

Statistical survey on research and development in business entities, public sector and private non-profit organisations, higher education

STI\_IR\_A\_EN\_2021\_1

## Reference Metadata in ESMS 2.0 structure

|   |                                  |
|---|----------------------------------|
| <b>1</b>  | <b>Contact</b>                   |
| <b>1.1</b>  | <b>Contact organisation</b>      |
| State Statistical Office                                      |                                  |
| <b>1.2</b>  | <b>Contact organisation unit</b> |
| Department for research and development, innovations and ICT. |                                  |
| <b>1.3</b>  | <b>Contact name</b>              |
| Kiro Trajkovski   |                                  |
| <b>1.4</b>  | <b>Contact person function</b>   |
| Junior Associate  |                                  |
| <b>1.5</b>  | <b>Contact mail address</b>      |
| Dame Gruev 4, 1000 Skopje, Republic of North Macedonia        |                                  |
| <b>1.6</b>  | <b>Contact email address</b>     |
| kiro.trajkovski@stat.gov.mk                                   |                                  |
| <b>1.7</b>  | <b>Contact phone number</b>      |
| + 389 2 3295 651  |                                  |
| <b>1.8</b>  | <b>Contact fax number</b>        |
| + 389 2 3111 336  |                                  |
| <b>2</b>  | <b>Metadata update</b>           |
| <b>2.1</b>  | <b>Metadata last certified</b>   |
| 31/10/2022  |                                  |
| <b>2.2</b>  | <b>Metadata last posted</b>      |
| 31/10/2022  |                                  |

|   |   |
|---|---|
| <b>2.3</b>  | <b>Metadata last update</b>                 |
| 31/10/2022  |   |
| <b>3</b>  | <b>Statistical presentation</b>             |
| <b>3.1</b>  | <b>Data description</b>                     |
| <p>Persons in paid employment in R&amp;D by type of employment and sector of performance; Persons in full-time and part-time paid employment in R&amp;D, Persons in part-time paid employment in R&amp;D by full-time equivalent (FTE); Persons in paid employment in R&amp;D for indefinite and definite period, as well as external collaborators under work contract or fee by educational attainment; Persons in full-time and part-time paid employment in R&amp;D, for indefinite and definite period, by age and sector of performance; Persons in paid employment in R&amp;D for indefinite and definite period by ethnic affiliation; Unfinished and finished research projects by field of science and type of research; Funding sources of research organisations; Total expenditures for R&amp;D; Published scientific and research projects - works by sector of performance; Realised income for finished and unfinished research projects by field of science.</p> |   |
| <b>3.2</b>  | <b>Classification system</b>                |
| <p>National Classification of Activities - NKD Rev.2; Classification of institutional sectors (2016) Classification of scientific fields and branches of research (2007) Nomenclature for the analysis and comparison of scientific programmes and budgets (2007) The education system in the Republic of Macedonia in terms of ISCED2011 - International Standard Classification of Education MSKOB (2013)</p>   |   |
| <b>3.3</b>  | <b>Sector coverage</b>                      |
| <p>Sectors: A- Agriculture, forestry, fishing, B- Mining and quarrying; C- Manufacturing; D- Supply with electricity, gas, steam and air conditioning; E- Water supply; sewerage, waste management and activities for repairing the environment; F- Construction; G- Transport and storage; H- Information and Communications; I- Financial and insurance activities, that were performing activities for Section 72- Scientific research and development, according to NKD Rev. 2.</p>   |   |
| <b>3.4</b>  | <b>Statistical concepts and definitions</b> |
| <p>Research activity is systematic creative work that is undertaken in order to discover new knowledge, in order to raise the general level of development of society and using these skills in all areas of social development. The scientific activity is divided into: basic, applied research and development and training of personnel for scientific research. Goals of the scientific research and research and development activity are continuous improvement of the scientific research activity, correlations between science and education, coordination of the subjects for scientific research activity, improvement of the domestic and international cooperation for knowledge transfer, research, training and usage- improving the usage of research results, transparency in the researches and in using the results, increasing the individual and social quality of living.</p>  |   |
| <b>3.5</b>  | <b>Statistical unit</b>                     |
| <p>Statistical unit is each business entity is defined in the concept 3.3.</p>  |   |

