

International Standard Classification of Occupations

ISCO-88

INTRODUCTION

The revised International Standard Classification of Occupations (ISCO-88) provides a system for classifying and aggregating occupational information obtained by means of population censuses and other statistical surveys, as well as from administrative records.

ISCO-88 is a revision of the International Standard Classification of Occupations 1968, which it supersedes. The revision was carried out in line with the recommendations and decisions of the Thirteenth and Fourteenth International Conferences of Labour Statisticians, held at the International Labour Office, Geneva, in 1982 and 1987. The Fourteenth ICLS endorsed ISCO-88 and recommended that: "In collecting and processing statistics classified by occupation, ... each country should ensure the possibility of conversion into the ISCO-88 system, to facilitate international use of occupational information." Thus, ISCO-88 is one of the standards of international labour statistics.

MAIN OBJECTIVES

ISCO-88 has three main aims. The first is to facilitate international communication about occupations by supplying national statisticians with a tool to make national occupational data available internationally.

The second is to make it possible for international occupational data to be produced in a form which can be useful for research as well as for specific decision-making and action-oriented activities, such as those connected with international migration or job placement.

The third aim is to serve as a model for countries developing or revising their national occupational classifications. It should be emphasised that, while serving as a model, ISCO-88 is not intended to replace any existing national classification of occupations, as the occupational classifications of individual countries should fully reflect the structure of the national labour market.¹ However, countries whose occupational classifications are already aligned to ISCO-88 in concept and structure will find it easier to develop necessary procedures for making their occupational statistics internationally comparable.

It should also be noted that, in many cases, countries will wish to develop in their national classifications finer structural and definition details than those contained in ISCO-88. In certain cases they may wish to include coded information on Job Content

¹ The ILO Bureau of Statistics is at present preparing a manual on how to develop and use national occupational classifications.

Factors and detailed occupational descriptions, which are of particular interest for wage settlements, vocational guidance and training, placement services, or analysis of occupation-specific morbidity and mortality.

CONCEPTUAL FRAMEWORK

The framework necessary for designing and constructing ISCO-88 has been based on two main concepts: the concept of the kind of work performed or *job*, and the concept of *skill*.

Job – defined as a set of tasks and duties executed, or meant to be executed, by one person – is the *statistical unit* classified by ISCO-88. A set of jobs whose main tasks and duties are characterised by a high degree of similarity constitutes an *occupation*. Persons are classified by occupation through their relationship to a past, present or future job.

Skill – defined as the ability to carry out the tasks and duties of a given job – has, for the purposes of ISCO-88 the two following dimensions:

- (a) *Skill level* – which is a function of the complexity and range of the tasks and duties involved; and
- (b) *Skill specialisation* – defined by the field of knowledge required, the tools and machinery used, the materials worked on or with, as well as the kinds of goods and services produced.

On the basis of the skill concept thus defined, ISCO-88 occupational groups were delineated and further aggregated.

Bearing in mind the international character of the classification, only four broad skill levels were defined. They were given operational definitions in terms of the educational categories and levels which appear in the *International Standard Classification of Education* (ISCED), COM/ST/ISCED (Paris, Unesco, 1976).

The use of ISCED categories to define the four skill levels does not imply that the skills necessary to perform the tasks and duties of a given job can be acquired only through formal education. The skills may be, and often are, acquired through informal training and experience. In addition, it should be emphasised that the focus in ISCO-88 is on the skills required to carry out the tasks and duties of an occupation – and not on whether a worker having a particular occupation is more or less skilled than another worker in the same occupation.

Therefore, as a rule, the following operational definitions of the four ISCO-88 skill levels apply where the necessary occupational skills are acquired through formal education or vocational training.

- (a) *The first ISCO skill level* was defined with reference to ISCED category 1, comprising primary education which generally begins at the age of 5, 6 or 7 and lasts about five years.

- (b) *The second ISCO skill level* was defined with reference to ISCED categories 2 and 3, comprising first and second stages of secondary education. The first stage begins at the age of 11 or 12 and lasts about three years, while the second stage begins at the age of 14 or 15 and also lasts about three years. A period of on-the-job training and experience may be necessary, sometimes formalised in apprenticeships. This period may supplement the formal training or replace it partly or, in some cases, wholly.
- (c) *The third ISCO skill level* was defined with reference to ISCED category 5, (category 4 in ISCED has been deliberately left without content) comprising education which begins at the age of 17 or 18, lasts about four years, and leads to an award not equivalent to a first university degree.
- (d) *The fourth ISCO skill level* was defined with reference to ISCED categories 6 and 7, comprising education which also begins at the age of 17 or 18, lasts about three, four or more years, and leads to a university or postgraduate university degree, or the equivalent.

