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Statistics of science, technology and innovation

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Research and development activity, 2024

– Research and development –

Total expenditures for research and development activities (R&D) in 2024 amounted to over RSD 90 billion RSD (90,580,802 in thousands), and their participation in GDP amounts 0,94%.

In total expenditures for R&D, the share of gross investments is 8%, while the share of current expenditures is 92%.

In the total number of organizations engaged in research and development activities, the business sector participated with 65%, higher education with 22%, the government sector with 12%, and the non-profit sector with less than 1%.

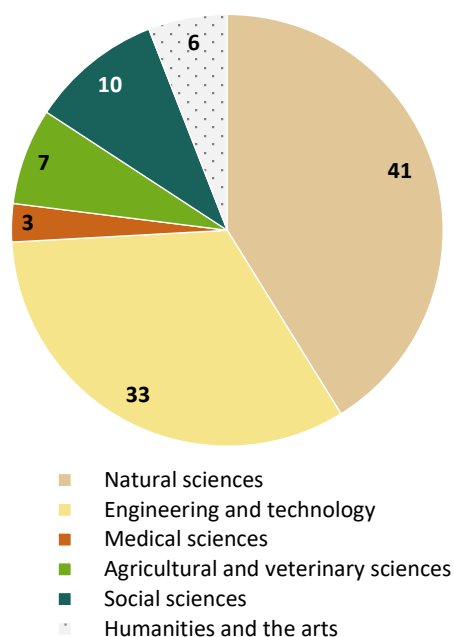
In 2024, there were 30,810 persons employed in this activity, of which 19,323 persons are researchers. In the total number of employees, the participation of women is 51%. The participation of researchers employed in NIRD increased by 5% compared to the previous year and their participation in the total number of employees is around 63%.

T1. Gross domestic expenditures for research and development by scientific fields and sectors

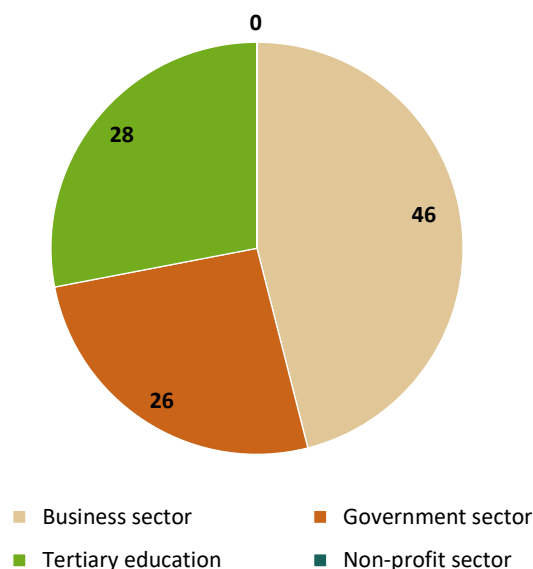
(in thousands of dinars)

	Gross domestic expenditure	Gross investments	Current costs		
			Total	Gross salaries	Material costs
REPUBLIC OF SERBIA	90580802	7111036	83469766	65612577	17857189
Natural sciences	37293578	1366423	35927155	29237587	6689568
Engineering and technology	29853297	5067587	24785710	19020448	5765262
Medical and health sciences	2588017	58398	2529619	1773851	755768
Agricultural and veterinary sciences	6545740	267906	6277834	4892183	1385651
Social sciences	8940966	265327	8675639	6426016	2249623
Humanities and the arts	5359204	85395	5273809	4262492	1011317
Business sector	41695812	5039266	36656546	31992923	4663623
Government sector	23509347	1087619	22421728	16809843	5611885
Tertiary education	25358721	984151	24374570	16795988	7578582
Non-profit sector	16922	-	16922	13823	3099

Graph 1. Gross domestic expenditures for research and development by scientific fields, %



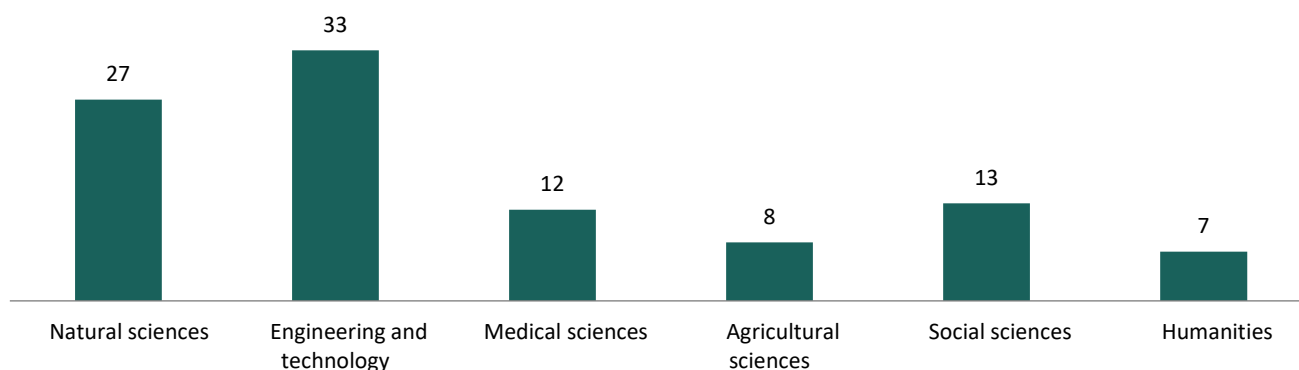
Graph 2. Gross domestic expenditures for research and development by sectors, %



