – | – |
| United Kingdom | | | | | | |
| England and Wales | 1931 | – | – | – | – | – |
| Northern Ireland | 1937 | – | – | – | – | – |
| Scotland | 1931 | – | – | – | – | – |
| USSR | 1939 | .. | .. | .. | .. | .. |
| Yugoslavia | 1931 | x[4] | –[4] | x | – | – |
| OCEANIA: | | | | | | |
| Australia | 1933 | – | – | – | – | – |
| New Zealand | 1936 | – | – | – | – | – |

[1] Within the various branches of economic activities, heads of enterprises and higher employees were distinguished from subordinate personnel.

[2] Data shown for two groups: employees and others.

[3] These data were shown for agriculture only.

[4] The classification presented was a hybrid one based in part on industry and in part on occupation.

by occupational status was given in fourteen censuses; in each of these censuses a classification by either occupation or industry was also presented. Only three censuses, those of Bulgaria (1934), Czechoslovakia (1930) and Italy (1936) gave all three classifications by industry, occupation and occupational status for all branches of economic activity, but the census of Portugal (1940) gave all three classifications for the agricultural population. In its recommendations regarding tabulations of data, the Population Commission suggested that this type of classification be shown by industry and occupational status. While all of the three classifications are desirable and cannot be regarded as acceptable alternatives, the classification by industry is especially important, particularly when shown in combination with occupational status.

Nearly all the difficulties of interpretation and international comparisons discussed in the preceding chapters with reference to statistics of the economically active population are present also in these tabulations of the population dependent on various types of economic activities. Their usefulness both for national and for international studies is affected by the definitions of the economically active population, by the types of questions asked with reference to economic activities, and by the varieties of classifications according to industry, occupation and occupational status used in tabulating the results. In addition, some special problems are involved in these tabulations, notably: (*a*) the identification of the dependants of persons engaged in each type of economic activity, and (*b*) the classification of persons not directly dependent on any economic activity, such as pensioners, *rentiers,* etc., and their dependants, and inmates of institutions. These problems are discussed in section D of the present chapter.

The tabulations in all the seventeen censuses showed separately persons dependent on agriculture, in the classification by industry, or those dependent on agricultural occupations, in the occupational classification. Thus they provided data on the agricultural population defined by what may be called, for simplicity, the "occupational" criterion (though in fact it is often based on data by industry rather than by occupation). So far as the agricultural population is concerned, the difference between a measure based on an industrial classification and one based on an occupational classification is of relatively minor importance. The persons classified under "agriculture" in a tabulation by industry are ordinarily almost the same as those classified under agricultural occupations.

In addition there was one other census, namely, the 1946 census of France, where data were presented on the agricultural population defined according to an occupational criterion, though tabulations of the population dependent on various other types of economic activities were not shown. These data, based on a tabulation of a sample of the French census returns, showed only the total population dependent on agricultural occupations (including forestry and fishing), without any classifications by characteristics. These data, represented the first attempt to obtain a count of the agricultural population in France.

In the 1940 census of the United States, no tabulations were made, either of the population dependent on agriculture or of that dependent on various other types of economic activities, but extensive tabulations were presented for the population living on farms. The farm-resident population includes some persons who have no connexion with agriculture other than the location of their residences, and excludes some who depend on agricultural occupations but who do not live on farms. In the United States, the bulk of the farm-resident population is dependent on agriculture, and vice versa, so that these data may be taken as rough measures of the agricultural population. However, these data are evidently not comparable with the statistics defined by the "occupational" criterion which were obtained in other censuses listed in table 35.

Data on the population resident on farms or agricultural holdings have been obtained more often in censuses of agriculture than in population censuses. However, for reasons to be explained in section E below, the data on this subject obtained in agricultural censuses are likely not to be comparable with those obtained in population censuses. Part E contains a discussion of the special problems of enumerating the agricultural population by either an occupational criterion or a residence criterion.

## D. Problems of defining the population dependent on each type of economic activity

### 1. The identification of dependants of economically active persons

Three different methods have been used in recent censuses of various countries to derive tabulations of the population dependent on various types of economic activities from the data on industry, occupation and occupational status of

the economically active population. (For a discussion of the classification of the active population by these characteristics, see chapter XI.) The prevailing practice has been the one suggested by the Population Commission, that is, to consider each economically active person as dependent on the industry, occupation or occupational status in which he is reported as engaged, and to regard all persons in each household who are not economically active as dependent on the household head, thus allocating them to the industry, occupation or occupational status of the head.[7] The second method, which has been used in a few censuses (for example, that of France in 1946) is to classify all household members, whether they are economically active or not, by the activity of the household head. A modification of this method was used in the census of Portugal where the population dependent on each branch of economic activity was defined as including heads of households engaged in that activity and persons "living at their expense". The chief drawback of such a classification is that it may not cover all persons living in private households. The third method (used, for example, in the census of Hungary, 1941), is to require each dependant, at the time of enumeration, to report the occupation, etc. of the person supporting him.

In some of the censuses where the first method was used, domestic servants living in the households of their employers were treated as dependants and classified by the occupation, industry or occupational status of the household head. This was done in the case of domestic servants living in the households of their employers, in the censuses of Chile (1940), Czechoslovakia (1930), Denmark (1940), Finland (1940) and Norway (1930), and perhaps also in some other censuses for which complete information is lacking. In all the censuses just mentioned, domestic servants were tabulated as a separate category of "dependants" so that the figures could be re-classified to include them, for international comparisons, in the category of economic activities appropriate to their work. According to the recommendations of international agencies, domestic servants living in the households of their employers are to be included in the economically active population.

The first two methods, while evidently arbitrary, have the advantage of simplicity. They require no special information to be obtained on the schedules, beyond the reports on occupation, industry and occupational status of economically active persons, and the information as to composition of households, which are ordinarily obtained for other purposes. The validity of the results depends largely on the proportion of cases in which two or more members of the same household are engaged in different types of economic activities. This proportion is likely to be fairly small in most areas, and in many areas it can be considered insignificant.

The validity of results is also affected somewhat by the definition of the household or "census family". If it is defined as including unrelated persons such as servants or groups of lodgers, the allocation of these persons and their dependants to the economic activity of the household head is evidently likely to introduce errors. Such errors may be reduced, at the expense of some complication in the procedures for coding and tabulating the returns, by considering as dependants of the household head only those members of the household who are related to him.

The definition of the household head is also important in this connexion. Where he is identified as the "economic head" or chief earner in the household, the assumption that other household members are his dependants is more valid than where the head is defined, for example, simply as the person whom the household members regard as the head. In the latter event, the head may himself be economically dependent on other members of the household (as in the case of an aged mother or father living with adult children) and may have either no economic activity or one which contributes only a minor share of the family income. Where the head is not defined in economic terms, results may perhaps be improved, again at some expense in terms of coding or tabulation difficulties, by such methods as treating the household members as dependants of the eldest member reported as economically active, if the head is not so reported.

As between the first two methods, under most conditions the advantage from the standpoint of accuracy seems likely to lie with the former, that is, considering only the inactive household members as dependants of the head, and classifying all economically active members as dependent on the type of activity which they report individually. This method, however, has the disadvantage of requiring the division of households in which some members are engaged in economic activities different from that of the household head. The

[7] As pointed out in chapter XIII, section F, persons who are not economically active may also be classified into various groups such as students, housewives, retired, etc., according to their individual status.

second method may be somewhat easier to apply, and may be more valid in areas where the income of secondary workers in the household is ordinarily very small, so that their support must be derived mainly from the income of the chief earner.

The third method, asking each dependant to state the occupation, etc. of the person on whom he depends has the advantage of avoiding unjustifiable assumptions, but it is exceedingly difficult and may produce biased results. In a family where there are several bread-winners, it is often practically impossible to determine in any objective way which of the dependants are supported by each earner, or to what extent some of the earners are dependent upon others. The basis of the answers in such cases may vary from one area or population group to another, introducing elements of non-comparability into the data. In any case, the question constitutes an important addition to the burden of enumeration, and adds substantially to the cost of coding and tabulating the results. Whether or not any resulting improvement in the classification will be sufficient to justify the additional cost must be determined with reference to conditions in each country.

As the Population Commission suggested, wherever a method is used other than that of allocating economically active persons to the type of activity which they report and inactive persons to the activity of the household head, it is desirable, for the sake of international comparability, that tabulations according to this method be made in addition.

### 2. The classification of persons not dependent on any economic activity

A tabulation of the economically active persons in each industry, occupation or occupational status category, together with their dependants, will not cover the entire population. The following groups will be excluded:

(*a*) Independent persons who are not economically active, such as heads of households living on pensions, rents, interest, relief or charity, etc. and their dependants;

(*b*) Persons not economically active and not members of households, such as inmates of penal, mental, charitable and religious institutions, hospitals, etc.;

(*c*) Unemployed persons seeking their first jobs, who are included in the economically active group according to the recommendations of the Population Commission and other international bodies but are not classified by industry, occupation or occupational status; together with their dependants, if any.

The Population Commission recommended that in tabulations of the population dependent on various types of economic activities, these groups should be shown as separate categories not subdivided by occupation, industry or occupational status. In general, such are the methods which have been used in most censuses. Certain alternative procedures may be followed in order to give a more nearly complete account of the economic sources from which the population draws its support. It would be desirable, for the sake of international comparability, that the classifications derived from such alternative procedures be presented in separate tabulations.

Among the persons in the first two groups listed above are many who have previously been economically active but who, at the time of the census, have retired or have been disabled. In some censuses, data on the previous economic activities of such persons have been obtained and used as a basis for classifying them and their dependants by industry, occupation and occupational status. In practically all cases, these persons and their dependants were classified separately, or their numbers could be derived from the classifications shown, so that adjustments for the purpose of international comparisons were possible. In the censuses of Poland (1931) and Romania (1930), however, this separation could not be made.

Another procedure can be followed, as already suggested, in the case of households where the head is not economically active but where one or more other household members are economically active. The heads and other inactive members of such households can be classified by the occupation, industry and occupational status of the household member who appears to be the chief earner (e.g. the eldest member reported as economically active).

In the case of unemployed persons seeking their first jobs, the method in most censuses where the "gainful worker" concept of the economically active population was used has apparently been to consider this group as not economically active. Presumably most of them were therefore classified, together with other inactive members of their households, according to the occupation, etc. of the household head. Where the recommendation of the Population Commission that they be counted as economically active is followed, it is possible to subdivide this group by industry,

occupation, etc. of the household head (with the exception of those few who may themselves be household heads). No problems of international comparisons will be created if the statistics for this category are presented separately.

## E. Special problems in defining and enumerating the agricultural population

### 1. Shortcomings of data obtained by the "occupational" criterion

When data from a general tabulation of the population dependent on various types of economic activities are used for specific analysis of the number and characteristics of persons who derive support from a particular industry or occupation, some deficiencies in the data become evident. The shortcomings discussed here apply particularly to the data for the agricultural population, but the discussion is also pertinent in varying degrees to data for other types of economic activities.

In the first place, the data may be greatly affected by the time reference of the census questions relating to economic activities. This factor is particularly important in view of the large seasonal and other short-term variations to which agricultural operations are subject in many areas. To be most useful, statistics of the agricultural population should refer to persons who derive support from agriculture over a considerable period of time, and not merely during a certain season when their number may be unusually large or small. Data derived from an enumeration of the economically active population in accordance with the "labour force" concept, that is, with reference to activities during a specified week or other brief time interval, are therefore likely not to give entirely satisfactory measures of the agricultural population. Data obtained on the basis of the "gainful worker" concept also are likely to be somewhat unsatisfactory from this point of view because of the failure to specify any time reference, or the vagueness of the time reference specified, in the questions on economic activities commonly asked where this concept has been used. So far as the measurement of the agricultural population is concerned, it would appear that most useful results would be obtained from questions relating to economic activities during a specific, but long, period such as a year.

Another difficulty is that the classification of economically active persons by industry or occupation ordinarily refers only to their principal activities. Thus persons engaged partly in agriculture but chiefly in other types of work, and their dependants, are excluded from the count of the agricultural population. This limitation may be very important in suburban or semi-industrialized areas where part-time farming is common, or in areas where the population derives support from a combination of agriculture with forestry, fishing or mining. In some cases part-time farming may in fact be the chief source of the family's living, even though some other occupation is reported as the principal one because it brings in cash income, or because a greater social prestige is attached to it. Where data on supplementary occupations are obtained in the census it would be possible to make separate tabulations of persons having agriculture as a supplementary occupation (or industry) and of their dependants, but in most cases this has not been done.

Still another shortcoming of the data as a measure of the whole population deriving support from agriculture is the exclusion of persons in households where the head has a non-agricultural occupation but where one or more other members are engaged in agriculture. Dependants in such households are likely to derive at least a part of their support from the income of the agricultural workers, and where there are several such workers agriculture may in fact be the main source of the family income. It would be possible to improve the coverage of the statistics by making a special tabulation of the total population in households having any members in agricultural occupations. This tabulation would not be a good substitute for the statistics recommended by the Population Commission, for it would include many families that derive only a minor share of their income from agriculture, but it would be useful as a supplement. In order to give an indication of the degree of dependence on agriculture, the households covered by such a tabulation might be classified into such groups as the following:

(1) Households where all economically active members are engaged in agriculture;

(2) Households where one or more (but not all) economically active members are engaged in agriculture; subdivided into:

(*a*) Those where the head is engaged in agriculture;

(*b*) Those where the head is engaged in non-agricultural activities, or is not economically active.

If data on supplementary as well as principal types of economic activity were available for each

worker, the tabulation could be improved by including in the total all households where any member reported agriculture either as a primary or as a supplementary occupation. Group (1) above might then be limited to households where no non-agricultural activity was reported even as the supplementary occupation of any member, so that it would represent a count of population dependent entirely on agricultural occupations.

It would evidently not be practicable to use such refined methods of tabulation with reference to the population dependent on each occupation or industry in the whole range of economic activities. Even with reference to agriculture alone, these methods may be too complicated to be practicable in most censuses.

