QUALITY REPORT FOR 2017
Statistical Survey on Scientific and Research Activities - Research and Development

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1. Introduction – Basic information about the survey

1.1 Purpose, goal and subject of the survey

R&D statistics provide internationally comparable data on total domestic expenditure which refers to R&D and research and development personnel. The methodology by which the research is conducted is in accordance with EU regulation 995/2012.

1.2 Legal basics

- Law on Statistics and Statistical System,
- Annual Plan of Official Statistics for 2017 - Commission implementing regulation (EU) No 995/2012

1.3 Statistical units

Statistical unit is a unit in which at least one researcher during the reporting unit worked on tasks of research and development, both as its employee or external associate. Statistical unit is an organizational unit of university: faculty, institute, center; enterprise or enterprise sector; office, agency, hospital; NG

1.4 Coverage and scope of survey

1.4.1 Sectors

Sectors that are involved in survey of R&D are: business and entrepreneurial sector, higher education sector, government sector, private non-profit sector.

1.4.2 Statistical population

Statistical population is made of all statistical units that were recognized as performers or potential performers of R&D activity (census principle). Statistical population covers:
a. All institutions from the register of licensed scientific and research institutions of Ministry of Science.
b. Additional units from the register of higher-education institutions kept by the Ministry of Education (in addition to those licensed at the Ministry of Science), thus the survey covers all high education institutions.
c. Government sector units that had expenditures on survey and development in last year, what is recorded by the Ministry of Finance (except those licensed at the Ministry of Science). Examples of those statistical units are: Academy of Science, agencies and office of the Government, clinics, museums, and other government bodies or local government bodies that are users of government or local budget.
d. Additional units from the business sector that had expenditures on survey and development in last year, what is recorded by several bodies of public administration (Ministry of Economy, Chamber of Economy, Tax Administration – apart from the units listed in the registers of the Ministry of Science).
e. Units from any sector which used programs of support to research and development of the Ministry of Science, participated in the EU programs for research and development or for which it is known in another manner that they are engaged in this activity.
f. Units that participated in statistical survey for previous year.

1.5 Referent geographical area

Country - NUTS classification, according to which Montenegro is a single region.

1.6 Concepts and definitions

Research and development statistics monitors the following input variables:
- Number of employees in research and development area - absolute (head count - HC),
- Number of researchers - absolute (head count - HC),
- Number of employees in research and development area - full-time equivalent – FTE,
- Number of researchers - full-time equivalent (FTE),
- Internal consumption for research and development.

For the mentioned variables there is necessary to produce the data by defined breakdowns, where the mentioned classifications are used. Aligned with the EU regulation, the data for odd years are produced with full breakdowns, while only basic breakdowns are produced for equal years.
Output variable: Total domestic consumption on research and development as % of GDP (GERD).

1.7 Classifications

Classification of research types:
- Law on SRD, 2014 and Frascati 2002-2007-2015,
- Classification of research areas - Law on SRD, 2014,
- Fields of research and development - Frascati 2007, 2015,
- Classification of expenditure types - Frascati 2002,
- Classification of occupations – ISCO 88,
- Classification of education level – ISCED 2011,
- Classification of commercial activities - KD 2010, NACE - Rev2,
- Classification of performance sector - Frascati 2002, 2015,
- Classification of social and economic objectives SEO, Frascati 2002.

1.8 Frequency of data collection

Annual.

1.9 Frequency of data dissemination

Preliminary and final data are published once a year. Preliminary data are published at the end of october of current year for previous year (G+10) . Final data are published after 18 months of the end of the fiscal year (G+18). The data are submitted to Eurostat at the same dynamic. Because of limited capacity, preliminary data were not sent until 2018, but only the final data. It is planned to start sending the preliminary data from 2019.

1.10 Methodology

A summary of the methodology is contained in the report http://www.mna.gov.me/rubrike/Statistika_istrazivanja_i_razvoja/208357/Saopstenje-o-statistici-istrazivanja-i-razvoja-za-2017-godinu.html The questionnaire is provided with a detailed Instruction that contains an explanation of the concepts and definitions.

