

0.a. Goal

9: Building Resilient Infrastructures, Promoting Inclusive and Sustainable Industrialization and Fostering Innovation.

0.b. Target

9.5 Strengthen scientific research, improve the technological capacities of industrial sectors in all countries, particularly in developing countries, including, until 2030, encouraging innovation and substantially increasing the number of research and development workers per million people and public and private spending on research and development.

0.c. Indicator

9.5.2 Researchers (equivalent full time value) per million inhabitants.

0.d. Series

Researchers (equivalent to full-time) per million inhabitants.

0.e. Metadata update

10/8/2020

0.f. Related indicators

Not linked to other indicators

1.a. Organisation

Ministry of Science and Technology, Higher Education and Professional Technician

1.b. Contact person(s)

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1.c. Contact organisation unit

Directorate of Planning, Studies and Cooperation

1.d. Contact person function

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2.a. Definition and concepts

Researchers (full time equivalent) per million inhabitants is a direct measure of the number of researchers involved in Scientific Research and Experimental Development during the year per 1 million inhabitants.

The full-time equivalent (FTE) of R&D personnel is defined as the proportion of hours actually spent on R&D during a specific reference period (usually a calendar year) divided by the total number of hours conventionally worked in the same period by an individual or by a group.

2.b. Unit of measure

Number

2.c. Classifications

OECD Frascati Manual (OECD, 2015)

3.a. Data sources

MCTESTP, National Survey of Scientific Research and Experimental Development (ID).

3.b. Data collection method

The ID Survey is conducted based on the Frascati Manual Methodology (2015). The statistical operation is national in nature, as it covers Scientific Research Institutions (IIC), Higher Education Institutions (IES), Companies and Private Non-Profit Institutions (IPSFL) in the country.

In the Survey, the census is used to collect data in Higher Education Institutions and Scientific Research Institutions located in the national territory, taking into account the reduced universes of these Institutions. As for Private Non-Profit Companies and Institutions (IPSFL), Stratified Proportional Sampling is used due to the enormous size of the universe.

Data Collection, Processing and Analysis

Data collection is based on physical and online questionnaires, combined with the face-to-face interview method, sending questionnaires by e-mail and links that allow access to the online questionnaires of the Information System (e-Survey). Data pre-processing is done automatically in the Information System (e-Survey). Then, the verification and validation of the data was made using the STATA Statistical Packages and the Excel package for graphing.

Overall response rate considered is 75%.

3.c. Data collection calendar

June 30th of each year

3.d. Data release calendar

March 30th of the following year

3.e. Data providers

Ministry of Science and Technology, Higher Education and Professional Technician through the Directorate of Planning, Studies and Cooperation.

3.f. Data compilers

Ministry of Science and Technology, Higher Education and Professional Technician through the Directorate of Planning, Studies and Cooperation.

3.g. Institutional mandate

The Ministry and agency delegated by INE to produce statistics from the Science, Technology, Higher Education and Professional Technical Sector according to Joint Order, December 2002, Republic Bulletin No. 10, I SERIES, of March 5, 2003.

4.a. Rationale

This indicator measures the effort undertaken by full-time researchers in a given year in every 1 million inhabitants. Expresses the number of full-time equivalent researchers per 1 million inhabitants.

For example, the effort made by a number of (200) researchers and in a given year, can be equivalent to the work done by 80 professionals working full time in R&D.

4.b. Comment and limitations

Research and development (R&D) data need to be collected through expensive national surveys, and are not carried out regularly, as their realization and conditioned financial resources.

4.c. Method of computation

This indicator is obtained by the reason the number of full-time equivalent researchers and the Total Population of a given year, multiplied by 1 million inhabitants.

4.d. Validation

The results of each statistical operation are analyzed by the Department of Studies and Statistics and then presented on the Technical and Advisory Councils of the MCTESTP for internal appraisal and validation, and finally presented in seminars for the purposes of Final validation.

4.h. Methods and guidance available to countries for the compilation of the data at the national level

In the production of this indicator, the international methodological guidelines established in the OECD Frascati Manual (OECD, 2015) are used to allow comparability with other countries.

4.i. Quality management

In process the creation of the Quality Management System at the level of the National Statistical System, however at the Ministry level there is a Department of Studies and Statistics that checks the quality of the production of Sector Statistics throughout the process.

4.j. Quality assurance

To guarantee the quality required in the Statistics production process, the sector uses all correlated administrative information sources, in order to complement, validate and measure the information obtained. Also during the process of analysis and establishment of the value data, the sources of origin of the basic information are questioned whenever there are doubts or anomalous variations in the results obtained.

4.k. Quality assessment

The instruments for assessing the quality of statistical processes and products at the level of the National Statistical System are being developed based on the 19 quality principles established by the United Nations Statistics Commission.

5. Data availability and disaggregation

The data for this indicator are available annually and are not disaggregated.

6. Comparability/deviation from international standards

The data produced by the sector for the estimation of this indicator allows international comparability, since they obey the international criteria and standards established by the OECD Frascati Manual (OECD, 2015).

7. References and Documentation

Report on Indicators for Scientific Research and Experimental Development.