### 2. Shortcomings of data on the farm-resident population

Data relating to the population living on farms, as a measure of the agricultural population, are open to the objection that they include some persons who have no connexion with agriculture other than residence on a farm, and exclude some who depend on agricultural occupations but who do not live on farms. The importance of these objections varies from area to area, depending on national or local customs and land settlement patterns. Where farmers and farm workers customarily live in villages, and not on the agricultural holdings where they work, the farm-resident population would be a very poor measure of the population dependent on agriculture. It would also be a poor measure in areas where many urban workers commute to cities or towns from country residences which may be located on farms, or where important manufacturing or mining industries, etc. are located in rural territory and draw their labour supply from surrounding farms.

These data have the additional disadvantage of requiring a special question on the census schedule to determine whether or not each household is located on a farm. No such question is required for the data based on the "occupational" criterion, which can be derived from the reports on occupation or industry of economically active persons and from the information on household composition which is ordinarily obtained for other purposes. The question as to residence on a farm appears simple at first sight, but in practice many complications may occur. No simple definition of a farm will give results that are consistent with agricultural statistics from other sources. If a farm is defined with the precision necessary, for example, in a census of agriculture, the definition becomes very difficult to apply accurately in a population census. The problem is somewhat simplified where a census of population is taken concurrently with a census of agriculture, but even in this case there may be difficult problems in determining the conditions under which a given household is to be regarded as located on a farm. For example, if a certain part of the tract owned by a farm operator, together with a dwelling, is rented to a tenant who uses it only as a residence, the question arises as to whether or not that part of the tract can be considered as "on the farm".

An advantage of the residence criterion as a basis for enumeration of the agricultural population is that it can be applied not only in population censuses, but also in censuses of agriculture.[8] The practice of enumerating the farm-resident population in censuses of agriculture has been fairly common in the Western Hemisphere. It was done, for example, in the agricultural censuses of Argentina (1947), Brazil (1940), Canada (1941), Paraguay (1944) and the United States (1945). It has also been done in the agricultural censuses of a few countries in other parts of the world, including Estonia (1929), Latvia (1929) and New Zealand (1930). In the United States, a series of statistics on the farm-resident population, obtained sometimes from population censuses and sometimes from agricultural censuses, has been maintained over several decades. The data obtained from the two types of censuses are not always consistent, but consistency is doubtless better than it would be if data were obtained in

[8] It is also possible to obtain data in an agricultural census on the population dependent on agriculture, defined according to some form of an occupational criterion, but the data will not correspond to those customarily obtained in population censuses. In the 1946 census of agriculture in Uruguay, for example, a section of the schedule called for a report on the number of persons working on the farm (including the farm operator and hired workers) and the number of persons in their families. These reports, if accurate, will give an approximate measure of the population in families containing any agricultural workers. They will include duplications, however, to the extent that some families have members working on more than one farm. They will also be subject to bias because of ignorance on the part of the informant for the agricultural census (usually the farm operator or manager) about the families of workers employed on the farm. In any case, their definition will be broader than that of the agricultural population according to an occupational criterion, as ordinarily measured in population censuses. For example, they will include some families where the agricultural worker is not the family head and some where, though he is the head of the family, agriculture is not his principal occupation. Such differences in coverage are unavoidable, for it would not be practicable in an agricultural census to consider the occupations of other members of the families of farm workers, nor to determine whether or not agriculture is their principal occupation.

one census by the residence criterion and in the other by the occupational criterion.

There is a basic reason why data on the farm-resident population obtained in a census of agriculture are likely to differ from those obtained in a census of population. In a population census, the emphasis is on counting people; each household is visited or receives a schedule to be filled, and an effort is made to secure first-hand information about every individual in each household. The identification of farms, if it is undertaken at all in a population census, is only incidental to one part of the census schedule. In an agricultural census, the identification of farms is paramount; the population data, if any, are only incidental and they are often obtained second-hand from a person only slightly acquainted with the people for whom he reports.

The Food and Agriculture Organization of the United Nations, in its recommendations regarding the content of agricultural censuses to be taken around 1950, has suggested that data on the farm-resident population be obtained in those countries where only a census of agriculture is to be taken.[9] However, where agricultural and population censuses are to be taken concurrently, it has recommended that the population census be the source of information on agricultural population. In this case, extremely valuable results may be obtained by collating the data from the population census with data on characteristics of farms obtained in the agricultural census, in the manner described in chapter XV.

### 3. The criterion of family or household income

A possible alternative definition of the agricultural population, which might give better results under some conditions than either the occupational or the residence criterion, is one based on the source of income. For example, the agricultural population might be defined as persons in households or families whose chief source of income is farm operation or agricultural employment. Such a definition was suggested by the Population Commission as an alternative to the occupational criterion in censuses where the latter is not considered feasible.

Where there is only one economically active person in the household, or where there are several economically active persons all engaged in agriculture, a definition based on income will give the same result, in most cases, as the occupational criterion. In such cases, differences will occur only where the type of activity designated as the principal occupation is actually less remunerative than another regarded as a supplementary occupation; or where a major part of the household's income is from sources other than gainful employment, such as rents and pensions. The chief possible advantage of the definition referring to the source of income would be to provide a better basis for classification of families having several economically active persons, some engaged in agriculture and some in other occupations.

Of the three types of criteria discussed, this one is conceptually the best indicator of economic dependence upon agriculture. Application of either of the other two criteria measures characteristics that are closely associated with economic dependence upon agriculture (agricultural activity and farm residence), but not that characteristic itself.

The disadvantages of this definition are: (1) that it would ordinarily require a question on the schedule to determine the chief source of income; (2) that it would involve problems of precise definition and the development of adequate instructions to enumerators or respondents; and (3) that it would involve difficulties in obtaining accurate information from census respondents. Since this approach has not been widely used in measuring the agricultural population (except in small-scale sample surveys where exact amounts of income derived from specified sources were obtained), there is a lack of direct experience to draw upon.

If the family income criterion were adopted, a possible general definition of agricultural income would be: income derived from agricultural work (including operation of a farm and work for wages) carried on by members of the household. Such a definition would exclude from the agricultural population landlords who live on the income derived from renting their farms, but take no part in agricultural operations. It would be desirable to have the classification refer to the year preceding the census date or some other specified period of twelve months. Both money and non-cash income should be included. Non-cash income would include the value of goods produced and consumed by the household or exchanged for other goods, as well as goods received in lieu of wages. Even rough estimates of such income are often very difficult to obtain.

[9] Food and Agriculture Organization of the United Nations. *Program for the 1950 World Census of Agriculture.* Washington, December 1948. p. 3.

The classification might be based on the incomes of census households, of census families (excluding unrelated household members) or of "economic families" (including persons living apart). In any case instructions would have to be developed regarding the classification of households or families whose membership has changed during the reporting period.

The phrases "chief source", or "primarily dependent", would need clarification. One possibility would be to regard as dependent upon agriculture those households or families which derive half or more than half of their income from this source. Another possibility would be to classify as dependent upon agriculture those which derive more of their livelihood from agriculture than from any other single source. The classification might be based either on the proportion of total income or on the proportion of earned income derived from agriculture.

A measure of the agricultural population defined in this way could most easily be obtained in censuses where questions were asked on the total amount of income or earnings of each individual or household. Such questions can be arranged so as to obtain separate reports on income derived from agriculture, as well as from various other sources. Where the questions call for the total earnings of each individual during a stated year or other period, the data on economic activities can be used to determine, at least approximately, the occupation and industry from which the major part of the earnings, both of the individual and of the household, was derived. Thus the criterion of family income can be used to identify the population dependent, not only on agriculture, but also on each other type of economic activity. This, of course, is only one of many applications of such data on income.

Where general-purpose questions on income are not feasible, it may be possible to ask a special question merely to determine the degree of dependence of the household, or family, on agriculture; for example:

What proportion of the total income of this household is derived from farming or farm work? (Check one)

. . . None
. . . Less than half
. . . Half or more (but not all)
. . . All

The collection of data on income always involves difficulties associated with the evaluation of non-cash income, the inability to recollect sources and amounts received, and general reluctance on the part of the respondent. However, if only an estimate in terms of broad proportions were required and no inquiry were made as to actual amounts, these difficulties would be reduced. In most cases it would be evident whether more or less than half the income was derived from agriculture. However, in those cases in which the agricultural proportion was close to half, much care would have to be exercised to prevent serious bias in the returns.

For the sake of international comparisons it would be desirable, in any census where the family income criterion may be applied, to obtain data also in accordance with the occupational criterion, as recommended by the Population Commission.

## F. Classifications of dependency status

In all of the seventeen censuses giving tabulations of the population dependent on various types of economic activities, with the exception of that of Portugal (1940), the tabulations showed a distinction between persons engaged in each type of economic activity (or independent persons not economically active) and their dependants. The tabulations of the 1946 census of France, however, showing the population in households of which the heads were engaged in agricultural occupations, did not make any distinction between the economically active members of the households and the dependants. In the United States census of 1940 the data for persons living on farms were classified in such a way as to show separately economically active and inactive persons with distributions of the former by occupation, industry and occupational status.[10]

About half of the censuses examined provided data for several separate categories of dependants. As already indicated, the persons classified as "dependants" sometimes included categories defined as economically active by international bodies. The categories shown in each census are listed below:

AMERICA

Chile, 1940 ..... Family members, domestics, unemployed.

EUROPE

Austria, 1934 ..... Housewives, family members engaged in house-

[10] These and other tabulations of the farm-resident population by characteristics were limited to the "rural-farm" population, the small number of farm residents in urban areas being excluded.

work, children under 14, persons 14 and over preparing for occupations, others.

Czechoslovakia, 1930 .Family members, domestics.

Denmark, 1940 .....Married women, housekeepers, domestic servants, daughters occupied with housework, children not self-supporting.

Finland, 1940 .....Family members without occupation, domestics, dependants of domestics.

Germany, 1939 .....Housewives, other dependants.

Luxembourg, 1935 ...Family members without occupation, domestics.

Norway, 1930 .....Married women, children under 15 years of age, other dependants, houseworkers, domestics.

Sweden, 1945 .....Housewives, children under 15 years of age, others.

Switzerland, 1941 ...Housewives, other related adults, children under 16 years of age, unrelated persons.

In the 1940 census of the United States, persons not economically active living on farms were classified into the categories: engaged in housework, in school, unable to work, in institutions and other. These categories were not, however, classified by the economic activities of the persons on whom they were dependent.

## G. Tabulations of characteristics of the agricultural population and population dependent on various other economic activities

Data on the agricultural population or the population dependent on various other branches of economic activity are most useful if they are analysed with reference to demographic, social and ethnic characteristics. There was a wide range of variation among the censuses in the amount

**Table 36. Characteristics tabulated for the agricultural population or the population dependent on various other types of economic activities in recent censuses**

(This table is limited to censuses where some tabulations on the agricultural population or the population dependent on various types of economic activities were available. "A" indicates that tabulations were presented for the population dependent on various types of economic activities; "B" that they were presented only for the population dependent on agriculture, defined by an occupation criterion; "C" that they were presented for the farm resident population; "x" that the given classification was presented; "–" that it was not presented; ".." that information on the tabulations was not available or was not complete)

| *Country* | *Census year* | *Type of data* | *Sex* | *Age by sex* | *Marital status* | *Educational characteristics* | *Ethnic or cultural characteristics* |
|---|---|---|---|---|---|---|---|
| AMERICA: | | | | | | | |
| Chile | 1940 | A | x | x | .. | .. | .. |
| United States of America | 1940 | C[1] | x | x | x | x | x |
| EUROPE: | | | | | | | |
| Austria | 1934 | A | x | – | – | – | – |
| Bulgaria | 1934 | A | x | x | – | – | – |
| Czechoslovakia | 1930 | A | x | x | x | .. | x |
| Denmark | 1940 | A | x | x | – | – | – |
| Finland | 1940 | A | x | – | – | – | – |
| France | 1946 | B | .. | .. | .. | .. | .. |
| Germany | 1939 | A | x | .. | .. | .. | .. |
| Greece | 1940 | B | x | .. | .. | .. | .. |
| Hungary | 1941 | A | x | .. | .. | .. | .. |
| Italy | 1936 | A | x | x[2] | x | – | – |
| Luxembourg | 1935 | A | x | – | – | – | x |
| Norway | 1930 | A | x | x | x | – | – |
| Poland | 1931 | A | x | – | – | – | x |
| Portugal | 1940 | A | – | – | – | – | – |
| Romania | 1930 | A | x | x | – | x | x |
| Sweden | 1945 | A | x | x | x | x[3] | – |
| Switzerland | 1941 | A | x | – | – | – | x |
| Yugoslavia | 1931 | A | x | .. | .. | .. | .. |

[1] These data related to the rural farm population and excluded the farm resident population in urban areas.

[2] Only two broad age groups: under fifteen, and fifteen and over, were shown, for the population dependent on agriculture. An age classification was not presented for the population dependent on other economic activities.

[3] Tabulations refer to persons six to thirty years of age attending school.

of information tabulated on these characteristics, both as to the number of characteristics tabulated and as to the detail of their classifications. The types of tabulations on these subjects presented in the reports of the various censuses are shown in table 36. The table and the following discussion are not intended to give an exhaustive account of all such tabulations that have been presented, but rather to give a brief description of the tabulations available on the most important characteristics.

### 1. Sex and age

Except in the censuses of France (1946) and Portugal (1940), nearly all of the statistics on the agricultural population or population dependent on various types of economic activities presented in the census reports were classified by sex.

Classifications by age groups, for each sex, were presented in the tabulations of nine of the seventeen censuses. In all cases the data on age were presented by dependency status. The number of age groups ranged from only two broad groups (in the 1936 census of Italy) to a complete tabulation by single years of age for the farm-resident population in the United States (1940). The specific age groups tabulated in each census are shown in table 37.