Unavoidably, some subjective judgement was involved in determining the skill levels of occupations, or occupational groups, in the structure of ISCO-88. Many national classifications and national circumstances have been examined to gather data for this purpose, and it is hoped that the decisions made reflect prevailing situations and main trends.

DESIGN AND STRUCTURE

The conceptual approach adopted for ISCO-88 resulted in a pyramid whose hierarchical structure consists of ten major groups at the top level of aggregation, subdivided into 28 sub-major groups, 116 minor groups, and 390 unit groups.

Table 1. ISCO-88 major groups with number of sub-groups and skill levels

Major groups	Sub-major groups	Minor groups	Unit groups	ISCO skill level
1. Legislators, senior officials and managers	3	8	33	—
2. Professionals	4	18	55	4th
3. Technicians and associate professionals	4	21	73	3rd
4. Clerks	2	7	23	2nd
5. Service workers and shop and market sales workers	2	9	23	2nd
6. Skilled agricultural and fishery workers	2	6	17	2nd
7. Craft and related trades workers	4	16	70	2nd
8. Plant and machine operators and assemblers	3	20	70	2nd
9. Elementary occupations	3	10	25	1st
0. Armed forces	1	1	1	—
Totals	28	116	390	

As can be seen from the above table, out of the ten major groups, eight have been linked to the four ISCO skill levels – which, as mentioned earlier, were given operational

definitions by reference to the educational categories and levels of the International Standard Classification of Education. The concept of skill level was not applied in the case of Major group 1, *Legislators, senior officials and managers*, and Major group 0, *Armed forces*. The reason for this was that, based on information from national sources, skills for executing tasks and duties of occupations belonging to each of these two major groups vary to such an extent that it would be impossible to link them with any of the four broad ISCO-88 skill levels.

Further sub-divisions of ISCO-88 occupational groups, providing successively finer detail, were carried out on the basis of skill specialisation, defined by reference to the field of knowledge required, the tools and machinery used, the materials worked on or with, as well as the kinds of goods and services produced.

The 28 sub-major groups, at the second ISCO-88 level of aggregation, represent an innovation in the sense that all of the preceding international occupational classifications have had a substantial numerical gap in the number of groups at their first and second levels of aggregation. For instance, in the case of ISCO-68 there were eight groups at the first level of aggregation followed by 83 groups at the second level. This presented an imbalance in the number of groups needed, on the one hand, for the presentation of the occupational structure in broad terms and for cross-classifying with variables such as industry or detailed age groups and, on the other hand, for presenting the occupational structure without cross-classifying, or when cross-classifying with variables such as sex or broad age groups.

The 390 unit groups, representing the most detailed level of the ISCO-88 structure, in most cases consist of more than one occupation. In national circumstances, the number and delineation between occupations will, to a large extent, depend on the size of the economy and the level of economic development, the level and type of technology, work organisation and historical circumstances. For this reason detailed descriptions of the occupations belonging to each of the 390 unit groups have not been developed for ISCO-88. However, a selection is being made among the 1,506 detailed occupational descriptions which were included in ISCO-68. Those found to be still relevant will be published in a companion volume to ISCO-88.

For each of the groups at the four levels of aggregation of ISCO-88 a code number, a title and a brief description of the content is provided. In the case of the unit groups, the main tasks of the occupations belonging to each of them are briefly described and some of the relevant occupational titles are listed as examples. In most cases examples are also given of the occupations which, although related in some way to those belonging to the unit group in question, are classified elsewhere. This has been done in order to clarify possible ambiguities and to highlight the ISCO-88 conceptual approach and characteristics of its structure.

Detailed descriptions of the occupational groups at the four levels of aggregation are followed by the ISCO-88 index of occupational titles. Three separate listings of the index are provided. The first is according to ISCO-88 numerical order, the second by ISCO-68 numerical order, and the third is an alphabetical list of occupational titles. The index reflects the results of a recoding and recasting of the ISCO-68 "Expanded alphabetical list of titles". For further details the reader is referred to the "Notes on the ISCO-88 index of occupational titles" which precede the index.