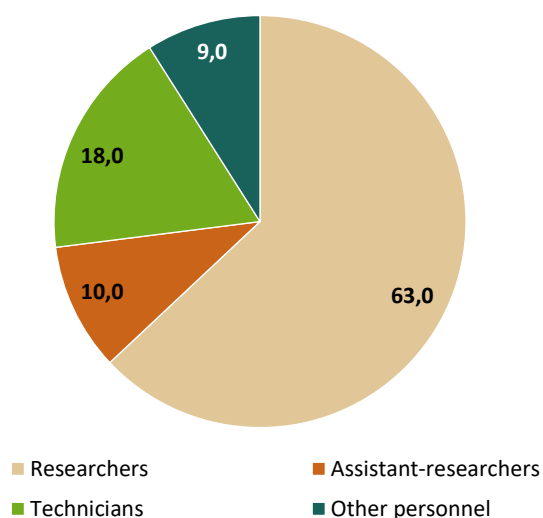
T2. Employees engaged in R&D activities by sectors, fields of science and sex

	Total		Researchers		Assistant-researchers		Technicians		Other personnel	
	All	Women	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	30810	15616	19323	10191	3130	1464	5668	2608	2689	1353
Natural sciences	8290	4208	4912	2743	1257	503	938	468	1183	494
Engineering and technology	10315	4116	5552	2293	904	338	3395	1273	464	212
Medical and health sciences	3756	2368	2881	1747	269	180	352	251	254	190
Agricultural and veterinary sciences	2411	1309	1218	674	175	91	450	244	568	300
Social sciences	4016	2284	3058	1641	406	274	393	265	159	104
Humanities and the arts	2022	1331	1702	1093	119	78	140	107	61	53
Business sector	8827	3107	2793	937	1630	583	3160	1124	1244	463
Government sector	6345	3654	3952	2403	335	179	1329	674	729	398
Tertiary education	15630	8851	12572	6848	1165	702	1177	809	716	492
Non-profit sector	8	4	6	3	-	-	2	1	-	-

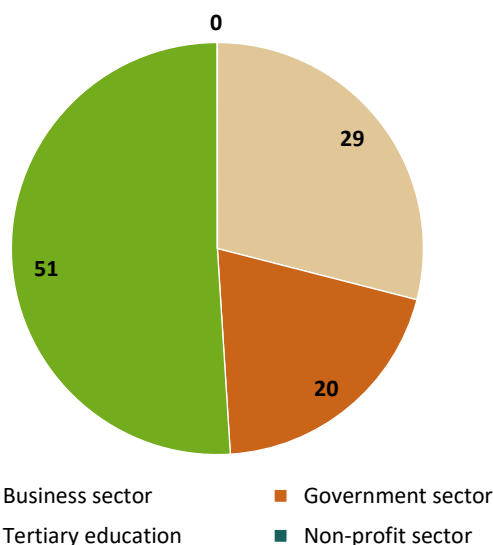
Graph 3. Employees engaged in R&D activities by fields of science, %



Graph 4. Employees engaged in R&D activities by occupation, %



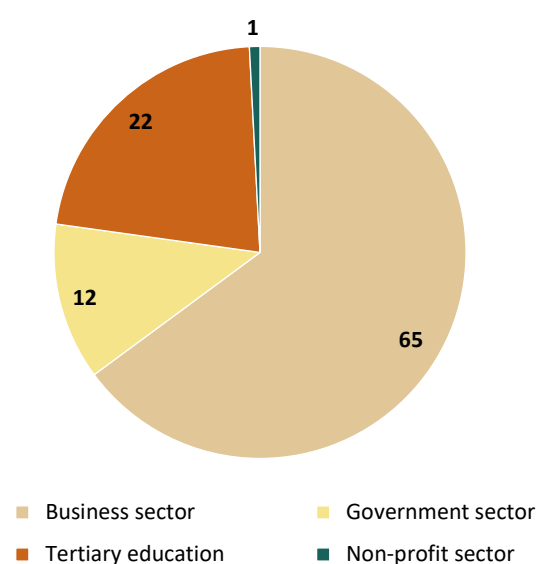
Graph 5. Employees engaged in R&D activities by sectors, %



