

## METHODOLOGICAL NOTE

**1. Data source:** the annual statistical surveys concerning the research and development activity (CD-GOV – “The statistical survey on the research and development activity of the public/government sector”, CD-HES – “The statistical survey on the research and development activity of the higher education and university clinics sector”, CD-PNP – “The statistical survey on the research and development activity of the non-profit sector” and CD-BES – “The statistical survey on the research and development activity of the business sector”) – questionnaires available at the following address: <https://esop.insse.ro/esop-web/>, through which data on the indicators related to human resources and expenditure are collected according to Commission Implementing Regulation (EU) No 995/2012 of 26 October 2012 laying down detailed rules for the implementation of Decision No 1608/2003/EC of the European Parliament and of the Council concerning the production and development of Community statistics on science and technology.

The National Institute of Statistics has launched, beginning with the reference year 2011, the new above-mentioned statistical questionnaires meant for the statistical units in accordance with the performance sectors of the economy, also taking into consideration the recommendations of the Frascati Manual, the 2002 edition, where it is specified that both the units that are known to perform research and development activities and the units that potentially carry out these activities should be selected.

**2. The statistical survey is selective for the CD-BES survey and exhaustive for the rest of the surveys, namely CD-GOV, CD-HES and CD-PNP,** taking into consideration the criteria for the selection of the units included in the 4 nomenclatures of the surveys. For **the CD-BES survey**, the type of sampling used/the sample-drawing procedure is the stratified sampling with simple random selection without replacement within each stratum, where the stratification variables are the economic activity, the size class of the enterprise according to the number of employees and the development region. The statistical survey regards all enterprises, regardless of the size class and/or the economic activity. The enterprises with 100 or more employees are exhaustively surveyed. The size classes according to the number of employees are: 0-9 (micro), 10-49 (small), 50-249 (medium) and 250 or more (large). A number of **11388 enterprises** represented the statistical population for **the CD-BES survey**. The representativeness of the sampling frame – calculated according to the turnover – is 95% of the total active units. The maximum admitted error of estimations is  $\pm 5\%$ . For CD-GOV, CD-HES and CD-PNP, the survey was exhaustive and involved a number of **656 units for CD-GOV, 154 units for CD-HES and 243 units for CD-PNP**.

### 3. Concepts and definitions

**The experimental research and development** is the systematic and creative activity undertaken to enhance the knowledge, including the knowledge about man and culture, and the use of this knowledge for new applications.

The experimental research and development (hereafter called research and development) includes:

- **the basic research** – a theoretical or experimental activity mainly initiated to accumulate new knowledge regarding the fundamental aspects of the noticeable phenomena and facts without considering a special or particular application;
- **the applied research** – an original investigation activity intended to facilitate the accumulation of new knowledge and mainly oriented towards a particular practical purpose or objective;
- **the experimental development** – a systematic activity which uses the existing knowledge gained from research and/or practical experience in order to launch new materials, products and devices into production, to introduce new processes, systems and services or to substantially improve the existing ones.

**The statistical data related to the research and development activity** also include the technological design. **The human and financial resources from the research and development domain** are presented by **sectors of performance**, according to the methodology in the Frascati Manual of the OECD, the 2002 edition, following the model of those in the System of National Accounts:

- **the business performance sector (BES-business)** covers the units of the national economy whose primary or secondary activity is research and development and which are known or unknown when the sample of reporting units is built;
- This sector includes: all the enterprises, organisations and institutions in the business sector

whose activity is the production of goods and services meant for the market.

- The basic core of the BES performance sector is made up of **private companies** (corporations or quasi-corporations), regardless of whether they have profit or not. Among these companies, one can encounter certain firms for which the research and development activity is the main activity (such as: research and development commercial institutions and labs).

Additionally, this sector can include **public companies** (public corporations or governmental quasi-corporations) engaged in the production and sale of a certain type of goods and services that are usually provided by private companies.

This sector also includes the **non-profit institutions that are direct producers of goods and services** (other than higher education services), such as:

- the non-profit institutions engaged in the market production whose main activity is the production of goods and services to be sold for a price that covers the main production costs. This sector can include: research institutes, certain private clinics and hospitals, companies which provide various medical services in exchange for a payment, which can attract additional funds in the form of donations or from their own assets;
- the non-profit institutions that serve the business sector. They are created and guided by associations belonging to the business sector that aim at the promotion of their own activity, such as the commercial or agricultural associations.

- **the government performance sector (GOV-governmental)** consists of all governmental units (the ministries that are authorising officers for the budget allocated to research and development), the units that provide public services, the central and local administration units that perform research and development activities, as well as national research and development institutes;

- **the higher education performance sector (HES-higher education)** includes all state and private higher education units, as well as medical clinics that are under the direct guidance of or are administered in association with higher education institutions and that perform research and development activities;

- **the private non-profit performance sector (PNP-private non-profit)** consists of unions, foundations, centres, associations, organisations, trade unions, parties and political groups that perform research and development activities. The family associations are also included in this category.

Generally, these units provide individual or collective services without pay or for a totally insignificant price.

**The staff in the research and development activity** consist of the persons who take part in the research topics or provide services directly related to this activity.

The research and development staff were grouped according to several criteria (some concern the staff with higher education), as follows:

**a) by occupation:**

- **researchers** – experts involved in the design or creation of knowledge, products and processes, methods and systems. This category includes certified scientific researchers and other categories of staff with higher education that directly perform research and development activities;
- **technicians and similar** – staff with a medium level of education or who completed a specialised post-secondary training in a technical field or a field of a different nature. They participate in the research and development activity by applying the principles and operational methods under the direct control of researchers;
- **other categories** – workers and secretarial and office staff that take part in the implementation of research and development projects or who are directly involved in the implementation of such projects;

**b) by level of education:**

- the staff with higher education (holders of PhDs included);
- the staff with another level of education (excluding higher education).

The research and development staff were also calculated in “**full-time equivalent**” by transforming the number of part-time employees into a full-time employee equivalent, according to the working time devoted to this activity.

**The total research and development expenditure consists of current expenditure and capital expenditure.**

**The current expenditure** includes all the payments made in the units during a period of time, representing the labour cost, the cost of materials, as well as other current expenditure.

**The capital expenditure (investments)** includes the payments made during a period of time for construction works, for the purchase of devices, tools, machinery and equipment, or other expenditure of this nature, intended to contribute to an increase in the volume of fixed assets of the unit.

**The total (current and capital) expenditure** related to the research and development activity is grouped by **sources of funds, as follows:**

- **from enterprises**, intended for the conducting of the research and development works contracted by them, as well as from the resources resulting from production and micro-production activities, savings in the overheads of the unit and other sources available to the unit;
- **from public funds**, mainly managed by fund co-ordinators and used for financing the research and development works conducted based on contracts and general programmes financed from the budget;
- **from higher education units**, for conducting the research and development works contracted by them, as well as the amounts collected from micro-production, the sale of magazines, journals, fees from students, rentals of spaces etc.;
- **from non-profit institutions**, for conducting the research and development works contracted by professional organisations, trade unions, cultural associations, charitable or aid organisations etc.;
- **from funds from abroad**, for research and development activities, including sources from international organisations, foreign governments or institutions;
- **other sources of funds.**