While revising the index, every effort was made to take into consideration the conceptual and structural differences between the two classifications, and, where possible, to make appropriate modifications, including some new index entries. However, some of the shortcomings of the ISCO-68 index – such as unevenness of detail when naming specialisations relating to a given generic occupational title – have been carried over to the present index. The user should bear in mind that the main aim of the present index is to indicate the content of each group within the ISCO-88 structure, and that the index makes no claim to being exhaustive. The Bureau of Statistics of the ILO intends, by using the latest national sources of occupational titles, to compile an extended and updated version of the ISCO-88 index for later publication. It is hoped that any shortcomings in the present index will be dealt with satisfactorily in the later version.

SUMMARY OF MAJOR GROUPS

The following briefly outlines ISCO-88 major groups, and is meant to facilitate the interpretation of the classification. The information given here should not be regarded as a substitute for the more detailed descriptions of occupational groups which the volume contains.

1. Legislators, senior officials and managers

This major group includes occupations whose main tasks consist of determining and formulating government policies, as well as laws and public regulations, overseeing their implementation, representing governments and acting on their behalf, or planning, directing and co-ordinating the policies and activities of enterprises and organisations, or

departments. Reference to skill level has not been made in defining the scope of this major group, which has been divided into three sub-major groups, eight minor groups and 33 unit groups, reflecting differences in tasks associated with different areas of authority and different types of enterprises and organisations.

2. Professionals

This major group includes occupations whose main tasks require a high level of professional knowledge and experience in the fields of physical and life sciences, or social sciences and humanities. The main tasks consist of increasing the existing stock of knowledge, applying scientific and artistic concepts and theories to the solution of

problems, and teaching about the foregoing in a systematic manner. Most occupations in this major group require skills at the fourth ISCO skill level. This major group has been divided into four sub-major groups, 18 minor groups and 55 unit groups, reflecting differences in tasks associated with different fields of knowledge and specialisation.

3. Technicians and associate professionals

This major group includes occupations whose main tasks require technical knowledge and experience in one or more fields of physical and life sciences, or social sciences and humanities. The main tasks consist of carrying out *technical work* connected with the application of concepts and operational methods in the above-mentioned fields, and

in teaching at certain educational levels. Most occupations in this major group require skills at the third ISCO skill level. This major group has been divided into four sub-major groups, 21 minor groups and 73 unit groups, reflecting differences in tasks associated with different fields of knowledge and specialisation.

4. Clerks

This major group includes occupations whose main tasks require the knowledge and experience necessary to organise, store, compute and retrieve information. The main tasks consist of performing secretarial duties, operating word processors and other office machines, recording and computing numerical data, and performing a number of customer-oriented clerical duties, mostly in

connection with mail services, money-handling operations and appointments. Most occupations in this major group require skills at the second ISCO skill level. This major group has been divided into two sub-major groups, seven minor groups and 23 unit groups, reflecting differences in tasks associated with different areas of specialisation.

5. Service workers and shop and market sales workers

This major group includes occupations whose main tasks require the knowledge and experience necessary to provide personal and protective services, and to sell goods in shops or at markets. The main tasks consist of providing services related to travel, house-keeping, catering, personal care, protection of individuals and property, and to maintain-

ing law and order, or selling goods in shops or at markets. Most occupations in this major group require skills at the second ISCO skill level. This major group has been divided into two sub-major groups, nine minor groups and 23 unit groups, reflecting differences in tasks associated with different areas of specialisation.

6. Skilled agricultural and fishery workers

This major group includes occupations whose tasks require the knowledge and experience necessary to produce farm, forestry and fishery products. The main tasks consist of growing crops, breeding or hunting animals, catching or cultivating fish, conserving and exploiting forests and, especially in the case of market-oriented agricultural and fishery workers, selling products to purchasers, marketing organisations or at mar-

kets. Most occupations in this major group require skills at the second ISCO skill level. This major group has been divided into two sub-major groups, six minor groups and 17 unit groups, reflecting differences in tasks associated with different areas of specialisation, and differences between market-oriented and subsistence agricultural and fishery workers.

7. Craft and related trades workers

This major group includes occupations whose tasks require the knowledge and experience of skilled trades or handicrafts which, among other things, involves an

understanding of materials and tools to be used, as well as of all stages of the production process, including the characteristics and the intended use of the final product. The

main tasks consist of extracting raw materials, constructing buildings and other structures and making various products as well as handicraft goods. Most occupations in this major group require skills at the second ISCO

skill level. This major group has been divided into four sub-major groups, 16 minor groups and 70 unit groups, reflecting differences in tasks associated with different areas of specialisation.