**Table 37. Age classifications used in tabulations of the agricultural population and of the population dependent on various other types of economic activities by age and sex in recent censuses**

(This table is limited to censuses where these data were tabulated by age and sex. "A" indicates that the data refer to the population dependent on various types of economic activities, classified by industry, occupation, or both; "B" that they were presented only for the population dependent on agriculture, defined by an occupational criterion; "C" that they refer to the farm-resident population; "–" that no age classification of the specified type was shown)

| Country | Census year | Type of data | Age range covered in classifications by: 5-year groups | 10-year (but not 5-year) groups | Other age groups tabulated |
|---|---|---|---|---|---|
| AMERICA: | | | | | |
| Chile | 1940 | A | 15 – 19 | 20 to 59 | 0-14, 60 and over |
| United States of America | 1940 | C | 0 to 99 | – | Single years 0 to 99, 100 and over[1] |
| EUROPE: | | | | | |
| Bulgaria | 1934 | A | 15 – 19 | 20 to 69 | 0-14, 70 and over |
| Czechoslovakia | 1930 | A | 15 to 64 | – | 0-14, 65-79, 80 and over |
| Denmark | 1940 | A | 15 to 24; 60 to 64 | 25 to 44 | 0-14, 15-17, 18-19, 45-59, 65 and over |
| Italy | 1936 | B | – | – | 0-14, 15 and over |
| Norway | 1930 | A | 21 to 30 | 31 to 70 | 0-14, 15-17, 18-20, 71 and over |
| Romania | 1930 | A | – | – | 0-12, 13-20, 21-40, 41-64, 65 and over |
| Sweden | 1945 | A | 0 to 79 | – | 80 and over |

[1] Data refer to the rural-farm population, excluding farm residents in urban areas. Age was tabulated also in combination with various other characteristics of the rural farm population, usually in five-year age groups from zero to seventy-four.

The Population Commission mentioned a classification by sex and age as particularly important in tabulations of the agricultural population, suggesting that the following age groups be shown: under 5 years, ten-year groups from 5 to 64 years, 65 years and over. These particular age groups could be obtained from the tabulations presented only for the United States (1940) and Sweden (1945).

### 2. Household relationships

The Population Commission suggested also that data on the agricultural population be tabulated, for each sex, by household relationships, showing (1) heads of "family households"; (2) relatives of heads; (3) persons in "family households" not related to the head, or in "collective households".[11] Tabulations in this form have not generally been made in recent censuses, though such a classification of the farm-resident population was made in the United States census on the basis of a 5 per cent sample tabulation. In addition, the censuses of Bulgaria and Italy are examples of those showing a classification of households by industry of the household head and number of members of the household. The classification suggested by the Commission permits the derivation

[11] The terms "family households" and "collective households" were defined in accordance with the previous recommendations of the League of Nations Committee of Statistical Experts. See *Report of the Population Commission* (third session) (*op. cit.*), p. 21.

of the number of agricultural households, their average size and the average size of agricultural families defined as excluding unrelated persons such as lodgers, servants and hired hands.

### 3. Marital status

Data on the marital status of the population dependent on various economic activities were tabulated in the censuses of Czechoslovakia (1930), Italy (1936), Norway (1930) and Sweden (1945), and marital status data were tabulated for the rural-farm-resident population in the census of the United States (1940). In each case, except that of Italy, the data were cross-classified by age and sex; for Czechoslovakia, Sweden and the United States they were given also by dependency status, or for the economically active and the remainder of the population.

### 4. Educational characteristics

Data on literacy and educational level of the population dependent on various types of economic activities were presented in the census of Romania (1930). These data were tabulated by dependency status but not by sex. The report of the Swedish census for 1945 gave data on the various types of economic activities on which persons six to thirty years of age attending school were dependent. The United States census tabulations for 1940 provided data on years of school completed and on school attendance for the rural-farm population, by age and sex.

### 5. Ethnic or cultural characteristics

In six of the censuses examined, data on various ethnic or cultural characteristics were presented for the agricultural population or the population dependent on various economic activities. These data include nationality, citizenship, mother tongue, race, religion, etc. The characteristics tabulated in each of the censuses are listed in table 38 with an indication of the cross-classifications that were presented by sex, age and other characteristics.

**Table 38. Tabulations of ethnic and cultural characteristics of the agricultural population or population dependent on various other types of economic activities in recent censuses**

(This table is limited to censuses where these data were tabulated by ethnic or cultural characteristics; "A" indicates that the data refer to the population dependent on various types of economic activities, classified by industry, occupation, or both; "C" that they refer to the farm-resident population)

| *Country* | *Census year* | *Type of data* | *Characteristics* | *Cross-classifications* |
|---|---|---|---|---|
| AMERICA: | | | | |
| United States of America | 1940 | C[1] | Nativity,[2] Nationality,[3] Race | Sex, age, and economic activity status |
| | | | Mother tongue | Sex and age |
| | | | Country of birth of the foreign born | Sex |
| EUROPE: | | | | |
| Czechoslovakia..... | 1930 | A | Mother tongue<br>Religion<br>Nationality | Sex and age of the individual or of the person on whom dependent |
| Luxembourg..... | 1935 | A | Nationality[4] | Sex and dependency status |
| Poland..... | 1931 | A | Religion | Sex |
| Romania..... | 1930 | A | Ethnic group | None |
| Switzerland..... | 1941 | A | Nationality[4] | Sex and dependency status |

[1] These tabulations were limited to the rural-farm population, excluding farm residents in urban areas.

[2] Data were presented for natives and foreign-born persons only, and were limited to the white population.

[3] Data were limited to the foreign-born white population showing the number of naturalized and aliens.

[4] Data were shown for nationals and aliens only.

### 6. Urban and rural residence

Most of the censuses examined gave a classification of the population dependent on various economic activities by urban and rural areas. The exceptions are the censuses of Chile (1940), France (1946), Italy (1936), Luxembourg (1935) and Portugal (1940). For the United States, only the total farm-resident population was shown by urban and rural residence; the cross-tabulations by characteristics related only to the population living on farms in rural areas, that is, the "rural-farm" population.

The type of urban-rural classification varied somewhat. For example, the data for Austria (1934), Czechoslovakia (1930) and Germany (1939) were given for minor civil divisions, grouped by size classes. Since the urban population is sometimes defined in terms of minor civil

divisions in these countries, this classification may properly be regarded as an urban-rural classification. In some of the censuses (e.g., Hungary in 1941, Switzerland in 1941 and Yugoslavia in 1931) the data were given separately for each of the principal cities or for each "autonomous town". In others, all or virtually all of the tabulations of economic groups of the population by other characteristics were shown for urban and rural areas. These include the censuses of Bulgaria (1934), Denmark (1945), Finland (1940), Norway (1930), Romania (1930) and Sweden (1945).

### 7. Characteristics of farms (in tabulations of agricultural population)

Where data on the agricultural population have been obtained in censuses of agriculture it has sometimes been possible to present very useful tabulations of this population group classified by characteristics of the farm. For example, in the Canadian census of agriculture in 1941, the farm-resident population was classified by size, tenure and type of farm with a cross-classification by age and sex. Such tabulations cannot be made on the basis of population census returns unless information about the characteristics of farms is obtained on the population census schedules. However, collation of the results of population and agricultural censuses makes it possible to relate the agricultural population to the characteristics of agricultural holdings and at the same time to obtain a maximum amount of demographic information on the agricultural population (see chapter XV). Demographic data obtained in censuses of agriculture are not ordinarily adequate for purposes of analysis and comparison.

# XV. COLLATION OF RESULTS OF POPULATION AND AGRICULTURAL CENSUSES

*(prepared by the Population Division of the United Nations)*

## A. Purposes of the collation

The preceding chapters have shown how population census data can be used to give information about the human resources devoted to agriculture in each country and about the numbers and characteristics of people who depend on agriculture for their support. The data from agricultural censuses, on the other hand, provide information about the characteristics of agricultural holdings, their equipment and land resources and their production. Only by analysing these two types of data in relation to one another can the full value of each be realized. It is the joint study of the human and physical resources of agricultural enterprises, and of their productivity, that can be most helpful in solving the practical problems of agricultural development and raising the level of living of the agricultural population. This kind of analysis is also essential for an understanding of the demographic situation and the significance of population trends, in all the many countries where agriculture is the major branch of economic activity. A primary consideration in the planning of census projects should be to provide means whereby the results concerning agriculture can be analysed in conjunction with those on population.

The problem is complicated by the fact that population and agricultural censuses are usually conducted as separate projects, even though they may be undertaken simultaneously. In the recent censuses of many countries (for example, Canada, the Philippine Islands, Poland and the United States) the enumerations of population and agricultural holdings have been made at the same time by the same enumerators, but the data have been recorded on separate schedules which were separately coded and tabulated, so that they could not readily be interrelated. In other countries (including Denmark and the Union of South Africa) the two types of censuses have been taken at different dates in the census year, and elsewhere (for example, in Norway and Sweden) they have been taken in different years. Thus a better seasonal timing of certain inquiries and a better distribution of the work load may have been achieved, but integration of the results has been made more difficult.

A number of countries have partially solved the difficulty by obtaining certain information about agricultural population and employment on the schedule for the agricultural census, where it could readily be tabulated in combination with data on the characteristics of agricultural holdings and production. In the 1930 census of Czechoslovakia, for example, the agricultural schedule included a question regarding persons employed on the holding in the preceding year, calling for separate returns on hired workers and members of the operator's family, classified by sex and broad age groups. This overlapped the questions on employment and occupations in the population schedule. The agricultural schedule also called for the number of dwellings on the holding and the number of persons living there. More or less similar methods have been used in many other countries, including Norway, Denmark, South Africa and a number of American countries.[1] A less common practice has been to obtain some data about the characteristics of farms on the population census schedule, as in recent censuses of Germany and Sweden, where for persons with farming as their main occupation the amount of land under cultivation has been recorded on the population schedule in order to get a subdivision of the agricultural population corresponding to the usual classification of agricultural holdings by size.

The possibilities of such devices, however, are limited, since it is not economical to enter on the agricultural schedules more than a small fraction of the information shown on the population schedules, or vice versa. Furthermore, when data on

[1] The most elaborate extension of agricultural census schedules in this direction was made in the United States in 1945. In addition to questions for all holdings regarding the number of persons employed on the holding and the number living there, classified by broad groupings, additional questions were asked for a sample of farms, referring among other things to characteristics of the farm dwellings and to the sex, age, and employment of each individual in the operator's household and in other households living on the farm.

the same subject are obtained on both schedules the results are likely to differ, leading to confusing contradictions in official statistics.[2] In order to avoid such discrepancies and at the same time to make the fullest possible use of the census returns, it is desirable to provide for joint tabulations of the data obtained on the separate schedules for agriculture and population.

Joint studies of the two sets of data can be made in some instances by tabulating both sets for small homogeneous areas where average relationships between the characteristics of the people and those of the agricultural holdings are fairly representative of individual cases. Here too, however, the possibilities are limited because no practicable amount of geographical detail in tabulations can give data for areas that are sufficiently homogeneous with respect to all of the important relationships which may require study. The only way in which the full potentialities of the data can be realized is to collate the schedules for individual agricultural holdings with those for the persons who live and work there.

Tabulations of collated population and agricultural census schedules permit analyses that go far deeper into the economic, social and demographic problems of a farming population than it is possible to penetrate with the data from either census alone. For example, the farming population may be classified according to the size, value and productivity of agricultural holdings, so as to obtain measures of differential economic status which may be related to differentials in fertility, marital status and other demographic characteristics. Labour requirements may be studied in relation to labour supplies available and to the productivity of employment, on holdings of different sizes, types of land use, etc. The occupational composition of households associated with various types of holdings may be examined in order to indicate the extent to which agricultural incomes are supplemented by work in other industries. Studies on these subjects are extremely valuable even if they can be made only on a sample basis.

There appears to be no country where a comprehensive collation of population and agricultural schedules has been carried out in a national census. However, some work of this kind on a small sample basis has recently been done in the United States. In 1944, a sample of approximately 6,000 agricultural schedules from the 1940 census was brought together with the 1940 population census schedules for households associated with the given agricultural holdings; and tabulations were made, drawing on the data from both schedules. The results illustrated what valuable analyses would be possible if the project were carried out on a larger scale.[3] At the same time, the deficiencies of the results obtained served to call attention to methodological improvements which might be made in similar projects in the future.

Of course, the technical difficulties involved in such a collation may be prohibitive in countries where budgetary and other conditions permit the use of only relatively simple census procedures. Where it is practicable, however, collation of the two schedules will add greatly to the value of both.

## B. Criteria for identifying the population associated with agricultural holdings

The principal ways in which an individual may be attached to a given agricultural holding have been referred to in the preceding chapter. They are:

*(a) By operation of the agricultural enterprise*

The operator of a farm or other agricultural holding is the person most directly and closely associated with the enterprise. Operators are the nuclear group which should be covered by any project for relating population data to those for agricultural enterprises.

*(b) By employment*

All persons who are employed on an agricultural holding, even those who work only a few hours a day or a few days each year, may be regarded as associated with the holding in an economic sense, as at least a part of their livelihood is derived from this source.

*(c) By residence*

Persons not operating agricultural enterprises, and not employed thereon, may be associated with agricultural holdings by virtue of the fact that their residences are located there. The association in this case is important more from a sociological than from an economic point of view.

[2] For example, in the United States census of 1940 the count of persons employed in agriculture obtained from the agricultural schedules was nearly 9,700,000 while the population census count for the same date, based on definitions which did not differ greatly, was only 8,200,000.

[3] Although the report of the project has not been published, the United States Bureau of the Census and Bureau of Agricultural Economics, under whose joint auspices it was prepared, have authorized the United Nations to draw on it for the present report.

Persons economically associated with agricultural enterprises according to the first two of these criteria include not only the individuals who operate or are employed on the enterprises but also other members of their households.

In a given country it may be found desirable to collate the population census data for individuals associated with agricultural holdings in any one or any combination of these three ways, with the data on those holdings obtained in the agricultural census. The population group to be covered by the collation project would doubtless be selected with a view to covering at least all persons included in the agricultural population as defined for the purpose of the census in each country. It might be desirable to cover also some classes of persons not included in the definition of the agricultural population, but associated with agricultural holdings in one or more of the ways mentioned above. In this case, it would be advantageous to conduct the project in such a way that these additional classes could be identified separately in the tabulations of results.