1.11 Base period

2011

1.12 Unit of measure

- Number of persons,
- Number of people-year (full time employment equivalent),
- EUR.

1.13 Source of data

- Number of research and development staff, with breakdowns,
- Annual consumption on R&D, with breakdowns.

1.14 Method of collection data

Excel survey conducted by surveyors on the spot. The questionnaire, together with the instructions is sent by e-mail to all units from the address book.

2. Relevance - data users

2.1 User needs

The main users of the data are: Government of Montenegro, Ministry of Science, Ministry of Economy, research community, international organizations: EU, UNESCO, OECD.
The data is used for international competitiveness indicators (for example SEE Competitiveness Report 2018, OECD).

2.2 User satisfaction

User satisfaction survey with the total statistical process was not carried out.

3. Accuracy and reliability

3.1 Accuracy – overall

Error of interviewed in the interpretation of research and development definitions, i.e. possibility to include activities that are not R&D or personnel that do not belong to appropriate categories. Efforts have been made to adequately train interviewers to work effectively in the field. Error of processing person – statistician, due to the lack of system for monitoring data processing process. The data production phase can be also be subject of statistician error. Appropriate understanding of the definitions and monitoring of data editing are the most critical parts of the system.

3.2 Sampling error

Not relevant because the survey uses the method of census.

Indicators of sampling error (A1)

Not relevant because the survey uses the method of census.

3.3 Non-sampling error

Not relevant because the survey uses the method of census.

3.3.1 Coverage error

Not relevant.

Indicators of coverage error (A2)
Not relevant.

3.3.2 Error of measurement

Measurement and processing errors can be due to questionnaire design, type of survey, interviewers, response errors, encryption, data entry, editing and imputation of data, etc. Data in the R&D Survey were collected through the engagement of interviewers, with the electronic completion of questionnaires. Mistakes that can be caused by the interviewer (e.g. when entering data) are minimized by intensive interviewer training. The material entry program contains controls e.g. control of minimum and maximum values, logical connection between particular issues, etc. thus reducing errors caused by data entry. After entering the data, a detailed logical and computational control of all answers is made, e.g. control of entered values by ranges, control of possible answers, logical and computational control of activities and occupations, logical control of data on economic activity, educational status, etc.

3.3.3 Non response error

Not relevant.

Unresponsive unit rate (A3)

Not relevant.

Non response rate
A4=0.11

3.3.4 Error processing the data

In case of an error, the information is published on the Ministry of Science website and new, corrected information is published.

Imputation rate

Not relevant.

3.4 Seasonal adjustment

Not applicable.

3.5 Data revision

3.5.1 Data revision policy

The Ministry of Science is conducting a regular review after the release of preliminary data.
Revision Policy of the Statistics Office is available on the website
http://www.monstat.org/cg/page.php?id=1493&pageid=1493

3.5.2 Data revision practice

The data revision is done if there is an error observed, from the phase in which the preliminary data is published to the phase in which the final data are published. Additional quality controls of obtained data and their processing are done.

3.5.3 Data revision - average size (A6)

Not available.

4. Timeliness and punctuality

4.1 Timeliness

Time lag of the first results
Preliminary data for 2017. are not published.

Time lag of the final results
The results of the survey are published 20 months after the end of the fiscal year (TP2=20 months).

4.2 Punctuality

The data are published on August 2 2019 (TP3=33 days).

5. Availability and clarity

5.1 Statistical Release Calendar

The calendar is published on the website of the Statistics Office.

5.2 Access the data Release Calendar

http://www.monstat.org/cg/page.php?id=12&pageid=12

5.3 Releases

http://www.mna.gov.me/rubrike/Statistika_istrazivanja_i_razvoja/

5.4 Publication

Not available.

5.5 On-line database

Not available.

5.6 Access to micro data

Individual data are not published, as clearly indicated in the Law on Official Statistics, Chapter XIII Confidentiality and data protection for official statistics purposes.

5.7 Metadata occupancy

Not available.

6. Comparability

6.1 Spatial comparability

The data are comparable on international level and agreed with regulation EU 995/2012.

6.2 Time comparability

The data are fully comparable.

Time comparability indicator

CC2 = 6 years