8. Plant and machine operators and assemblers

This major group includes occupations whose main tasks require the knowledge and experience necessary to operate and monitor large scale, and often highly automated, industrial machinery and equipment. The main tasks consist of operating and monitoring mining, processing and production machinery and equipment, as well as driving vehicles and driving and operating mobile

plant, or assembling products from component parts. Most occupations in this major group require skills at the second ISCO skill level. This major group has been divided into three sub-major groups, 20 minor groups and 70 unit groups, reflecting differences in tasks associated with different areas of specialisation.

9. Elementary occupations

This major group covers occupations which require the knowledge and experience necessary to perform mostly simple and routine tasks, involving the use of hand-held tools and in some cases considerable physical effort, and, with few exceptions, only limited personal initiative or judgement. The main tasks consist of selling goods in streets, doorkeeping and property watching, as well

as cleaning, washing, pressing, and working as labourers in the fields of mining, agriculture and fishing, construction and manufacturing. Most occupations in this major group require skills at the first ISCO skill level. This major group has been divided into three sub-major groups, ten minor groups and 25 unit groups, reflecting differences in tasks associated with different areas of work.

0. Armed forces

Members of the armed forces are those personnel who are currently serving in the armed forces, including auxiliary services, whether on a voluntary or compulsory basis, and who are not free to accept civilian employment. Included are regular members of the army, navy, air force and other military services, as well as conscripts enrolled for military training or other service for a specified period, depending on national requirements. Excluded are persons in civilian employment of government establishments

concerned with defence issues; police (other than military police); customs inspectors and members of border or other armed civilian services; persons who have been temporarily withdrawn from civilian life for a short period of military training or retraining, according to national requirements, and members of military reserves not currently on active service. Reference to a skill level has not been used in defining the scope of this major group.

APPROACHES TO SOME SPECIFIC ISSUES

National differences in educational requirements

However broad the skill levels of an international occupational classification may be, the presumed skill level of a particular occupation, or a group of occupations, may not correspond exactly to that determined by the educational requirements of some countries. On the basis of the information received in the course of work on ISCO-88, as well as on the basis of the discussions held by the Fourteenth International Conference of Labour Statisticians, it became apparent that differences in formal educational requirements were most prominent in the cases of some of the *teaching, health and social services occupations*. In some countries it is necessary to have a university degree in order to be able to practise these occupations, while in other countries lower-level educational certificates are considered sufficient. In order to accommodate these differences, parallel occupational groups were created in ISCO-88 Major groups 2 and 3, – *Professionals and Technicians and associate professionals*, respectively. The codes and titles of these groups are as follows:

Major group 2, Professionals

- 2230 Nursing and midwifery professionals
- 2331 Primary education teaching professionals

- 2332 Pre-primary education teaching professionals
- 2340 Special education teaching professionals
- 2446 Social work professionals

Major group 3, Technicians and associate professionals

- 3231 Nursing associate professionals
- 3232 Midwifery associate professionals
- 3310 Primary education teaching associate professionals
- 3320 Pre-primary education teaching associate professionals
- 3330 Special education teaching associate professionals
- 3460 Social work associate professionals

This means that, in accordance with educational requirements, when grouping national occupational data according to the ISCO-88 structure, countries will be able to classify nursing, midwifery, teaching and social services occupations either into Major group 2, *Professionals*, or into Major group 3, *Technicians and associate professionals*, as appropriate.

Occupations with a broad range of tasks and duties

Differences in the range of tasks and duties belonging to the *same occupation* are, at national level, mostly determined by the size of the establishment. For instance, in a small establishment typing and filing may be combined with the duties of a receptionist into one single job, while in a bigger enterprise they may constitute two or three separate jobs. At international level, although it is acknowledged that factors such as tradition or collective agreements may play an important part, the existence of these differences is mostly linked to the level of economic development, with its simple patterns of labour division.

Occupational classifications – national as well as international – define occupations, and occupational groups, by reference to the most common combinations of tasks and duties, and therefore face a problem when, in the case of some occupations, the range of tasks and duties does not correspond to those specified in the classification.

In such cases ISCO-88 suggests application of the following rules:

- (a) In cases where the tasks and duties performed require skills usually obtained through different levels of training and experience, jobs should be classified in

accordance with those tasks and duties which require the *highest level of skills*. For instance a job which consists of driving a van and delivering goods should be classified in Unit group 8322, *Car, taxi and van drivers*.