It may not be feasible to extend the collation to some of the groups mentioned above, because of difficulties in obtaining the necessary information, which may be encountered in some countries. The collation of 1940 population and agricultural census schedules for the United States had to be limited to households associated with the given agricultural holding through operation of or residence on the holding. The households of hired workers who were associated with the holding only by virtue of employment were omitted because the census schedules did not provide the information necessary for the identification of such households. However, this limitation might have been avoided if the collation project had been planned before the time of the census instead of four years afterward. In 1950 censuses similar limitations on the possibilities of collating the census schedules may be avoided by proper planning in advance.

The specific definitions of the criteria of association with farms will depend chiefly on the concepts of agricultural holdings, of operators, of residence on agricultural holdings, of employment and occupations, of households, etc. which are used in the various countries for purposes of the population and agricultural censuses. International standardization of collated population and agricultural data can be attained only through the acceptance of standards with respect to the definitions of these basic census items.

## C. Collation procedures

### 1. Use of sampling

In any country having a large number of agricultural enterprises it may be possible to effect substantial savings in the cost of a collation project by limiting it to samples of agricultural holdings and of population associated with them. The advisability of sampling and the choice of sampling methods depend on a variety of circumstances in each country. If national samples of population or agricultural holdings are established in connexion with the censuses for such purposes as the collection of supplementary data and preliminary tabulations of results, these same samples may also serve for the collation project. In this connexion, reference is made to the recommendations regarding the use of sampling in census work, which are contained in the reports of the United Nations Sub-Commission on Statistical Sampling.[4]

The samples used for the United States collation project mentioned above were drawn from a group of areas which had previously been selected to represent various strata of the national population for purposes of monthly population surveys.[5] Within each of these areas a sample was drawn at random from the file of agricultural census schedules, the sampling intervals being chosen in such a way as to yield a self-weighting national sample of about 6,000 schedules, or 0.1 per cent of the total in the United States. These schedules were matched with the population schedules for the households of the operators and for other households living on the agricultural holdings represented. In addition, a supplementary sample was drawn from the population schedules, for those households which were enumerated in the population census as living on farms, but which could not be matched with any agricultural schedules. Thus the combined samples represented the whole farm-resident population in the United States as well as all agricultural holdings and their operators.

Two features of this sampling procedure were particularly advantageous for a collation project. In the first place, the fact that the samples were limited to a relatively small number of selected areas, instead of being spread throughout the United States, greatly reduced the labour of

[4] *Report to the Statistical Commission on the third session of the Sub-Commission on Statistical Sampling* . . . United Nations document E/CN.3/83 and E/CN.3/Sub.1/20. 24 October 1949. See especially pp. 19-30.

[5] For a statement of the principles involved in the selection of areas see: United States Bureau of the Census, *A chapter in population sampling,* Washington, Government Printing Office, 1947.

matching agricultural and population schedules. The search for the population schedules belonging to a particular holding could usually be confined to the sample areas, though occasionally, in cases of non-resident operators, it was necessary to seek them at a distance. Other considerations being equal, it would be desirable to use area-sampling techniques of this kind for collation projects in connexion with 1950 censuses.

The second important feature was the use of a dual sample, one part being drawn from the agricultural schedules and another from the population schedules. The considerations which made it necessary to follow this procedure in the United States project (namely, the desire to obtain data for the population associated with agricultural enterprises by virtue of residence, and the fact that some of the farm-resident population could not be identified with any holdings for which agricultural schedules were returned) may not have much importance in countries where the circumstances are different. Nevertheless, some provision for sampling from both population and agricultural schedules is likely to be desirable in any circumstances. The need for such dual sampling is particularly evident in connexion with the collation of schedules for hired agricultural workers and the holdings on which they are employed. If this were done only by selecting a sample of population schedules for hired workers and finding the agricultural schedules for the holdings where they were employed, the results could not be used to analyse the numbers or characteristics of all workers employed on any given holding or sample of holdings. Conversely, the data obtained by selecting a sample of holdings and locating the population schedules for all hired workers employed there would not show the whole picture of agricultural employment for any sample of workers. Similar considerations apply, though with less force, to the collation of schedules for operators and their holdings. Sampling and collation from both directions are necessary to obtain all of the important information needed. Of course, it is desirable to plan the two samples in such a way that they will overlap as much as possible, thereby reducing the cost of collation and tabulation of results. The use of area samples, such as those which were employed in the United States project, ensures a maximum degree of overlapping. Where area sampling is used, special forms for the population and agricultural schedules may be used in sample areas in order to provide the information needed for the work of collating, as explained in the next section.

### 2. Identification of individuals associated with particular holdings

An essential step is to establish the means of identifying, easily and positively, the persons who are associated with a given agricultural holding, and vice versa, according to each of the criteria of association. This problem is discussed below with regard to each criterion separately.

(*a*) *Identification of operators.* It is common census practice to record on the agricultural schedule for each holding the name and address of the operator. This establishes a means of cross-reference from the agricultural to the population schedule. The reference so obtained, however, cannot be followed very easily in some cases, particularly where rural addresses cannot be specified exactly. Moreover, in some instances the name and address may not give a positive identification of the operator, for example, where two or more individuals with the same or similar names live in the same household or in neighbouring households. Where population and agricultural censuses are taken simultaneously a better identification can be made by recording on each agricultural schedule the serial number of the population schedule where the operator is listed.[6]

An alternative means of cross-reference is to record on the population schedule, opposite the name of each person operating an agricultural enterprise, the location or serial number of the holding which he operates. This procedure was used for the collation project in the United States, where the serial numbers of the agricultural schedules had been entered on the population schedules for the purpose of checking the completeness of enumeration.[7] Cross reference by means of population schedule entries, however, is likely to be somewhat less satisfactory than that effected by entries on the agricultural schedules, because in most countries the population schedule does not contain any direct question regarding the operation

[6] The term "serial number" is used here and below to represent whatever code may be entered on the schedules during the process of enumeration to identify a particular household, individual, or agricultural holding (for example, enumeration district number; number of schedule within the district; line number on the sheet; etc.) It is understood that in some countries the numbering required for even a provisional serialization is not customarily made until after the enumeration has been completed. Under those circumstances, of course, the suggestions made here for identification by means of serial numbers are not practicable.

[7] There was a difficulty in the case of operators residing at a distance from their holdings, especially if the residence and the holding were located in different enumeration districts. In such cases the names and addresses of operators as given on the agricultural schedules had to be used as the basis for the collation.

of an agricultural enterprise, and consequently there is no assurance that the holdings of all operators will be identified. To be sure, there is ordinarily a question concerning occupations, but not all operators of agricultural enterprises will necessarily report their occupations as "farmers", etc. A different occupation may be given, for example, if the operation of the farm is only a secondary activity of the individual, or if an individual who operated a farm during the preceding year is not actually doing so at the time of the population census.

Under some circumstances it may be necessary to enter cross-references both on the population and the agricultural schedules. This procedure is especially desirable where the two schedules are filled at different times or by different enumerators, or where either census is conducted by a canvass without enumerators. Under those conditions it is not feasible to use serial numbers as a means of identifying either the agricultural schedules for the holdings of particular operators, or the population schedules for operators of particular holdings. The only practicable procedure is to rely on the name and address of the operator as given on the agricultural schedule, and the location of the holdings as given on the population schedule for each operator. Some errors in the results must be expected because of inexact statements of names, addresses, and locations, and (in case the censuses are taken at different dates) because of changes in the identity or addresses of operators during the interval. The errors can be minimized, though not entirely eliminated, by providing for cross-references on both schedules.

A dual set of references will be needed also if the collation is to be made on a sample basis. In that case, as already pointed out, it will be desirable to draw samples from the files of both population and agricultural schedules. The cross-reference entries will therefore have to be made on both schedules, at least in sample areas.

(*b*) *Identification of persons employed on agricultural holdings.* It is relatively difficult to identify the individuals (other than the operator) who are associated with a given holding by virtue of being employed there. The difficulty results partly from the fact that, in the case of hired workers, there is not a one-to-one relationship between persons and holdings, such as commonly exists in the case of operators. Many different individuals may be employed on the same holding, and the names and addresses of all of them may not be known to the operator or other informant giving data for the agricultural schedule. Likewise, a given individual may be employed on several different holdings, and the identitfy of those holdings may not be known to the informant for the population census. It must be expected, therefore, that the collation of population schedules for hired agricultural workers and their households with the appropriate agricultural schedules will be somewhat imperfect. Under most circumstances, however, it should be possible to effect a collation that will be adequate for the primary purposes of analysis.

Because of the special difficulty of obtaining full and accurate information in this case, it is desirable that the identification of hired workers with the holdings where they are employed be made, to the extent possible, by means of entries on both the population and the agricultural schedules. For reasons which have already been discussed, this is necessary in any case if the collation is to be done on a sample basis; but even if complete collation is planned, a double set of references will be effective in improving the completeness and quality of results.

It is fairly common practice in agricultural censuses to ask the number of hired workers employed on each holding during the preceding year, month, week, etc. or during a period chosen as representative of normal, maximum or minimum labour requirements. Where this is done, the information needed for collation purposes (so far as the agricultural schedule is concerned) may be obtained by recording the name and address of each of these workers (or the serial number of the population schedule where he is enumerated), wherever the informant is able to supply this information.

A difficult problem involved in supplying the corresponding cross-references on the population schedules is that of identifying persons employed as hired agricultural workers. It is desirable, if practicable, to do this by means of the questions regarding economic activities that are customarily asked in the population census for general purposes, though these questions are commonly not sufficient to identify all workers whom it would be desirable to include in the collation. As pointed out in chapter X, in some countries, the questions refer only to persons whose principal activity is gainful work, excluding housewives, students, etc. who may be employed as agricultural workers in addition to their non-gainful activities. Also, in many countries each gainfully employed individual is asked only to report his principal occupation, so that persons employed to some extent in agriculture but chiefly in other jobs are not returned as agricultural workers. Finally, the time reference of the questions may not be that which would be most appropriate for the purposes of the colla-

tion. Activities at the census date or during the preceding week, or usual activities, may differ from the individuals' activities in the period to which the agricultural census data refer.

It may be feasible to ask special questions on economic activities for the specific purpose of analysing agricultural employment in relation to the characteristics of agricultural holdings. For example, it might be desirable, if it were feasible, to ask whether or not each individual was employed as an agricultural worker at any time during the preceding year or other period covered by the agricultural census; and if so, how many days of such work he did.[8] Such inquiries, however, go beyond what has ordinarily been attempted in population censuses, even in the countries having most highly developed census programmes. They would place a heavy strain on the knowledge and understanding of the respondents, especially in countries where the enumerator method of census taking is used, and where the information is commonly obtained from some person other than the one to whom the questions refer. At least in the majority of countries these questions would not be practicable.

If the general-purpose questions on economic activities must be used as a basis for the collation, in most countries, it will be necessary to omit from the collation some more or less important groups that cannot be identified as agricultural workers on the basis of these questions. These limitations will reduce, but should not destroy the value of the results.

(*c*) *Identification of farm-resident households.* In some countries a large proportion, or even a majority of the farming population resides in rural villages and not actually on the cultivated lands. Under such conditions it may not be worth while to apply the criterion of residence in collating population and agricultural census schedules. Where residence is a significant factor, however, the application of this criterion is unlikely to cause very serious difficulties.

In the 1940 census of the United States the farm-resident population was enumerated by means of a question on the population schedule asking whether or not each household lived on a farm. In addition, enumerators were required to enter on the agricultural schedule for each holding the serial numbers of all households (other than the household of the operator) living on that holding. In the collation project, the latter entries were used to find the population schedules for households associated with each holding by virtue of residence. It appeared, however, that some enumerators had failed to enter on the agricultural schedules the serial numbers of all the households living on the agricultural holdings in their districts. It also appeared that many households not living on holdings for which agricultural schedules were returned had been reported on the population schedules as living on farms. This experience indicates that better results can be obtained, where a question regarding farm residence appears on the population census schedule, by recording for each household reported as living on a farm the serial number (or other identification) of the agricultural schedule returned for that farm. If such a procedure had been followed in the 1940 census of the United States, not only would the collation of schedules for farm-resident households have been more nearly complete, but also a better correspondence between the data on farm-resident population and agricultural holdings in the two censuses probably would have been achieved.

Where the farm-resident population is enumerated by means of questions on the agricultural census schedules, collation can readily be effected by recording on those schedules the serial numbers or other identification of the population schedules for all households counted as living on the given holding.

In the case of farm-resident households, unlike those which are associated with agricultural holdings by virtue of employment or farm operation, little purpose is served by entering cross-references on both the population and the agricultural schedules. Double references are unnecessary because no households reside on more than one holding and because the place of enumeration of a farm-resident household is necessarily the same as that of the holding. If a choice is offered between making the identification entries on the population schedule or on the agricultural schedule, it is likely that the entries on the population schedule will be more convenient and more efficient.

### 3. Treatment of cases of multiple association

Allowance should be made for the fact that a single household, or even a single individual, may

[8] The only way to evaluate exactly the relationships between labour input on particular holdings and production or other attributes of those holdings would be to ask each individual not only how much farm work he did for hire on all holdings taken together, but also how much he did on each separate holding; and to enter a reference to the agricultural schedule for each such holding. Approximations could be made, however, by allocating each hired worker and all employment reported by him to the holding where he was employed longest.

be associated with several agricultural holdings. An individual may be the operator of a number of holdings; he may operate one holding and work for wages on another; he may operate one and live on another, etc. Different members of the same household may be associated in the same way with several different holdings. It should also be considered that a given household or individual may be associated in several different ways with a single holding; for example, a hired hand may live on the holding where he is employed. In all cases of multiple association it should be possible to follow arbitrary rules of classification such that a given individual or household is related to one holding only, and only one type of association is specified. The result of such a procedure, however, is some distortion of the facts. To the extent that it is feasible, it is preferable to collate each agricultural schedule with all the population schedules for households associated in any way with that holding, regardless of any connexions which they may have with other holdings, and vice versa; and to record all the varieties of association that are manifested in each case. If this is done, of course, it is necessary to take steps to avoid duplication in summary tabulations, for example, by recording the number of different agricultural schedules with which the population schedule for a given household is collated.

