Human resources in science and technology in 2021

- Research and development -

Human resources in science and technology are people aged 15-74 who have either completed higher education or are employed in the fields of science and technology as researchers, engineers, professional associates or technicians. According to the results of the Labor Force Survey (LFS), in 2021 in the Republic of Serbia there were 1 019 000 persons who meet some of the above conditions, of which 54% are women.

The core of human resources in science and technology consists of persons who meet both requirements, have acquired higher education and work in the fields of science and technology in these occupations. In 2021, 521 200 persons made up the core, of which 57% were women.

Chart 1. Persons aged 15 and over, who have completed higher education, according to levels of higher education and age groups, %

In the contingent of persons aged 15–74 who have completed higher education (1.182.700 persons), most persons with completed first degree of higher education - completed basic academic or vocational studies - 63%, and the lowest participation of doctors science, only 2%; observed by age, the most common age group is 35–44 years with 25%, followed by the age group 25–34 years with 24%.
Within the age group 25-34, the most represented are persons with completed master's level of higher education - 52.6%. The participation of women in this subcontinent is 652,500. (55.2%).

Observed by activity, in the population aged 15–74 with completed higher education, the largest share belongs to employed persons (69.6%), unemployed persons is 6.8%, and more than one fifth are inactive persons (21.7%). A total of 787,700 employed persons aged 15–74, have completed higher education, of which 55.1% are women.

The second condition is met by 752,500 persons – who have been employed in the mentioned occupations of science and technology, regardless of whether they have a formal higher education, of which 55.1% are women.
The largest share of persons working as: researchers, experts, engineers, professional associates or technicians in the sector of Education (17.1%), followed by Health and Social Protection (16%), Manufacturing (11.1%) and Professional, scientific, innovation and technological activities (10%).

Methodological explanations and definitions

Data source

Data are based on the results of the Labour Force Survey (LFS). The aim is to define the basic person’s characteristics, i.e. part of the labour force with the most developed skills and largest potential, which contributes to the development of society based on knowledge. The methodology of the Labour Force Survey is fully harmonized with Eurostat standards and makes possible comparison with the results of other countries. For the purpose of analyzing the data on human potentials in science and technology, persons aged 15-74 are included.

Definitions of the main characteristics

Two approaches are used to define human resources in science and technology:

- according to education (HRSTE) – persons who have completed tertiary education (ISCED 5, 6, 7 or 8),
- according to occupation (HRSTO) – persons who are employed in the fields of science and technology as professionals, engineers, associate professionals, technicians and managers (ISCO-08, groups 2 and 3).

Those who meet both mentioned requirements are called core of HRSTC.

The difference between the persons who belong to HRST according to education and occupation is in that those who are currently working in the fields of education and technology and do not have adequate formal qualifications lose HRSTO status when leaving their working post, getting retired or becoming some other way economically active, but persons who completed tertiary education hold permanently HRSTE status.

Active population (labour force) includes all employed and unemployed persons aged 15 and over.

Employed are persons who performed a paid job (paid in cash or in kind) for at least one hour in the reference week, as well as persons who had an employment, but were absent from work in that week. Employees includes also, besides persons who have an employment in an enterprise, institution or any other organization, or work as entrepreneurs, farmers, contributing family members as well as persons who performed a job that they had found on their own and established an agreement (oral or written) without entering in employment and to whom this job was the only source of subsistence means. Therefore, the Survey does not take into account the respondent’s formal status, but the respondent’s employment status is determined on the basis of the actual activity she/he performed in the reference week.

Unemployed persons are persons who did not perform any paid job in the reference week nor held a job from which they were absent and to which they could return to after the absence, provided that they met the following criteria: they took active steps in the past four weeks in finding a job and they were ready to begin working within two weeks in case of a job offer, they did not actively seek a job in the past four weeks because they had found a job they were to start after the reference week, and not later than three months.

Economically inactive population is all persons aged 15 and more who are not classified in employed or unemployed population. Economically inactive persons include students, retired persons, housewives or –men, as well as other persons who, in the reference week, did perform any paid job, did not seek work or were not ready to start working within two weeks after the end of the reference week.

Classifications

The following classifications are used for the survey:
- CA 2010 – Classification of Activities (NACE)
- International Standard Classification of Education (ISCED 2011)
- Classification of Occupations (ISCO-08)

Starting from 1999 the Statistical Office of the Republic of Serbia has not available data for AP Kosovo and Metohija therefore these data are not included in the coverage for the Republic of Serbia (total).