- (b) In cases where the tasks and duties are connected with different stages of the production and distribution of goods process, tasks and duties related to the *production stage* should take priority over associated ones, such as those

related to the sales and marketing of the same goods, their transportation or the management of the production process – unless one of these tasks and duties predominates. For example, a baker who bakes bread, makes pastries and sells these products should not be classified as a sales person, but as a baker, which means, in ISCO-88 terms, Unit group 7412, *Bakers, pastry-cooks and confectionery makers*.

Technology and skills

Developments in technology, particularly those which led to mass-production methods, have had a profound effect on the skills that are needed according to whether a product is made by a craft worker or manufactured through the application of one of the latest techniques. For instance, skills required to perform the tasks of a smith or a tailor are different from those required to perform the tasks of a machine-operator in an enterprise engaged in metalworking or in the mass-production of textile garments.

Broadly speaking, a smith or a tailor has to know the materials, tools, sequence of tasks performed, and the characteristics and intended use of the final product. A machine-operator, on the other hand, has to know how to use very sophisticated machinery and equipment, how to recognise and signal, or

eliminate, problems before they start to affect output in a serious way, or how to react if something goes wrong with the machine itself. In addition, a machine-operator should have a level of skill and breadth of training which would allow retraining costs to be minimal when product specifications change or when new technology is introduced.

In ISCO-88 the delineation between Major groups 7 and 8 reflects these differences in the type of skills required. Major group 7, *Craft and related trades workers*, classifies craft-oriented and artisanal occupations – such as mason, carpenter, mechanic, baker, potter, decorative painter, wood-carver – while Major group 8, *Plant and machine operators and assemblers*, classifies machine-oriented occupations.

Coexistence of two agricultural sectors

Inequalities in the economic development of different countries, or regions within the same country, have resulted in the coexistence of two agricultural sectors, of which one is characterised by low-skilled subsistence farming while the other often has a highly automated production process and, as a result, achieves high productivity with relatively few workers. These differences are reflected in ISCO-88 through a distinction made in Major group 6, *Skilled agricultural*

and fishery workers, between, on the one hand, skilled market-oriented farmers and agricultural workers, and, on the other, those who are engaged in subsistence farming. The aim of this distinction is to reflect important skill differences existing in the two sectors, as well as to improve the quality of the data needed to undertake analyses and make decisions concerning rural development.

Occupations and women

In most countries the number and proportion of women in the labour force has increased over the past two decades, and it

is highly probable that this trend will continue. However, this positive numerical increase has not been accompanied by an

equal distribution of various jobs between men and women, nor by equal earnings. Women workers tend to cluster in lower-skilled jobs, and their wages in most sectors lag behind those of men performing the same tasks and duties.

Occupation is one of the main variables which denotes the situation of women in the labour force. It is therefore important that occupational categories of a given occupa-

tional classification be delineated in a way which will not obscure but promote detail and clarity of information on sex composition of jobs. In ISCO-88 attention is paid to this issue, especially in the case of groups where occupations characterised by the predominance of women workers are classified, such as Major group 4, *Clerks*, Major group 5, *Service workers and shop and market sales workers*, and Major group 9, *Elementary occupations*.

Occupations in the informal sector

The need to identify occupations in the informal sector was taken into consideration in the structure of ISCO-88, especially in the delineation of the unit groups. The following unit groups may be particularly useful for classifying informal sector occupations: Unit groups 7331 and 7332 entitled *Handicraft*

workers in wood and related materials, and *Handicraft workers in textile, leather and related materials*, respectively, as well as Unit groups 9111, *Street food vendors*, 9112, *Street vendors, non-food products*, and 9120, *Shoe cleaning and other street services elementary occupations*.

Occupations and status in employment

ISCO-88, unlike its predecessor, does not take into consideration whether a worker is a working proprietor or not, as this and similar attributes of the labour force, such as being an employer or an employee etc., reflect sta-

tus in employment and not the tasks and duties of the worker, and therefore should be dealt with in a separate *Status in employment classification*.

NOTES ON SOME PARTICULAR OCCUPATIONS

Technical occupations are classified separately from professional occupations in Major group 3, *Technicians and associate professionals*. Thus, *Technician, biology* is classified in Unit group 3211, *Life science technicians*, while *Technician, engineering/mining* is classified in Unit group 3117, *Mining and metallurgical technicians*.