#### 4. Mechanics of collation

In the collation project which was carried out in the United States the procedure was to bring the population and agriculture schedules together by manual matching and then to prepare punched cards containing relevant data from both sources. In a larger-scale project, however, it might be possible to save time and money by means of mechanical collation of punched cards, particularly if the identification of persons associated with agricultural holdings were made by means of serial numbers entered on the population or agricultural schedules, or both.

#### 5. Data to be collated

The items of information to be brought together from the collated population and agriculture schedules will, of course, depend on the kinds of data available from the two schedules and on the special needs for analysis in each country. However, the major types of information that are appropriate to record, if available, can be stated in general terms.

It is desirable to include available data from the agricultural schedule on the resources of the holding, such as areas of cultivated and other land, value of land and buildings, workstock and mechanical equipment. It is also most useful to include available information on the quantity or value of agricultural production, on the principal types of products and on the yield per acre of certain important crops. Whatever data are available on labour input and wages paid for hired labour, other costs of operation and income of the enterprise should also be included. If available, measures of geophysical and meteorological conditions may be found useful; one simple indication of such conditions which may be readily available is the proportion of cultivated land in the community. It may be useful also to include any available items relating to the financial attributes of the enterprise, such as tenure of the land and data on mortgages.

In addition to the personal characteristics of individuals associated with the holding (sex, age, marital status, education, etc.) it is useful to transcribe from the population schedule as much information as is available regarding economic activities, including employment or unemployment, primary and secondary occupation, industry, and occupational status, school attendance and other non-gainful activities, and indications of disability. If any data on the amount and principal sources of income received by the household or its individual members are available, they will be valuable in this connexion. Data on the fertility of the population, such as numbers of children borne by women, and any available indications of spatial mobility, will also be valuable.

It is very useful to record some data on characteristics of households or families as well as of an individual. Among the data which may be useful are the sex, age, marital status and occupation of the household head and size of the household, the numbers of adults and children of various ages, and the numbers of workers engaged in agriculture and other employments.

Data on the characteristics of farm dwellings, if available from either of the census schedules, will be most useful on the collated punched cards. Among the data that are most valuable in this connexion may be mentioned indications of the quality and adequacy of housing, from such points of view as size, number of occupants in relation to cubic space or number of rooms, availability of facilities and state of repair.

### D. Applications of results

Collated population and agricultural census data make possible many important demographic, economic and sociological analyses which could not

be made with the data from either census alone. The possible applications are too many to list. A brief mention of some of the major topics is enough to show the great value of the collated data.

### 1. Studies of the relation of agricultural population to agricultural resources

When the results of population and agricultural censuses taken separately are applied to the analysis of relationships between a country's agricultural resources and the number of people dependent on agriculture for a livelihood, the analysis is ordinarily made in terms of averages, such as ratios of population to areas of cultivated or cultivable land for the country taken as a whole or for its component regions. These averages fail to take account of wide differences in the resources available to individual farming families. With collated population and agricultural data it is possible to take these variations into account, for example, by classifying the agricultural population or households by size of holding, or by area of cultivable land per household member. Resources other than cultivable land can be analysed in the same way; in some areas, for example, it will be of much value to study the distribution of cropland, pastures and woodlands, of livestock and mechanical equipment, etc. in relation to the numbers of persons drawing their living from these resources. Also it is easily possible to take account of the sex distribution, ages and other characteristics of household members. Thus refined analyses can be made of the well-being of farm families from the standpoint of their productive resources; and of the capacities of the people to exploit these resources.

### 2. Studies of the demographic and sociological characteristics of economic-status groups among the agricultural population

Classifications of the agricultural population into economic-status groups, based on the analysis of either resources or production of their agricultural holdings in relation to household size and composition, are extremely valuable as a basis for studies of the economic factors associated with population change in agricultural communities. With the collated census materials it is possible to measure the differentials in fertility of the population of these economic-status groups, on the basis of the ratios of children to women of child-bearing ages, if not of more specific fertility measures such as classifications of women by numbers of children born. Likewise, other factors of population change, such as age at marriage, incidence of widowhood and divorce, and (if data are available) migration, may be studied for these economic-status groups. Available data on characteristics such as religious affiliations, education and family structure may also be compared for different economic-status groups, so as to discover the relationships between these features of the rural society and the degree of adjustment or maladjustment between population and agricultural resources.

### 3. Studies of the participation of farm households in non-agricultural employment

The data on economic activities obtained from the population census schedules, for members of households associated with farms, make it possible to determine at least roughly how many farming families depend entirely, principally, or only to a minor extent on agriculture for their living, and what are the other industries in which the members of such families commonly work. Especially valuable analyses can be made if the population census schedules contain information on income from various sources, on hours of work during the day or week and weeks or months of work during the year, and on principal and supplementary occupations. Such analyses, made for different economic-status groups and for households associated with different types and sizes of agricultural holdings, permit an understanding of the factors which affect the economic welfare of the rural population. They would be particularly valuable in certain countries for an understanding of the relationships between agriculture and forestry or fisheries as employments of the rural population.

### 4. Studies of agricultural employment in relation to production

The population census data for persons working in agricultural holdings as operators, family workers or hired labourers can be related to the production statistics on the agricultural census schedules, in such a way as to reveal differences in the efficiency of labour on various types of holdings. To some extent this can be done by using the agricultural census schedules alone if they contain information about employment, but a more detailed analysis can be made with the collated materials. It is possible, for example, to take into account the age, sex and other characteristics of the workers that have a bearing on their productivity. Furthermore, the population census schedules may provide information on combinations of agricultural and other work, on unemployment, and so on.

### 5. Studies of potential agricultural labour supply

In a similar way, the population census data showing the characteristics of those members of the agricultural population who are not engaged in agricultural work, or are engaged only to a limited extent, can be used to analyse the degree of utilization of the potential supply of labour on different types of holdings. For example, the degree of utilization may vary with the size of the holding, with the amount of various kinds of equipment available and with the type of production. Knowledge of the extent of surplus manpower, or of partially utilized manpower in the agricultural population, and of the conditions associated with failure to utilize all available labour resources, is essential for an understanding of the problem of full employment in the agricultural community, and for the formulation of national policies with respect to employment and agricultural development.

### 6. Reconciliation of differing data on agricultural population and employment from the two censuses

It has already been mentioned that, where questions relating to agricultural population or agricultural employment are asked both in agricultural and in population censuses, the results may disagree. In that event, collation of the returns for individual workers and households will be valuable as a means of finding the sources of the disagreement and arriving at more consistent and trustworthy figures.

# XVI. URBAN AND RURAL POPULATION

*(prepared by the Food and Agriculture Organization of the United Nations)*

When the present volume was prepared, a detailed study of the methods of classifying the population as urban or rural in the recent censuses of various countries was being carried out by the Food and Agriculture Organization of the United Nations. That study could not be completed in time for inclusion in this volume, and will be published separately. This chapter is therefore limited to a brief statement of the main types of classifications which can be made, and of the recommendations on this subject recently adopted by international agencies.

## A. Uses of the data

Internationally comparable statistics of the urban and rural population are needed for many purposes. One important use of these data is to follow the process of urbanization in the various countries and to relate it to (1) economic indices that reflect the progress of industrial development in terms of increases in production, trade, national income, etc. and (2) indices of social and political change in such fields as educational attainment, family characteristics, standards of living, health, political participation and governmental organization. A second large area of application for these data is in the comparison of the conditions and characteristics of urban and rural people with respect to patterns of fertility, mortality, age and sex composition, housing, sanitation, levels of living, etc. Such studies are helpful in understanding the function of cities in society and in exploring the possibilities of controlling their growth and planning their development. Another area of use for data on the urban and rural population is in the development of practical programmes in such fields as labour legislation, rationing, social welfare and the like.

## B. Major types of urban-rural classifications

Two general approaches to the problem of classifying the population into urban and rural categories are possible. The first is the classification of *administrative subdivisions*, in which the whole population of each commune, township, *municipio*, division or other minor administrative unit is classified as either urban or rural, on the basis of certain criteria applied to the area as a whole. The second is the classification of agglomerations or population clusters, in which the urban population is identified as the inhabitants of closely settled localities defined as urban according to certain stated criteria, without regard to the administrative status of such localities.

### 1. Classification of administrative subdivisions

The smallest administrative areas in the different countries vary in size, organization and function. They often contain some concentrated population and some dispersed population; some population engaged in typically urban occupations and some in typically rural pursuits; some with characteristically urban services such as door-to-door mail delivery and public utilities and some without such services. Any classification in which the whole population of such subdivisions is treated as a unit therefore yields somewhat heterogeneous categories. However, a classification on this basis has the advantage that these subdivisions (unlike other areas which may be delineated expressly for the purpose of urban-rural classification) have stable and generally recognized boundaries. If an urban-rural classification based on administrative subdivisions is made in the population census, comparable classifications can readily be made in other statistics, such as vital statistics, which are compiled only for administrative areas.

Various criteria have been used in different countries for classifying these administrative units into the urban and rural categories. The most widely used, particularly in Europe, is the type of local government or administration. Thus, the areas which have what is regarded as a city or urban form of government are classified as urban and the remainder are classified as rural. Such a

system, of course, bears some relationship to the size of agglomerations and to the general urban or rural character of the areas, but some areas which are urban in other respects lack an urban form of government, and outlying areas of a rural character are often under the administration of an urban central government. Thus some areas that might be classified in the urban category in accordance with other criteria will be classified as rural in accordance with this criterion and vice versa.

Another basis of classification, used in a number of countries, is the size of the population of the largest or chief agglomeration within the administrative subdivision. In this case all units containing an agglomeration with a given minimum number of inhabitants are classified as urban and the remainder as rural. Since the area of these administrative subdivisions varies considerably, even within a given country, classification according to the size of the population in only one centre may place in the urban category some areas where most of the population is actually rural.

A third basis of classification sometimes used is density, that is, the number of persons per unit of area, usually per square kilometre or per square mile. Under this criterion all subdivisions with a density above a given level are classified as urban, the remainder being classified as rural. This system also is not entirely satisfactory. A large administrative subdivision may have most of its population concentrated in one centre but a small number scattered over the remainder of the area, with the result that the computed density is low, although most of the population is clearly urban.

A fourth criterion, as yet not widely used, represents an attempt to get around the problems involved in the other three. The basis of classification is the proportion of the population of the administrative subdivision that is dependent on agriculture for its means of livelihood. This type of definition departs from the distributional approach to the problem of urban-rural classification and follows an occupational approach. It therefore involves the abandonment of the attempt to obtain a direct measure of the patterns and degrees of population agglomeration. Furthermore, it can be applied only in countries where data on the population dependent on agriculture (including both workers and their dependants) are available. Such data are not obtained in the censuses of most countries, and even among those where they are obtained, there is considerable variation in the definitions of the agricultural population.

The summary above does not cover all the possible specific criteria for classifying administrative subdivisions into urban and rural categories, but it includes the four basic types that have been used, in various forms and sometimes in combination with other criteria, in recent censuses of population.

### 2. Classification of agglomerations or population clusters

The second type of approach involves the identification of all clusters or agglomerations of population, or at least all those of a significant size, within each administrative area. No country is so organized geographically that the official boundaries of the administrative subdivisions correspond precisely with the boundaries of population clusters or agglomerations. Patterns of distribution and concentration change too rapidly for such a correspondence to be maintained, even if it could be established at one point in time. This approach, therefore, has the disadvantage of not yielding data that refer to known and stable areas and that can be compared accurately with non-census data. However, full information on the size of the population of all agglomerations and their location with reference to the boundaries of administrative areas can be utilized in classifying the more stable administrative subdivisions into urban and rural categories. Furthermore, this method has the very great advantage of measuring the urban population directly in terms of the unit of urbanization, namely, the city.

In many countries data of this type are obtained for purposes of urban-rural classification by adding to the population of areas legally established as urban centres that of surrounding densely settled suburban territory and of other agglomerations having the required minimum size but not legally recognized as urban. The minimum number of inhabitants required to qualify a place as urban ranges from none (i.e., all clusters are urban) in some countries to 5,000 in others. In the majority of countries, the minimum is between 1,000 and 2,500 inhabitants.

## C. Recommendations of international agencies

In 1938 the International Statistical Institute adopted proposals for standard urban and rural classifications, in response to a request of the

Health Section of the League of Nations. The main purpose of these proposals was to obtain data for use in computing internationally comparable vital rates for urban and rural areas. These were the proposals adopted:[1]

"1. The rural population is the total population of all the communes (or the smallest administrative districts) designated as rural.

"2. The communes (or smallest administrative districts) are to be divided, if possible, into various categories based on the proportion of the total population of the commune, that is agricultural population (all persons actively engaged in an agricultural occupation and inactive members of the family directly dependent upon them).

"Agricultural occupations are defined as those which will be included under that heading in the international classification of occupations to be developed in accordance with the proposals of the Committee of Statistical Experts of the League of Nations.

"Communes are to be divided into at least three categories: Rural communes — more than 60 per cent, mixed communes — 40 to 60 per cent, urban communes — less than 40 per cent.

"The total population in each of these three categories should be obtainable. If more than three categories are distinguished, their limits should be such as to permit combination into the three basic categories indicated above.

"3. In countries where the above classification cannot be made, the communes should be classified according to the size of the principal nucleus (the most populous centre) of the commune and divided into two categories:

"a. Communes whose principal nucleus contains 2,000 or fewer inhabitants;

"b. Communes whose principal nucleus contains more than 2,000 inhabitants."

It will be observed that the standards adopted by the Institute were based on the principle of classification of administrative subdivisions, combining two of the criteria mentioned above for the classification of such areas as urban or rural.

The Population Commission rejected the principle of classification of administrative subdivisions as an inadequate basis for the achievement of international comparability. At its fourth session, the Commission made the following comments on the problem of urban and rural classification in population censuses to be taken in or about 1950:[2]

"Because of the diversity of conditions affecting the classification of areas as urban and rural in various countries, it is not practicable at present to establish uniform definitions of urban and rural population for international use. It is desirable, however, that in each census provision be made for obtaining the aggregate population of all identifiable agglomerations or clusters of population, classified by size and other characteristics so that the results may be used as far as possible to improve the international comparability of existing data on this subject.