|   |   |
|---|---|
| <b>3.6</b>  | <b>Statistical population</b>           |
| Statistical unit is each business entity is defined in the concept 3.3.   |   |
| <b>3.7</b>  | <b>Reference area</b>                   |
| Republic of North Macedonia   |   |
| <b>3.8</b>  | <b>Time coverage</b>                    |
| Since 1986 year.  |   |
| <b>3.9</b>  | <b>Base period</b>                      |
|   |   |
| <b>4</b>  | <b>Unit of measure</b>                  |
| Number.   |   |
| <b>5</b>  | <b>Reference period</b>                 |
| Year.   |   |
| <b>6</b>  | <b>Institutional mandate</b>            |
|   |   |
| <b>6.1</b>  | <b>Legal acts and other agreements</b>  |
| National: National: Law on State Statistics ("Official Gazette of the Republic of Macedonia" No. 54/97, 21/07, 51/11, 104/13, 42/14, 192/15, 27/16, 83/18 and 220/18), and ("Official Gazette of the Republic of North Macedonia" No. 31/20), and Programme of Statistical Surveys 2018-2022 ("Official Gazette of the Republic of Macedonia" No. 20/13, 24/14, 13/15, 7/16, 22/18 and 224/18), and ("Official Gazette of the Republic of North Macedonia" No. 18/20 and 300/20). International: Regulation (EU) No. 995/ 2012                            |   |
| <b>6.2</b>  | <b>Data sharing</b>                     |
| Time Series for annual data from 1998: via eDAMIS to Eurostat   |   |
| <b>7</b>  | <b>Confidentiality</b>                  |
|   |   |
| <b>7.1</b>  | <b>Confidentiality - policy</b>         |
| Individual data are protected by the Law on State Statistics. Data collected with statistical surveys from the reporting units or indirectly from administrative or other sources are confidential data and are used only for statistical purposes. Results from the statistical processing may also generate information considered as confidential, for example: anonymised individual data, tables with low level of aggregation, as well as unreleased data. The Policy on Statistical Confidentiality contains the basic principles used in the SSO. |   |
| <b>7.2</b>  | <b>Confidentiality - data treatment</b> |

All individual or personal data, in each phase of statistical processing, are treated as confidential data and may be used only for statistical purposes. When releasing data from this survey at an aggregated level, there is no need for additional data treatment for the purpose of ensuring confidentiality.

## 8 Release policy

### 8.1 Release calendar

Data are released in accordance with the Release Calendar, which is published on the web site of the State Statistical Office. The Release Calendar is prepared annually before the beginning of each year and is updated quarterly.

### 8.2 Release calendar access

Advance Release Calendar

### 8.3 User access

In accordance with the dissemination policy, all users have equal access to statistical data at the same time. Data are released on the web site at the same time for all users, which are informed with the Release Calendar, and no user has privileged access.

## 9 Frequency of dissemination

Yearly.

## 10 Accessibility and clarity

### 10.1 News release

### 10.2 Publications

Research & development activity

### 10.3 On-line database

Makstat database

### 10.4 Micro-data access

According to the Law on State Statistics (Article 41) and the Policy on Access to Anonymised Microdata for scientific purposes, data collected for the purpose of official statistics may be used for scientific purposes if there is no risk of direct or indirect identification, i.e. disclosure of data individuality. Access to microdata is possible only in the safe room at the SSO, based on a submitted and approved request and a signed agreement. Micro data access

### 10.5 Other

Survey data are sent to Eurostat and they are released on the web site of this institution.

### 10.6 Documentation on methodology

|   |                                 |
|---|---------------------------------|
| <u>Methodological explanations</u>  |                                 |
| <b>10.7</b>   | <b>Quality documentation</b>    |
| A National Quality Report is sent to Eurostat.  |                                 |
| <b>11</b>   | <b>Quality management</b>       |
| <b>11.1</b>   | <b>Quality assurance</b>        |
| The commitment of the SSO to ensuring quality of products and services is described in the Law on State Statistics, the Strategy of the State Statistical Office ( <a href="#">Strategic plan</a> ) and the Quality Policy of the State Statistical Office ( <a href="#">Quality Policy</a> ), as well as in the continuous efforts for harmonisation with the European Statistics Code of Practice. The main aspects and procedures for quality management in the phases and sub-phases of the Statistical Business Process Model, as well as the good practices for ensuring quality are documented in the internal document called "Guide for ensuring quality of statistical processes". Input and output metadata, as well as relevant quality indicators for certain sub-processes are described in the document "Guide for survey managers". |                                 |
| <b>11.2</b>   | <b>Quality assessment</b>       |
| <b>12</b>   | <b>Relevance</b>                |
| <b>12.1</b>   | <b>User needs</b>               |
| The data are used by Government, ministries, agencies and local government for their use in determining and conducting development policy, by students, researchers, as well as international institutions, UNESCO, OECD, Eurostat and others. Indicators: GERD- Gross expenditure on Research and Development.   |                                 |
| <b>12.2</b>   | <b>User satisfaction</b>        |
| The State Statistical Office conducts the User Satisfaction Survey at the domain level. This Survey is conducted every three years and the last one was in 2019. <a href="#">Survey</a> .   |                                 |
| <b>12.3</b>   | <b>Completeness</b>             |
| In terms of the indicators provided by Regulation. 995/2012 of the European Commission, SSO provides about 50% of them.   |                                 |
| <b>13</b>   | <b>Accuracy and reliability</b> |
| <b>13.1</b>   | <b>Overall accuracy</b>         |
| Data accuracy is ensured by working on decreasing sampling and/or non-sampling errors, as well as with additional data comparisons and analysis before dissemination.   |                                 |
| <b>13.2</b>   | <b>Sampling error</b>           |
| The survey is conducted with intentionally selected sample and there is no measurement of sampling errors.  |                                 |

