

Employment by occupation

Introduction

This indicator provides information on the tendency for men and women to work in different occupations, shedding light on the extent to which employed persons benefit from different opportunities and treatment in their work life.

Having detailed statistics on employment by occupation also disaggregated by sex allows for the calculation of the proportion of women in managerial positions, which was included as one of the indicators proposed to measure progress towards the achievement of the Sustainable Development Goals (SDG), under Goal 5 (Achieve gender equality and empower all women and girls).¹

ILOSTAT contains statistics from national sources on employment by occupation, also disaggregated by sex, available using both aggregate and detailed categories of occupation. ILOSTAT also includes ILO estimates of employment by occupation by sex, which contain both nationally reported and imputed data, and where all estimates are national, meaning there are no geographic limitations in coverage. ILO estimates of employment by occupation are presented only using broad categories of occupation: skill level 1 (low), skill level 2 (medium) and skill levels 3 and 4 (high).²

Concepts and definitions

Employment comprises all persons of working age who during a specified brief period, such as one week or one day, were in the following categories: a) paid employment (whether at work or with a job but not at work); or b) self-employment (whether at work or with an enterprise but not at work).³

The working-age population is the population above the legal working age, but for statistical purposes it comprises all persons above a specified minimum age threshold for which an inquiry on economic activity is made. To favour international comparability, the working-age population is often defined as all persons aged 15 and older, but this may vary from country to country based on national laws and practices (some countries also use an upper age limit).

Information on occupation provides a description of the set of tasks and duties which are carried out by, or can be assigned to, one person. Employed persons are classified by occupations through their relationship to a present job.⁴

Data presented by occupation is based on the International Standard Classification of Occupation (ISCO). The development of the ISCO goes back many decades and has always been closely connected with the work of the International Conference of Labour Statisticians, which meets under the auspices of the International Labour Organization. The original version of the ISCO was published in 1958 (ISCO-58) and it has been revised three times since then: in 1968 (ISCO-68), in 1988 (ISCO-88) and in 2008 (ISCO-08).⁵

¹ Proposed SDG indicator 5.5.2 refers to the proportion of women in managerial positions. For the official list of proposed SDG indicators, see: <http://unstats.un.org/sdgs/indicators/indicators-list/>

² For further information on the methodology used to produce harmonized estimates, see Bourmpoula, V., Kapsos, S. and Pasteels, J.M.: "ILO labour force estimates and projections: 1990-2050 (2015 edition)" (ILO, Geneva, 2015). <http://www.ilo.org/ilostat-files/Documents/LFEP%20Methodology%202015.pdf>

³ Resolution concerning statistics of work, employment and labour underutilization, adopted by the 19th International Conference of Labour Statisticians, Geneva, October 2013; http://www.ilo.org/global/statistics-and-databases/standards-and-guidelines/resolutions-adopted-by-international-conferences-of-labour-statisticians/WCMS_230304/lang-en/index.htm

⁴ Resolution concerning updating the International Standard Classification of Occupations, adopted by the Tripartite Meeting of Experts on Labour Statistics on Updating the International Classification of Occupations (ISCO), 3-6 December 2007; <http://www.ilo.org/public/english/bureau/stat/isco/docs/resol08.pdf>.

⁵For further details on the ISCO-08, see <http://www.ilo.org/public/english/bureau/stat/isco/isco08/>.

Statistics on employment by occupation are presented in ILOSTAT according to both the categories of the latest version of the ISCO available and broad skill levels, based on the following correspondence table:

Broad Skill Levels	ISCO-08	ISCO-88
Skill levels 3 and 4 (high)	1. Managers	1. Legislators, senior officials and managers
	2. Professionals	2. Professionals
	3. Technicians and associate professionals	3. Technicians and associate professionals
Skill level 2 (medium)	4. Clerical support workers	4. Clerks
	5. Service and sales workers	5. Service workers and shop and market sales workers
	6. Skilled agricultural, forestry and fishery workers	6. Skilled agricultural and fishery workers
	7. Craft and related trades workers	7. Craft and related trades workers
	8. Plant and machine operators, and assemblers	8. Plant and machine operators and assemblers
Skill level 1 (low)	9. Elementary occupations	9. Elementary occupations
Armed forces	0. Armed forces occupations	0. Armed forces
Not elsewhere classified	X. Not elsewhere classified	X. Not elsewhere classified

Recommended sources

Labour force surveys are typically the preferred source of information on employment by occupation. Such surveys can be designed to cover virtually the entire non- institutional population of a given country, all branches of economic activity, all sectors of the economy and all categories of workers, including the self-employed, contributing family workers, casual workers and multiple jobholders. In addition, such surveys generally provide an opportunity for the simultaneous measurement of the employed, the unemployed and persons outside the labour force (and thus, the working-age population) in a coherent framework.