"It is therefore suggested that, for purpose of international comparisons, the following classification of the population by size of the agglomeration or cluster be tabulated, in addition to the tabulations normally made for urban and rural populations as defined in each country:

"Population in places of

| | | |
|---|---|---|
| (*a*) | 500,000 or more | inhabitants. |
| (*b*) | 100,000 to 500,000 | " |
| (*c*) | 25,000 to 100,000 | " |
| (*d*) | 10,000 to 25,000 | " |
| (*e*) | 5,000 to 10,000 | " |
| (*f*) | 2,000 to 5,000 | " |
| (*g*) | 1,000 to 2,000 | " |
| (*h*) | 500 to 1,000 | " |
| (*i*) | less than 500 | " |
| (*j*) | Population not in identifiable agglomerations or clusters (if the whole population is not included in the above categories). | |

"It is also desirable that the number of places of each size group be tabulated.

"Since this distribution involves more classes than the usual urban-rural classification, the problem of tabulation by other characteristics is somewhat enlarged. In view of this fact, it may not be feasible to make extensive cross-tabulations. It is desirable, however, that the population in places of various size classes be tabulated for each sex, at least by the age groups . . . [under 5 years, 10-year groups from 5 to 64 years, 65 years and over.] In this cross tabulation, some of the categories in the above classification by size of place may have to be combined. In that case, however, it is desirable that at least the distinction between places of 10,000 or more and those with less than 10,000 inhabitants be maintained."

[1] *Bulletin de L'Institut international de statistique.* Vol. XXX, No. 2. (The Hague, 1938). pp. 158-163.

[2] *Report of the fourth session of the Population Commission (op. cit.),* pp. 38-39.

The Committee on the 1950 Census of the Americas, at its second session, adopted a recommendation agreeing in its general principles with the remarks of the Population Commission:[3]

"It is recommended that in each census, in addition to the information on urban and rural population needed for national purposes, measures be taken to obtain data on the population of all places or agglomerations of population which are identifiable by quantitative, socio-economic, and other objective criteria, whether or not such places would be urban according to the definitions of the particular country."

The Committee requested its Co-ordinating Board to study the question of tabulations on urban and rural population so that it could be considered at the Committee's next session.

[3] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . .* (*op. cit.*), p. 23.

# XVII. HOUSEHOLDS

*(prepared by the Population Division of the United Nations)*

When the present volume was prepared, the Secretariat of the United Nations had not been able to undertake a study of the types of statistics on households or families obtained in the censuses of different countries, or of the problems of international comparisons of these statistics. This chapter is therefore limited to a presentation of recent observations and recommendations by international agencies on this subject.

The League of Nations Committee of Statistical Experts in 1939 considered the definition of households in connexion with statistics of housing. The Committee adopted the following recommendation on this point:[1]

"General population censuses usually distinguish two types of households:

(*a*) The family household

(*b*) The non-family (or collective household).

"In the present minimum programme of housing statistics, only the family household is used as a basic unit. For reasons of precision, the Committee gives the following definitions of both types:

"*The family household* should comprise the members of a family forming the nucleus of the household, including resident domestic servants. Other persons sharing the rooms occupied by the family or having separate rooms in the dwelling, but taking their meals with the family, should be counted as members of the family household.

"Persons living alone and lodgers occupying rooms of their own and not sharing in the meals of the family should be counted as separate family households.

"It should be noted that, under the above definition, one dwelling may be occupied by several family households, and that the family household is not necessarily identical with the total number of persons living in the same dwelling.

"*Non-family households* should comprise all persons living in groups which are not to be considered as family households, e.g. in hotels, institutions, military barracks, etc.

"In doubtful cases, which may particularly arise in respect of pensions and boarding houses, the borderline between the family household and the non-family household should be drawn at the point where the number of boarders, etc. exceeds the number of the family members, including servants.

"It should be noted that directors or the personnel of institutions, hotels, etc., occupying a separate dwelling should be counted as family households."

The United Nations Population Commission, at its second session, made the following observations on the problem of international standards for the definition of households in population censuses:[2]

"A major problem involved in the definitions of households and comparable groups is the definition of housing units. In addition, the following questions require consideration:

"(*a*) Whether all persons occupying a housing unit are counted as one group, or whether two or more groups may be distinguished within a single housing unit. In the latter case it is necessary to consider standard criteria for the identification of the separate groups.

"(*b*) Whether the group is defined as including all persons present at the time of the enumeration, or as including all persons whose usual place of residence is in the housing unit.

"(*c*) Whether all persons related in any way who live together are counted as one group, or whether subgroups such as a married son and his wife are counted as separate units.

"(*d*) Whether an individual living alone is regarded as a separate unit.

"(*e*) Whether a group of related persons living as lodgers in the homes of others, or in institutions, hotels, etc. is regarded as a separate unit."

At its third session the Population Commission recommended that at least the total numbers of households should be obtained in population

[1] League of Nations. *Housing Statistics* (Studies and Reports on Statistical Methods. No. 5), Geneva, 1939. p. 9.

[2] *Report of the Population Commission* (second session). United Nations document E/571. 29 August 1947, pp. 19-20.

censuses to be taken about 1950, and as a basis for the definition of households called attention to the previous recommendation of the League of Nations Committee of Statistical Experts. The Commission added:[3]

"In addition to the statistics of households, it is useful for many purposes to obtain statistics of groups of related persons within households. In order to provide the materials needed for these tabulations, it is recommended that, wherever feasible, the relationship of each member of the household to the head be recorded on the census schedules."

At its fourth session, the Population Commission made the following suggestions regarding desirable tabulations of statistics on households:[4]

"Three principal types of tabulations can be derived from these data: (*a*) tabulations of individuals classified by household relationships, (*b*) tabulations of heads of households by various characteristics, and (*c*) tabulations of households by household composition.

"(*a*) *Tabulations of individuals by household relationship*

"It is useful to tabulate persons of each sex, by marital status, in the following categories of household relationships: (*a*) heads of 'family households', (*b*) wives of heads, (*c*) sons and daughters of heads, (*d*) other relatives of heads, (*e*) lodgers in 'family households' not related to the head, (*f*) servants in 'family households' not related to the head, (*g*) heads of 'collective households' (lodging houses, hotels, institutions, etc.), (*h*) other members of 'collective households'. From this tabulation can be derived the numbers and average size of 'family households' and 'collective households'; the number and average size of groups of related persons living together in 'family households'; the numbers of 'family households' headed by a husband and wife and by single, widowed, or divorced men or women; and the numbers of married couples who are not heads of households, such as married sons and daughters living with their parents or couples living as lodgers.

"(*b*) *Tabulations of characteristics of heads of households*

"It is desirable that heads of 'family households' be tabulated, for each sex, by marital status in relation to age in at least the following groups: under 25 years, 10-year groups from 25 to 64, 65 years and over.

"Where additional tabulations on this subject are feasible, tabulations showing the numbers of heads of 'family households' classified by occupation, industry, industrial or social status, employment and unemployment, urban-rural residence, place of birth or citizenship, etc., are useful.

"(*c*) *Tabulations of composition of households*

"It is desirable that the numbers of 'family households' be tabulated by at least the following characteristics of households:

"(i) total number of persons in the household (showing the numbers of households of 1 person, 2 persons, 3 persons, etc. up to 9, 10 and over).

"(ii) number of persons in the household who are related to the household head (showing households having heads with no relatives in the household, those with 1 person related to the head, those with 2 such persons, etc. up to 9, and those with 10 or more such persons).

"(iii) number of children, under 18 years of age,[5] in the household who are related to the head (showing households with no children related to the head, those with 1 child, 2 children, etc. up to 9, and those with 10 or more). Wherever feasible, the tabulation should be made separately for households headed by a married man and wife and for other households."

The Co-ordinating Board of the Committee on the 1950 Census of the Americas, at a meeting held in July 1948, made the following statement regarding the definition of households:[6]

"The *Junta* (Co-ordinating Board) recognizes the need for the classification of at least two types of households:

"(1) The *family household* should comprise the members of a family forming the nucleus of a household, including resident domestic servants. Other persons sharing the rooms occupied by the

[3] *Report of the Population Commission* (third session) (*op. cit.*), p. 21.

[4] *Report of the fourth session of the Population Commission (op. cit.)*, pp. 40-41.

[5] The Commission noted: "In some countries, customs or laws relating to dependency may make it desirable to prepare tabulation (iii) for children defined by some age other than 18, in order to throw more light on the distribution of households by the number of dependent children".

[6] "Summary of the first session of the Co-ordinating Board of the Committee on the 1950 Census of the Americas . . .", *Estadística*, vol. VI, No. 21. Dec. 1948. pp. 584-585.

family or having separate rooms in the dwelling should be counted as members of the family household. Persons living alone should be counted as separate family households.

"(2) The non-family households should comprise all persons living in groups which are not to be considered as family households — e.g., in hotels, institutions, military barracks, etc. In doubtful cases, which may arise particularly with respect to boarding or lodging houses, the borderline between the family household and the non-family household should be drawn at some specific number of lodgers, etc., e.g., 10.

"The administrative personnel of institutions, hotels, etc., who occupying a separate dwelling should be counted as family households."

At its second session (February 1949) the Committee on the 1950 Census of the Americas adopted the following decisions regarding household statistics:[7]

"This topic should be based on the relationship to the head of the household (wife, son, servant, boarder, lodger, etc.).

"The collection of data on 'census families' and on 'non-family groups' is recommended. For the respective definitions, account should be taken of the previous recommendations of this Committee [i.e., presumably the remarks of the Co-ordinating Board]."

The form of the tabulations was left to be studied by the Committee's Co-ordinating Board and to be considered at the next session of the Committee.

[7] Inter-American Statistical Institute. *Second session of the Committee on the 1950 Census of the Americas . . .* (*op. cit.*), p. 23.

# XVIII. PHYSICALLY AND MENTALLY HANDICAPPED PERSONS

*(prepared by the Population Division of the United Nations)*

## A. Importance of data on handicaps

The fact that some kind of inquiry on the number and characteristics of persons suffering from various physical and mental handicaps was made in thirty of the fifty-three censuses surveyed testifies to the importance of this information[1] (see table 39).

It is far from certain, however, that a population census can provide sufficiently exact information on physical and mental handicaps to repay the cost. The main difficulty is that the definitions of many common handicaps are highly elastic. Unless specific objective criteria for selecting the individuals to be considered as handicapped are devised and applied uniformly and conscientiously throughout the enumeration, the results will have little practical value. On the other hand, such methods of investigation are expensive; they interfere with other topics of enumeration; and under some census-taking conditions they appear entirely impracticable. Even the most careful methods that could be applied in a population census would not yield precise measures of the incidence of certain important handicaps, the presence or absence of which in many cases could be determined accurately only by a qualified physician.

As stated in chapter I, the Population Commission, at its fourth session, decided not to add the subject of physical and mental handicaps to the list of topics recommended for inclusion in 1950 population censuses.[2]

## B. Explanation of terms

The questions on this subject asked in the censuses of different countries have referred in some cases to "handicaps", in some cases to "defects", and in some cases to "disabilities", "incapacities", or "infirmities". These differences in terminology may be related to differences in the types of information obtained. To avoid confusion, however, the term "handicaps" is used here in referring to all varieties of data on this general subject.

## C. Types of census data on handicapped persons

The kinds of information on handicaps obtained in the recent censuses of different countries are very diverse, but they can be grouped into three main types. The first type, which is the most common, consists of data on persons having a specified handicap, or on those having each of a number of specified handicaps. The second type is similar to the first but has a broader scope; it consists of an enumeration of all handicapped persons with an indication of the nature of the handicap suffered by each. The third type of information refers indiscriminately to all persons having handicaps of a certain general description, with no classification by nature of the handicap. Information of this third type is generally limited to persons with handicaps that prevent or interfere with their earning a living, and is ordinarily obtained in connexion with questions on economic activities, being confined to persons who are reported as not economically active. It is possible also to obtain a fourth type of information, namely, data on inmates of institutions for the handicapped. These data, however, give no measure of the incidence of handicaps among the population.

The types of information on handicaps obtained in each of the fifty-three censuses surveyed for this report are shown in table 39.

### 1. Data on persons having one or more specified handicaps

Questions on the presence of one or more specified handicaps were asked in sixteen[3] of the fifty-

[1] At its fifth session (December 1949) the Social Commission of the Economic and Social Council stressed the importance of international action in the field of rehabilitation of the physically handicapped, including the blind (see United Nations document E/CN.5/L.25).

[2] *Report of the fourth session of the Population Commission (op. cit.)*, pp. 9-10.

[3] Included in this number are three censuses where the questions on the schedules seemed to conflict with the accompanying instructions, one indicating that only certain specified handicaps were to be reported and the other implying that other handicaps also might be reported. See footnotes to table 39.