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| <b>13.3</b>  | <b>Non-sampling error</b>           |
| <p>Errors in coverage: Data providers are reminded timely to fulfill its obligation. During conducting the survey, the questionnaires are collected from the field daily, in order to control the scope and timely detection of errors. The collected data are controlled by the obliged person for the survey. If an error is detected in the questionnaires by contacting with the reporting units they are adjusted. According delivered questionnaires, 80.2% of the reporting units sent data of which 17.4% had research and development activity. Errors in data processing: Data entry is made through pre-defined application for entry in manual mode. During the data entry, there are applied automatically controls and controls over input, as well as additional control after completing the entry. If some bigger imperfection is detected in the questionnaires, the reporting units were contacted.</p> |                                     |
| <b>14</b>  | <b>Timeliness and punctuality</b>   |
| <b>14.1</b>  | <b>Timeliness</b>                   |
| T+360.   |                                     |
| <b>14.2</b>  | <b>Punctuality</b>                  |
| Data are disseminated within the established deadlines in accordance with the Release Calendar.  |                                     |
| <b>15</b>  | <b>Coherence and comparability</b>  |
| <b>15.1</b>  | <b>Comparability - geographical</b> |
| The data are disseminated on national level. Comparability is ensured on international level.  |                                     |
| <b>15.2</b>  | <b>Comparability - over time</b>    |
| Provided data comparability since 1986 and no interruption of time series. Number of reference periods in time series - 30.  |                                     |
| <b>15.3</b>  | <b>Coherence - cross domain</b>     |
| Coherence between areas is partially provided.   |                                     |
| <b>15.4</b>  | <b>Coherence - internal</b>         |
| Internal coherence of data is ensured  |                                     |
| <b>16</b>  | <b>Cost and burden</b>              |
| <b>17</b>  | <b>Data revision</b>                |
| <b>17.1</b>  | <b>Data revision - policy</b>       |
| In accordance with the Statistical Data Revision Policy. <a href="#">Data Revision Policy</a> .  |                                     |
| <b>17.2</b>  | <b>Data revision - practice</b>     |

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| <b>18</b>  | <b>Statistical processing</b>       |
| <b>18.1</b>  | <b>Source data</b>                  |
| <p>Data sources are statistical surveys where each reporting unit delivers individual questionnaire if in the calendar year had scientific research activity. Research and development, sector of business entities-IR.1 The business sector comprises business entities in the field of economy, organisations and institutions whose primary activity is production of goods and services (other than higher education) for sale. - defined in the concept 3.3.</p>  |                                     |
| <b>18.2</b>  | <b>Frequency of data collection</b> |
| <p>Yearly.</p>   |                                     |
| <b>18.3</b>  | <b>Data collection</b>              |
| <p>The data are collected with the statistical surveys which are based on intentionally selected sample ( subjects which in the reporting year had research and development activity). They are obtained via method of self fulfillment of the statistical questionnaire by the reporting units, in accordance with the sector in which they are belonging. Sector of business entities - IR.1 The self fulfillment of the questionnaire is done manually and delivered in paper form via postal service to the SSO.</p>   |                                     |
| <b>18.4</b>  | <b>Data validation</b>              |
| <p>Data validation is done in accordance with the defined criteria for control. Initial check of the data is done by the responsible person for the survey in the subject matter department while receiving the completed questionnaires. Data validation is done after data entry too.</p>  |                                     |
| <b>18.5</b>  | <b>Data compilation</b>             |
| <p>The data are obtained on paper and controlling the scope of the reports received is done by the person responsible for the survey. If it is necessary business subjects are contacted for the coverage and completeness of the questionnaires. Controlled questionnaires by the person responsible for the survey, are entered in the application with inserted mathematical and logical controls, also additional controls are done after the data entry. If errors are detected in the questionnaires the reporting units are contacted additionally and the errors are adjusted. The data are controlled, compared and analysed, also and before their publication, at an aggregate level.</p> |                                     |
| <b>18.6</b>  | <b>Adjustment</b>                   |
| <p>Data adjustment is not performed.</p>   |                                     |
| <b>19</b>  | <b>Comment</b>                      |
| <b>A.1</b>   | <b>Annexes</b>                      |