Quality inspecting occupations, whose main tasks are to ensure compliance with the quality standards and specifications of manufacturers, are classified in Unit group 3152, *Safety, health and quality inspectors*. On the other hand, testers and checkers, whose main tasks consist of a mechanical inspection of the goods produced which, in most cases, amounts to simple visual checking, are classified with workers producing these goods.

Supervising occupations, as well as those of a foreman/woman, which are mainly concerned with the control of the professional or technical quality of the work done, are classified together with the jobs whose tasks they supervise. However, if the main tasks

and duties of a job consist of planning, organising, controlling and directing the daily work activities of a group of subordinate workers, the occupation should be considered as a managerial occupation and classified in the appropriate group belonging either to Sub-major group 12 or 13, *Corporate managers* or *General managers*, respectively.

Coaching occupations primarily concerned with *on-the-job training* by continuous observation, assessment and guidance are classified with the occupations whose workers they instruct, in particular trade, craft or machine-operating tasks.

Teaching occupations mainly concerned with giving *private lessons* are classified with other teachers at the corresponding institutional level. It should be noted that driving, flying, sailing and related instructors are classified in Unit group 3340, *Other teaching associate professionals*.

Occupations concerned with *research and development* are classified according to the field of specialisation in Major group 2, *Professionals*. When a researcher is also exercising a teaching profession, he or she should be classified as a teacher, at the appropriate educational level.

Apprentices and trainees are classified according to the tasks and duties actually performed, and not, as is the case with some occupational classifications, according to their future occupation.

MAPPING NATIONAL OCCUPATIONAL CLASSIFICATIONS INTO ISCO-88

Comparisons of occupations among countries or regions demand that national occupational statistics be converted to international standards. This is usually achieved by mapping the national occupational categories into a common international classification system, ISCO-88. International comparability of occupational statistics can also be achieved by using the international classification system to recode the original responses elicited by the occupational questions in censuses or other surveys. However, this latter method normally cannot be used because of the high costs involved.

Mapping one classification into another is equivalent to coding each group in the first classification to the most appropriate group in the other. The validity of the mapping is in inverse proportion to the aggregated level at which the mapping is done. That is why it is recommended that mapping should be carried out at the lowest level of aggregation of each of the two classifications, i.e. national occupational classification (NOC) and ISCO-88.

In the process of mapping, the three following situations are those most frequently encountered:

- (a) The NOC group, at the lowest level of aggregation, belongs unambiguously to one of the ISCO-88 unit groups. This is, of course, the simplest situation and, if the NOC, both conceptually and structurally, has a base similar to ISCO-88, it is likely to be the most usual situation.

- (b) The NOC group, at the lowest level of aggregation, differs in occupational content from the most relevant ISCO-88 unit group, but the difference in the content does not prevent the NOC group from being validly mapped into an ISCO-88 group at one of the higher levels of aggregation. For example: NOC classifies glass engravers and etchers together with glass and ceramics decorative painters in the *same* lowest level aggregation group, while ISCO-88 classifies these occupations in *two* unit groups, but in both classifications subsequent aggregation of these occupations is carried out in the same manner.
- (c) The way of grouping certain occupations is different in NOC from that applied in ISCO-88, and, as a result, an existing NOC group cannot validly be mapped into any of the ISCO-88 groups. For example: at the lowest aggregation level, NOC classifies farmers, farm managers and farm labourers in one single group, while ISCO-88 classifies these occupations in three separate unit groups belonging to three different minor, sub-major and major groups.

If internationally available occupational statistics have to be produced at the minor group aggregation level of ISCO-88, or any of the higher ones, then no problem arises in the situation described under (b) above. If the information has to be produced at the level corresponding to ISCO-88 unit groups, in that case, as well as in the situation described under (c) above, *the following rules should be applied in order of priority as they are described:*

The *numerical dominance rule*, according to which, on the basis of the additional information available from economic and other statistics, or from sectoral experts, estimates or judgement should be made concerning the relative importance of the occupations classified in the NOC group. If approximately 80 per cent or more of the jobs classified in the NOC group belong to a particular ISCO-88 group, then the whole NOC group should be classified in this ISCO-88 group.

The *skill level rule*, according to which the occupational mix of the NOC group should be analysed on the basis of the ISCO-88 skill-level concept. The mapping into an ISCO-88 group should then be carried out on the basis of the occupations found to be the most skilled.

The *production rule*, according to which, for the purposes of mapping into ISCO-88, in the occupational mix of a NOC group production occupations will have priority over sales or managerial occupations.