## Table 39. Types of questions on handicaps asked in recent censuses

(The symbols in the column on population coverage show to what segments of the enumerated population questions on handicaps were addressed. "A" indicates there was no stated limitation of coverage; "B" that coverage was apparently restricted to persons of working age; "C" that the questions were asked in connexion with questions on economic activity. In the remaining columns, "x" indicates that the given type of question was asked; "–" that it was not asked; ". ." that information was not available)

| Country | Census year | Population coverage | Type of information required | | |
|---|---|---|---|---|---|
| | | | Presence of a handicap only | Specified handicaps only | Specification of any handicap |
| **AFRICA:** | | | | | |
| Egypt | 1947 | A | – | – | x |
| Union of South Africa | 1946 | – | – | – | – |
| **AMERICA:** | | | | | |
| Argentina | 1947 | A | – | – | x |
| Brazil | 1940 | A | – | x | – |
| Canada | 1941 | A | – | x | – |
| Chile | 1940 | A | – | x | – |
| Colombia | 1938 | B | x | – | – |
| Costa Rica | 1927 | A | – | x | – |
| Cuba | 1943 | A | – | – | x |
| Dominican Republic | 1935 | A | – | – | x |
| El Salvador | 1930 | B | – | – | x |
| Guatemala | 1940 | A | – | x[1] | – |
| Honduras | 1945 | B | – | – | x |
| Mexico | 1940 | A | – | x[2] | – |
| Nicaragua | 1940 | A | – | x | – |
| Panama | 1940 | B | x | – | – |
| Paraguay | 1936 | A | – | x | – |
| Peru | 1940 | A | –[3] | x[3] | – |
| United States of America | 1940 | C[4] | x[4] | – | – |
| Venezuela | 1941 | A | – | x | – |
| **ASIA:** | | | | | |
| India | 1941 | – | – | – | – |
| Japan | 1940 | – | – | – | – |
| Philippines | 1948 | A | –[3] | x[3,5] | – |
| Syria | 1947 | – | – | – | – |
| Turkey | 1940 | A | – | – | x |
| **EUROPE:** | | | | | |
| Austria | 1934 | – | – | – | – |
| Belgium | 1947 | – | – | – | – |
| Bulgaria | 1946 | A | – | x | – |
| Czechoslovakia | 1947 | C[6] | x | – | – |
| Denmark | 1940 | A | – | x | – |
| Finland | 1940 | .. | .. | .. | .. |
| France | 1946 | – | – | – | – |
| Germany | 1939 | .. | .. | .. | .. |
| Greece | 1940 | A | – | x | – |
| Hungary | 1941 | A | – | – | x |
| Ireland | 1946 | – | – | – | – |
| Italy | 1936 | – | – | – | – |
| Luxembourg | 1947 | – | – | – | – |
| Netherlands | 1947 | – | – | – | – |
| Norway | 1946 | – | – | – | – |
| Poland | 1931 | – | – | – | – |

[1] Disabilities other than those specified were to be indicated as "other".

[2] The question on the census schedule referred to specified handicaps only, although the instructions indicated that the handicaps specified were to be considered as examples only. The handicaps specified in the tabulations, however, differ in only one respect, the addition of the classification of mutism, from those included on the schedule.

[3] Persons unable to work because of a handicap were enumerated as "invalid" without specification of the type of handicap.

[4] This category included persons fourteen years of age and over not working, not having a job and not seeking work, who were unable to work because of permanent disability, chronic illness or old age.

[5] The question on the census schedule reads: "State whether lame, dumb, deaf, blind, invalid, etc.". The instructions, however, read: "Write in this column if the person is blind, deaf-mute, lame, insane, or an invalid".

[6] The question referred to persons not economically active who were incurably disabled and supported by relatives or social funds.

## Table 39. Types of questions on handicaps asked in recent censuses (cont.)

(The symbols in the column on population coverage show to what segments of the enumerated population questions on handicaps were addressed. "A" indicates there was no stated limitation of coverage; "B" that coverage was apparently restricted to persons of working age; "C" that the questions were asked in connection with questions on economic activity. In the remaining columns, "x" indicates that the given type of question was asked; "–" that it was not asked; ".." that information was not available)

| Country | Census year | Population coverage | Type of information required | | |
|---|---|---|---|---|---|
| | | | Presence of a handicap only | Specified handicaps only | Specification of any handicap |
| EUROPE (cont.): | | | | | |
| Portugal | 1940 | A[7] | x[7] | x | – |
| Romania | 1930 | A | – | x[8] | – |
| Spain | 1940 | – | – | – | – |
| Sweden | 1945 | C[9] | – | – | x |
| Switzerland | 1941 | – | – | – | – |
| United Kingdom | | | | | |
| England and Wales | 1931 | C[10] | x[10] | – | – |
| Northern Ireland | 1937 | – | – | – | – |
| Scotland | 1931 | – | – | – | – |
| USSR | 1939 | – | – | – | – |
| Yugoslavia | 1931 | .. | .. | .. | .. |
| OCEANIA: | | | | | |
| Australia | 1947 | – | – | – | – |
| New Zealand | 1945 | – | – | – | – |

[7] Data were secured on the number of persons ten years of age and over permanently and totally disabled for work, without regard to the type of handicap.

[8] The question on the schedule referred to specified handicaps only, but the instructions indicated that the handicaps specified were in the nature of examples only and included several additional types of handicaps as examples. The tabulations, however, specified only those handicaps listed in the census question.

[9] The specific disability was to be noted for persons born between 1881 and 1930 who had no occupation because of disability.

[10] The question referred to: "persons (aged fourteen or over) neither usually following an occupation for payment or profit nor retired from any such occupation . . . [who were] permanently incapacitated by illness".

three censuses. The method used in obtaining these data was either to ask a separate question on each handicap, or to list a number of handicaps and require a statement from each individual as to which, if any of them, was present. Questions of this type were addressed in all cases to the whole population.

In most of these censuses both physical and mental handicaps were investigated, but in four cases (the censuses of Brazil 1940, Canada 1941, Greece 1940 and Romania 1930) only physical handicaps were mentioned. As shown in table 40, blindness was enumerated in sixteen of the censuses, deaf-mutism in fourteen, mental illness in eleven, mental deficiency in six, lameness in six, the loss of limbs in five, deafness in five, paralysis in four, mutism in four, and the presence of a humpback in three. The question in the Bulgarian census (1934) referred to "mental incapacity", which probably included both mental illness and deficiency.

Apart from mental illness and deficiency, the emphasis was upon physical malformations which might be congenital or caused by birth trauma, later accident or acquired disease. As a rule, no attempt was made to enumerate persons suffering from diseases as such, no matter how seriously disabling. In the census of Paraguay (1936), however, persons suffering from goitre and cretins were to be enumerated. Special schedules used for certain areas in Peru (1940) also called for information on goitre and on certain facial ulcers and warts which are prevalent in some parts of that country. It should be noted that some of the physical deformities enumerated may have been due to active diseases of the bones, joints or muscles.

The meaningfulness of the data obtained in this manner depends on the precision of definition of the various handicaps and on the accuracy with which they can be applied in the census enumeration. These aspects of the problem are discussed in parts E and F.

Questions on the presence of specified handicaps have the advantage of giving specific information on those which are considered most important, while eliminating a great deal of less essential and confusing data. By focusing attention on the specified handicaps, they probably produce more accurate enumerations of them than can be obtained by questions in other forms. They do not yield statistics on the total numbers of physically or

## Table 40. Types of handicaps specifically investigated in recent censuses

(This table is limited to censuses which specified all the types of handicaps to be noted for persons about whom information was requested. "x" indicates that the given type of handicap was specified; "–" that it was not specified)

| Country | Census year | Disabilities specified in the enumeration: Blindness | Deafness | Mutism | Deaf-mutism | Loss of one or more limbs | Paralysis | Humpback | Crippledom or lameness | Mental illness | Mental deficiency |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AMERICA: | | | | | | | | | | | |
| Brazil..... | 1940 | x | – | – | x | – | – | – | – | – | – |
| Canada... | 1941 | x | – | – | x | – | – | – | – | – | – |
| Chile..... | 1940 | x | – | x | – | x | x | – | – | x | – |
| Costa Rica | 1927 | x | x | x | – | – | – | – | – | x | – |
| Guatemala | 1940 | x | – | – | x | – | – | – | x | x | x |
| Mexico... | 1940 | x | x | x | x | – | – | x | x | x | x |
| Nicaragua. | 1940 | x | x | – | x | x | x | x | – | x | x |
| Paraguay. | 1936 | x | x | x | x | x | x | – | x | x | x |
| Peru..... | 1940 | x | – | – | x | – | – | – | – | x | – |
| Venezuela. | 1941 | x | – | – | x | x | – | x | x | x | x |
| ASIA: | | | | | | | | | | | |
| Philippines | 1948 | x | – | – | x | – | – | – | x | x | – |
| EUROPE: | | | | | | | | | | | |
| Bulgaria.. | 1946 | x | – | – | x | – | – | – | – | x[1] | x[1] |
| Denmark. | 1940 | x | – | – | x | – | – | – | – | x | x |
| Greece.... | 1940 | x | x | – | x | x | x | – | – | – | – |
| Portugal.. | 1940 | x | – | – | x | – | – | – | – | x | – |
| Romania.. | 1930 | x | – | – | x | – | – | – | x | – | – |

[1] The question referred to mental incapacity.

mentally handicapped persons,[4] but the meaning of such statistics in any case is dubious.

A limitation on the usefulness of the data occurred in the censuses of Peru (1940) and the Philippines (1948), in which one of the handicaps specified was "invalid", which was to be used for all persons unable to work because of a handicap. For such persons, it was apparently not necessary to indicate from which of the specified handicaps they suffered. Thus the enumeration of persons with specified handicaps was limited to those who were not disabled for work.

### 2. Data on all handicapped persons, with an indication of the nature of the handicap

Questions referring to the presence of any handicap and calling for a statement of its nature were asked in nine censuses. In seven of these both physical and mental handicaps were enumerated, but in the census of the Dominican Republic (1934), only physical handicaps were to be reported. The question on the census of Turkey (1940) called for "visible infirmities", a term which may have been intended to include only physical handicaps. The types of handicaps on which information was sought were ordinarily indicated by examples given either as a part of the question or in the accompanying instructions. In general, the types indicated were similar to those listed in section 1, in connexion with questions on specified handicaps.

Questions of this variety ordinarily applied to the whole population. In two censuses, however — El Salvador (1930) and Honduras (1945) — the nature of the questions was such as to imply that it referred only to persons of working age. In the census of Sweden (1945) the question was limited to persons born between 1881 and 1930 who were unable to work. In the Swedish census, the question referred to disabilities. All persons not economically active were asked to indicate the reason for inactivity, and where the reason was disability, to state the nature of the disability.

### 3. Data on all handicapped persons, with no indication of the nature of the handicap

Data of this type were obtained in eight censuses. In four censuses the data were obtained in connexion with questions on economic activities, were limited to persons reported as not economically active and were defined in terms of disability. The usefulness of information obtained in this way is affected not only by the vagueness which inevitably results from the failure to determine the specific handicaps involved, but also by the limitations of their coverage. Persons who are too young to be economically active are not included, even though

[4] In the census of Guatemala (1940) this limitation was removed by adding a category of "all other" disabilities.

they may have handicaps which will presumably prevent them from exercising any gainful occupation when they come of age. No information is obtained on persons with only partially disabling handicaps who are economically active in spite of these handicaps. Moreover, where the information is obtained by asking persons not economically active why they are not employed, some completely disabled persons of working age will be omitted because they do not regard the disability as their principal reason for not being employed. This may happen, for example, in the case of women engaged in housework at home who have handicaps that would prevent their employment at a paid job, or in the case of retired persons and persons of independent means who would be totally unable to work if they wished to do so.

Some of these limitations of coverage were avoided in the 1938 census by Colombia by asking a separate question, independent of the questions on economic activities, to determine whether or not each individual had any handicap which interfered with his earning a living. Thus persons who were economically active in spite of their handicaps were presumably not excluded, but no information was obtained on handicapped children below working age, nor on handicapped adults who would not have been employed even if they had suffered no handicap. In the census of Panama (1940) also, the question on handicaps was independent of that on economic activities, but handicaps were apparently defined as those which prevented the individual from working. Thus the coverage of the data was no broader than it would have been if the questions on handicaps and economic activities had been linked.

The question in the 1931 census of England and Wales called for the identification of "persons (aged fourteen or over) neither usually following an occupation for payment or profit nor retired from any such occupations . . . [who were] permanently incapacitated by illness". Because the term "illness" was used, the results doubtless included some persons suffering from disabling diseases which were not covered by the concepts of handicaps applied in most other censuses. In the 1940 census of the United States, persons fourteen years old and over not economically active were classified into several categories, one of which was "unable to work". This category was defined to include persons unable to work because of permanent disability, chronic illness or old age, and thus was much broader than the physically and mentally handicapped categories commonly enumerated in other censuses. The types of data obtained in the censuses of the United States and England and Wales are valuable for indicating, in a general way, the importance of certain factors limiting the size of the economically active population, but they do not give exact information on physical and mental handicaps.

In the census of Portugal (1940), in addition to a question on specified disabilities which was asked of the whole population, persons of working age were asked if they were permanently and totally disabled for work. In the census of Czechoslovakia (1930), there was a question on the chief source of income of persons without an occupation, in answer to which persons incurably disabled and supported by others were to be reported as a separate category. The data obtained in this way have a very narrow coverage.

In the censuses of Peru (1940) and the Philippines (1948), as previously mentioned, data were obtained on all persons unable to work because of a handicap, by using the term "invalid" among the specified handicaps, to identify such persons.

## D. Supplementary data on causes and duration of handicaps and their disabling effects

In addition to information on the presence and nature of handicaps, data have been obtained in many censuses on the duration and cause of the handicap and on the degree of disability involved. The censuses where such supplementary data were obtained are indicated in table 41.

A question on whether the handicap has been present since birth or was acquired later, constitutes an elementary investigation of the duration of the handicap. Such a question was asked in six of the censuses examined. In addition, one of these censuses (Canada, 1941) called for a statement of the age at which the disability was acquired.

The distinction between handicaps present at birth and those acquired in later life might also be considered as an elementary classification by cause of the handicap, though it is not equivalent to a distinction between truly hereditary handicaps and acquired ones. In table 41, censuses where only this distinction was made are not classified as having called for data on cause of handicap.