Other types of household surveys and population censuses could also be used as sources of data on employment by occupation. The information obtained from such sources may however be less reliable since they do not typically allow for detailed probing on the labour market activities of the respondents.

In the absence of the abovementioned sources, establishment surveys or administrative records can provide information on employment by occupation, but they hardly cover all the employed population, typically excluding the informal economy, small establishments and some specific economic activities or occupations.

Interpretation and use of the indicator

Occupational statistics are used for research on labour market topics ranging from occupational safety and health to labour market segmentation. Occupational analyses also inform economic and labour policies in areas such as educational planning, migration and employment services. Occupational information is particularly important for the identification of changes in skill levels in the labour force.

In many advanced economies, but also in developing economies, occupational employment projection models are used to inform policies aiming to meet future skills needs, as well as to advise students and jobseekers on expected job prospects.

Changes in the occupational distribution of an economy can be used to identify and analyse stages of development. In the textbook case of economic development, when labour flows from agriculture to the industrial and services sectors, these flows will be visible in the occupational distribution as well. The share of skilled agricultural and fishery workers will typically decrease, while rising skill requirements are likely to be reflected in a decreasing share of elementary occupations, rising shares of high-skilled occupational groups such as professionals and technicians, and the need for rising educational attainment levels.

In developed economies, which already have relatively well-educated labour forces, increases in the shares of high-skilled occupational groups are associated with the advance of the knowledge economy and additional changes in the structure of economies. Furthermore, shifts within occupational groups may be equally important. For example, the growing importance of information and communication technology (ICT) has resulted in a proliferation of ICT-related jobs.

The breakdown of the indicator by sex allows for an analysis of gender segregation of employment. Division of labour markets on the basis of sex is one of the most pervasive characteristics of labour markets around the world, which is reflected in differentials in occupational distributions between men and women (as well as in sectoral distributions).

Limitations

A number of factors can limit the comparability of statistics on employment by occupation between countries or over time.

Comparability of employment statistics across countries is affected most significantly by variations in the definitions used for the employment figures. Perhaps the biggest differences result from age coverage, such as the lower and upper bounds for labour force activity. Estimates of employment are also likely to vary according to whether members of the armed forces are included. Armed forces constitute a separate occupational major group, but in some countries they are included in the most closely matching civilian occupation, depending on the type of work performed by the individual armed forces member concerned, or are included in non-classifiable workers.

Another area with scope for measurement differences has to do with the national treatment of particular groups of workers. The international definition of employment calls for inclusion of all persons who worked for at least one hour during the reference period.⁶ Workers could be in paid employment or in self-employment, including in less obvious forms of work, some of which are dealt with in detail in the resolution adopted by the 19th ICLS, such as unpaid family work, apprenticeship or non-market production. The majority of exceptions to coverage of all persons employed in a labour force survey have to do with slight national variations to the international recommendation applicable to the alternate employment statuses. For example, some countries measure persons employed in paid employment only and some countries measure only “all persons engaged”, meaning paid employees plus working proprietors who receive some remuneration based on corporate shares. Other possible variations to the “norms” pertaining to measurement of total employment include hours limits (beyond one hour) placed on contributing family members before for inclusion in employment.⁷

⁶ The application of the one-hour limit for classification of employment in the international labour force framework is not without its detractors. The main argument is that classifying persons who engaged in economic activity for only one hour a week as employed, alongside persons working 50 hours per week, leads to a gross overestimation of labour utility. Readers who are interested to find out more on the topic of measuring labour underutilization may refer to ILO: “Beyond unemployment: Measurement of other forms of labour underutilization”, Room Document 13, 18th International Conference of Labour Statisticians, Working group on Labour underutilization, Geneva, 24 November – 5 December 2008; http://www.ilo.org/global/statistics-and-databases/meetings-and-events/international-conference-of-labour-statisticians/WCMS_100652/lang--en/index.htm.

⁷ Such exceptions are noted in the footnotes and/or metadata fields in ILOSTAT’s data tables. The higher minimum hours used for contributing family workers is in keeping with an older international standard adopted by the International Conference of Labour Statisticians in 1954. According to the 1954 ICLS, contributing family workers were required to have worked at least one-third of normal working hours to be

Comparisons can also be problematic when the frequency of data collection varies widely. The range of information collection can run from one month to 12 months in a year. Given the fact that seasonality of various kinds is undoubtedly present in all countries, employment figures can vary for this reason alone. Also, changes in the level of employment can occur throughout the year, but this can be obscured when fewer observations are available.