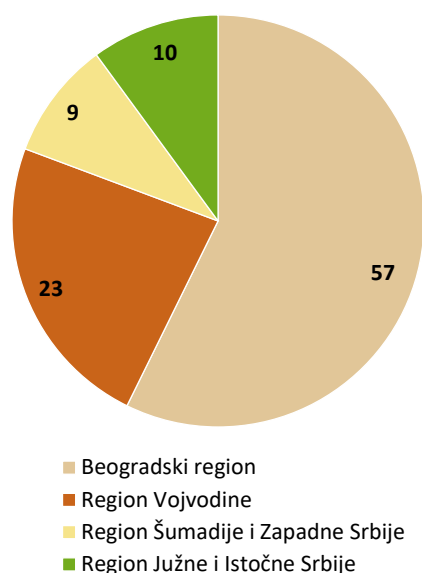
T3. R&D organizations by sectors and by regions

	Total	Business sector	Government sector	Tertiary education	Non-profit sector
REPUBLIC OF SERBIA	487	316	60	107	4
Beogradski region	279	169	52	55	3
Region Vojvodine	114	85	5	23	1
Region Šumadije i Zapadne Srbije	45	29	2	14	-
Region Južne i Istočne Srbije	49	33	1	15	-
Region Kosovo I Metohija

Graph 6. R&D organizations by sectors, %



Graph 7. R&D organizations by regions, %



Methodological explanations and definitions

Data source

The presented data are the result of a regular annual survey on research and development activities, conducted in 2024. The basic set of survey is all organizations that are engaged in research and development (R&D), regardless of whether it is their core activity or not.

The main sources of data are: documentation of personnel services on the distribution of employees on R&D jobs, accounting records on realized income and calculated investments in R&D, as well as documentation of professional services on the results of research work.

Coverage and comparability

Data on the R&D activity of higher education institutions and institutes are collected as a complete coverage (all faculties/academies, regardless of ownership status; all institutes: scientific and research and development), while data on the R&D activity of business enterprises are collected on the basis of registered activity and final accounts (shown investments in science in the statistical annex AOP 9091). Also, the report of the Tax Administration on the adopted decisions on tax benefits for business entities that had investments in scientific research or innovative activities is used. All data on the number of research organizations and employees refer to the situation on December 31 of the respective year, while the data on research works, income and expenses refer to the entire year.

The methodology for conducting survey is aligned with international standards set by the OECD and published in the Frascati manual (The Measurement of Scientific and Technological Activities - Proposed Standard Practice for Surveys of Research and Experimental Development - Frascati Manual).

Definitions of basic features

Science is a set of systematised and argument-based knowledge, i.e. facts, concepts, principles, data, information, theories, laws and patterns in a selected historical period about objective reality, i.e. nature and society, obtained through the application of objective scientific methods, and which main purpose and objective is to apprehend the laws and patterns about the past, the present and future of natural and social phenomena, as well as to improve efficient work in all fields of human activities.

Scientific research is theoretical or experimental work undertaken for acquiring new scientific knowledge and increasing human stock of knowledge. Scientific research implies basic and applied research.

Basic research implies research that increases the general stock of scientific facts and knowledge, and determines new fields of human knowledge and perception, but not involving or not necessarily involving any direct application of the obtained results.

Applied research is a theoretical or experimental work undertaken in order to acquire new knowledge, and directed towards resolving any practical task, i.e. achieving any practical objective.

Experimental (development) research is systematic work, based on knowledge acquired through basic or applied research, i.e. practical experience, which is primarily directed towards introducing new processes, products and services.

Scientific development work is a systematic activity which, through the application of scientific methods, brings new scientific knowledge, i.e. uses creatively existing knowledge for new applications. This is creative work on acquiring new knowledge, which is aimed to raise the general civilization level of society and touse that knowledge in all fields of socio-economic development.

Expenditure on research and development by types are divided into current costs and capital expenditures.

Current costs include: labour costs; other R&D employees' remuneration costs, other current costs (material costs for R&D work – raw materials, supplies, energy; payments based on work by contract and work for hire; daily allowances, travel costs, representation, etc).

Capital expenditures include expenditures on land and buildings; machines and equipments; patents, licences, studies and projects; software and hardware (implying total expenditures related to the purchase of computers, devices, systems, components and equipment, as well as purchase costs or costs for software development for own account), and other expenditures.

Non-financial (business) sector includes business entities and organizations which primary activity is the market production of goods and services and theirs ale at economically significant prices, as well as R&D incorporated units.

Tertiary education includes higher schools and universities within corporate units, faculties, academies and R&D institutes, whatever the sources of finance and legal status. This sector covers also research institutes and clinics under the direct control or administration of a tertiary education organisation.

Government sector includes organisations, offices and other bodies, except tertiary education, furnishing to the community free common services which could not be provided under market conditions, and which reflect the economic and social policy of the society; by definition this sector covers the activities of the administration, defence and public order enforcement; health, education, culture, recreation and other social services.

Non-profit sector includes non-market private non-profit organisations serving households without charging or at a low price. Those organisations may be founded by citizens' associations, for providing goods and services to the members or for general purposes.

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