In the censuses of Brazil (1940) and Egypt (1947), questions were asked to determine whether the handicap was (*a*) present at birth, (*b*) acquired as a result of an accident in later life, or (*c*) acquired because of illness. This classification has been treated, for table 41, as one by cause of

## Table 41. Additional questions on handicaps asked in recent censuses

(This table is limited to censuses where some questions on handicaps were found. "x" indicates that the given type of question was asked; "–" that it was not asked)

| Country | Census year | Census questions: Duration of handicap | Census questions: Cause of handicap | Census questions: Ability to work |
|---|---|---|---|---|
| AFRICA: | | | | |
| Egypt | 1947 | x | x | – |
| AMERICA: | | | | |
| Argentina | 1947 | – | – | – |
| Brazil | 1940 | x | x | – |
| Canada | 1941 | x | – | – |
| Chile | 1940 | – | – | – |
| Colombia | 1938 | – | – | x[1] |
| Costa Rica | 1927 | – | – | – |
| Cuba | 1943 | – | – | x |
| Dominican Republic | 1935 | – | – | x |
| El Salvador | 1930 | – | – | x[1] |
| Guatemala | 1940 | – | – | – |
| Honduras | 1945 | – | – | x[1] |
| Mexico | 1940 | – | – | x |
| Nicaragua | 1940 | – | – | x |
| Panama | 1940 | – | – | x[1] |
| Paraguay | 1936 | – | – | – |
| Peru | 1940 | x | – | x[2] |
| United States of America | 1940 | – | – | x[3] |
| Venezuela | 1941 | x | – | – |
| ASIA: | | | | |
| Philippines | 1948 | – | x | x[2] |
| Turkey | 1940 | – | – | – |
| EUROPE: | | | | |
| Bulgaria | 1946 | – | – | – |
| Czechoslovakia | 1947 | – | – | x[3] |
| Denmark | 1940 | – | – | – |
| Greece | 1940 | – | – | – |
| Hungary | 1941 | – | – | – |
| Portugal | 1940 | x[4] | x[5] | x[5] |
| Romania | 1930 | – | – | – |
| Sweden | 1945 | – | – | x[3] |
| United Kingdom | | | | |
| England and Wales | 1931 | – | – | x[3] |

[1] This was not a separate question, but it is possible that the enumeration of handicaps was limited to persons unable to work.

[2] This was not a separate question, but one of the types of handicap specified was "invalid" which was to be used for all persons unable to work because of a handicap.

[3] This was not a separate question, but enumeration of handicaps was limited to persons unable to work.

[4] The question on duration of the handicap was asked only of persons having certain specified handicaps.

[5] This question on ability to work was asked only of persons ten years of age and over. Those who were permanently and totally disabled for work were asked if this was due to an "accident of work".

handicap. Other censuses where data on cause were obtained are those of Portugal (1940), where persons totally and permanently incapacitated for work were asked whether or not the disability was due to an "accident of work"; and of the Philippines (1948), where the question was asked, "Was this disability caused by war?"

Health authorities may well require information on the numbers of handicaps caused by various types of illnesses and accidents, but the results of the inquiries noted above, even if they could be accepted as perfectly reliable, would scarcely permit any but the most superficial analysis. Actually, the reports of census informants as to the causes of physical and mental handicaps must in many cases be subject to gross errors.

Some information on the extent of disability involved in the handicap was obtained in seven censuses, not including those where the enumeration of handicapped persons was limited to persons considered unable to work. In the censuses of Mexico (1940) and Nicaragua (1940) handicapped persons who were totally disabled and those who were partially disabled were to be separately identified. In the census of Peru (1940) and the Philippines (1948), "invalid" was one of the terms to be used in describing the nature of the handicap. The instructions for the latter census provided that this term was to be applied to ". . . any person suffering from any physical defect which incapacitates him for manual labor or any labor by which he may earn his living".[5] In the

census of Portugal (1940) all persons suffering from blindness, deaf-mutism, and mental illness were to be reported, and all persons ten years old and over (including the blind, deaf-mutes and mentally ill) were asked whether or not they were totally and permanently unable to work.

There can be no doubt of the fundamental importance of information on the degree of disability resulting from physical and mental handicaps. The data on this subject that can be obtained in population censuses, however, can be used only for analysis in very rough and general terms. Disability is largely a matter of attitudes on the part of the subject, his associates and his potential employers, and these attitudes are subject to change from time to time with changing circumstances. Even under stated conditions as to type of work, rate of pay, hours, etc. the extent of disability resulting from a specific handicap may not easily be determined.

## E. Definitions of handicaps

### 1. General definitions

In those censuses where the questions referred only to specified handicaps there was comparatively little variation in the disabilities specified. Very few of the censuses, however, gave any general explanation of the meaning of "handicap", "disability", "incapacity" or "defect". The failure to define these terms is of most importance in censuses where the questions refer only to the presence of a disability, without calling for a statement of its nature. The lack of definition may affect the totals in those censuses where questions are asked on the presence of any defect and the nature of the defect.

In the large majority of censuses, it was not specified whether or not the handicap must be permanent. Exceptions were the censuses of Nicaragua (1940) and Panama (1940), where it was stated that the handicap must be permanent. The question in the Philippine census (1948) referred only to "present physical disability".[5] In the censuses of Colombia (1938) and El Salvador (1930) it was specified that the disabilities must be "absolute", but in both cases this qualification seemed to refer to inability to work, and not to permanence of the handicap.

The only other general qualification found was in the censuses of Cuba (1943) and Turkey (1940) in which it was stated that any "visible" handicap was to be noted. This qualification apparently applied to mental as well as physical handicaps in the Cuban census.

[5] It is possible that the word "physical" was included in the instructions by error, since the same word was used in referring to the specified handicaps, among which was included insanity.

### 2. Definitions of given types of handicaps

In order to include all definitions of the given types of handicaps which were found in the censuses examined, note has been taken not only of those censuses where specified handicaps were investigated, but also of those where definitions were included in the explanations of some handicaps mentioned only as examples. Some of the countries mentioned in this section, therefore, will not be found in table 40.

(*a*) *Blindness.* Blindness was the disability about which inquiry was most frequently made, and the one most frequently used as an example of the type of disability to which the question referred. Usually, the word "blind" was used without further amplification. In the censuses of Bulgaria (1934), Denmark (1940), Canada (1941), Greece (1940), the Philippines (1948) and Portugal (1940), it was specified that the person must be "totally blind". In the censuses of the Dominican Republic (1935), El Salvador (1930), Hungary (1941) and Turkey (1940), provision was made for separate enumeration of persons "blind in one eye" and persons "totally blind".

In only three censuses was an objective definition of total blindness used. In the census of Denmark (1940) a blind person was defined as one who could not see well enough to walk in an unknown place. In the Bulgarian census (1934), a blind person was one who could not distinguish day from night when using both eyes. In the Canadian census (1941) a supplemental schedule was used, on which were printed special letters and pictures. The instructions read: "Include as blind any person who cannot see to read the letters in the centre block of this schedule at a distance of one foot, with glasses on, if worn. The test in the case of children under ten years of age must be whether they can distinguish or count the fingers of a hand at a distance of twelve feet or identify the images in the centre block at a distance of one foot; the same test should be applied to older persons who are illiterate, the test to be given in good light. Do not include any person who is blind in one eye only."

Since it is not feasible to obtain information on the cause of blindness, in population censuses, no assumptions can be made as to the number of persons blind in one eye whose blindness will

probably become total. It is important, therefore, to distinguish between persons blind in one eye and those totally blind, because problems of education and rehabilitation which arise in connexion with the totally blind are more complex than those in connexion with persons blind in one eye only.

(*b*) *Deafness, mutism and deaf-mutism.* Some reference to one or more of these disabilities was made in twenty-three of the censuses. In the census of Egypt (1947) only deafness was mentioned. The question in the census of Chile (1940) referred only to mutes. In twelve censuses — Brazil (1940), Bulgaria (1934), Canada (1941), Cuba (1943), Denmark (1940), El Salvador (1930), Guatemala (1940), Honduras (1945), Peru (1940), Portugal (1940), Romania (1930) and Venezuela (1941) — the reference was only to deaf-mutes. In the census of Argentina (1947), deafness and mutism were listed separately, while in the censuses of Costa Rica (1927), Greece (1940), Mexico (1940) and Nicaragua (1940) deafness and deaf-mutism were listed separately. In the Philippine census (1948), deafness was mentioned in the question and deaf-mutism in the instructions. In the censuses of the Dominican Republic (1935), Hungary (1941) and Paraguay (1936), each of the three defects was listed separately. Mutism is generally considered as a graver handicap than deafness, as evidenced by the fact that mutism or deaf-mutism was mentioned in twenty-one censuses and deafness in only ten.

Some definition of the kind of inability to speak that was intended to be covered was inherent in the reference to either "mute" or "deaf-mute", especially where both terms were used. It is quite possible, however, that where "mute" alone was used, it was assumed that the persons included under this term would generally be deaf also, since most mute persons are apparently so only because of an inability to hear.

The definition of a deaf-mute as a person both deaf and mute, or a person who could not hear or speak, was given in three of the censuses — Bulgaria (1934), Canada (1941) and the Philippines (1948). No test of ability to hear or speak was proposed in any of these censuses. In the Canadian census (1941), a deaf-mute was defined as a person totally deaf from birth. This definition may have been given in order to cover those persons, who, although deaf from birth, had learned to speak.

The failure to state any objective criterion of deafness is both more understandable and more important than the failure to define mutism. The latter is generally more obvious than the former. The many gradations of poor hearing make the term "deaf" quite vague. The term may be understood to mean persons who are totally unable to hear, or it may be applied to all persons having some difficulty in hearing.

(*c*) *Other physical handicaps.* Although references were often made to amputees, hump-backs, and lame, crippled or paralysed persons, definitions of any of these terms were found in only two censuses. In the census of Greece (1940), amputees were defined as persons who had one leg amputated above the knee or one arm above the elbow. Paralysed persons were defined as those would could not move or use a hand or a foot. In the census of Hungary (1941) detailed descriptions were given of the types and degrees of physical abnormalities which were to be noted; for instance, lack of or a deficiency in any extremity was to be reported, but abnormality of a hand only if it seriously impeded the use of that hand; pronounced deformation of the spine or of an extremity was to be reported if it was visible even when the person was fully clothed. Such definitions, although they do not approach medical exactness, seem at least to offer reasonably clear guidance to persons who supply census information. The opportunities of securing usable data on the more serious deformities would be increased by the general use of some such explanations.

(*d*) *Mental handicaps.* Some reference to mental handicaps was made in twenty of the censuses in which a question on handicaps was included. In the censuses of Colombia (1938) and Panama (1940), no further qualifications of the term were given, so that there was no way of determining whether or not it was meant to include both mental illness and mental deficiency.

In the Bulgarian census (1934), information was requested on persons who could not realize the significance of their actions, whether or not they had been declared to be irresponsible by a court. Although this may be an adequate definition of mental incompetence, it gives no indication of the nature of the mental ailment.

In seventeen censuses a distinction was apparently made between mental illness and mental deficiency, either by asking for reports on one but not the other, or by inquiring about each separately (by direct question or by example). This apparent intention to distinguish between the two may not, however, have succeeded. It has been assumed here, that words such as "crazy" or "insane" were intended to refer only to the men-

tally ill. In popular terminology however these expressions are often applied also to mental defectives.

In the census of Hungary (1941) it was explained that mental deficiency, as opposed to mental illness, must have existed since birth. In the census of Denmark (1940) a feebleminded person was defined as one who, from birth or early infancy, had shown too little intelligence to be able to earn a living for himself. An insane person was defined as one who, after reaching school age, had contracted a mental disturbance which prevented him from carrying on work in a normal way.

No matter how exactly mental illness or disability may be defined, inaccuracies in reporting will tend to be much greater for these than for physical disabilities, because of the stigma often attached to them.

## F. The problem of incomplete enumeration

Because of the technical nature of the data sought and the natural hesitation to admit handicaps, a considerable amount of under-enumeration may be expected in census statistics of the physically and mentally handicaped. This under-enumeration may be somewhat less in those censuses where the questions refer only to a few specified handicaps than where the presence of any handicap and its nature are to be reported. As for data on the presence of any handicap without indication of its nature, their meaning is too uncertain to permit much speculation as to whether persons with handicaps have been under-enumerated or over-enumerated.

Where the census is taken by enumerators recording the information for all members of each household as given by any household member who is present at the time of enumeration, two special factors tending toward under-enumeration are encountered. First, because the physically and mentally handicapped are a small minority of the population, the enumerators may assume that no such persons will be found in a given household, unless the handicapped individuals are present at the interview and their handicaps are evident. Second, the enumerators may hesitate to inquire carefully as to the presence of any such handicaps, for fear of embarrassing or antagonizing the respondent. The respondents, on the other hand, may hesitate to admit to the enumerators that they, or other members of their families, have handicaps which they may consider shameful or pitiful.

It is possible that enumeration of the handicapped in general may be more nearly complete where the census schedules are filled out by each householder for the members of his household. In this case, however, certain readily apparent handicaps, which would easily be noted by an enumerator on his visit, may escape reporting.

One of the steps that can be taken to improve the completeness of reporting is to provide reasonably clear explanations of the nature of the handicaps that are to be reported. As already stated, however, it is not feasible to apply in a population census any very exact definitions of certain handicaps. It is also desirable to limit the enumeration to the smallest number of specific handicaps that is commensurate with the important needs for information. A necessary measure where enumerators are used is to give them in their training some instruction in the methods of inquiry that are required to ensure reasonably full reporting.

# BIBLIOGRAPHY

The following pages present citations to the official census publications of the countries which were included in this study. For a number of countries, including Costa Rica, Dominican Republic, Nicaragua, Greece, Hungary, Spain and Yugoslavia, additional information was obtained from replies to the demographic questionnaires which were addressed to the various Governments by the Statistical Office of the United Nations in connexion with the collection of data for the *Demographic Yearbook*. Information on the subjects covered, the types of questions asked and the definitions used in each census was often obtained from official census schedules, instructions to enumerators, and similar documents used in the various countries, which may not be included in the census publications but which have been made available to the United Nations by the Governments.

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## AFRICA

### EGYPT

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*Statistical and Census Department*

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### UNION OF SOUTH AFRICA

*Census of 1936*

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IV. Languages. Official and home languages spoken by the European, Asiatic and Coloured population. 1938.

V. Birthplaces, period of residence and nationality of the European, Asiatic and Coloured population. 1942.

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CLS Sixth and Seventh International Conferences of Labour Statisticians;
COTA Committee on the 1950 Census of the Americas (Inter-American Statistical Institute);
CSE League of Nations Committee of Statistical Experts;
PC United Nations Population Commission;
SC United Nations Statistical Commission.


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