



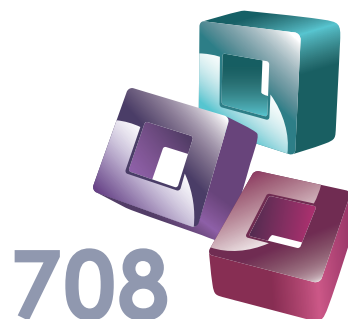
Statistical Office of the Republic of Serbia



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BULLETIN

RESEARCH AND DEVELOPMENT IN THE REPUBLIC OF SERBIA, 2023



Belgrade, 2024

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PREFACE

The Statistical Office of the Republic of Serbia publishes the results of the regular annual statistical survey on research and development organizations entitled “Annual Report on Research and Development – Form IR”. The results refer to 2023 and are published for the territory of the Republic of Serbia and the regions: Beogradski region, Region Vojvodine, Region Šumadije and Zapadne Srbije, and Region Južne and Istočne Srbije.

R&D organizations and their activity are classified according to the type, size class and scientific field. Employees in the R&D activity are shown by occupation, scientific qualifications, type of employment and working hours, as well as by full-time equivalent. The data on research personnel, by age, have been published annually since 2007. In tables on research projects, finalised and non-finalised works are shown by type, ordering party and scientific field. The bulletin contains a tabulated presentation of funds for R&D work by origin, costs by source and use, as well as a presentation of investments in the R&D activity.

All the data are available on the level of scientific field, both for R&D organizations and R&D projects.

The survey data have been published since 1965 in statistical bulletins of the Federal Statistical Office, and since 2002 by the Statistical Office of the Republic of Serbia.

Belgrade, 2024

Acting Director
Branko Josipović

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Legal basis

The survey "Annual Report on Research and Development" is carried out on the basis of the Law on Official Statistics ("Official Journal of the RS", number 104/2009).

METHODOLOGICAL BASIS

Objective and scope of the statistical survey

The R&D activity, as an activity of particular importance for the Republic of Serbia, is an integral part of the international, scientific, educational, cultural and artistic world. R&D is an activity of special significance for the complete development of the Republic of Serbia based on knowledge, experience and skills, combined with tertiary education is the principle factor and catalyst of economic and social growth.

R&D is a systematic creative work undertaken in view of discovering new stock of knowledge, in order to raise the general civilization level of the society and to use the knowledge in all social fields. The Annual Report on Research and Experimental Development (hereinafter: R&D) provides data on the scientific potential:

- number of organizations and units engaged in the R&D activity: by type, scientific field and section of economic activity;
- personnel: by sex, educational attainment, occupation, type of employment, working hours, full-time equivalent (FTE) and age;
- funds (receipts, expenditure and investments): by type of research, funding sources and use;
- results of R&D work: R&D works (finalised works, on-going works and published works): by type of research, scientific field.

Reporting units, statistical units

The population of the research and unit of observation of the statistical survey are all organisations engaged in the R&D activity, whether the latter is the principal activity or not.

Survey coverage

The reporting units of the survey are:

- R&D institutes and institutes of national interest for the Republic of Serbia; independent R&D organisations, business entities and institutions which principal or predominant activity is R&D.
- R&D units incorporated in enterprises or institutions.
- Tertiary educational institutions (faculties and arts academies), which activity, pursuant to the Law, is education and R&D-related, have been covered by this survey since 1978;
- Non-profit organisations – associations engaged in this activity.

Method, timetable and sources for data collection

The survey is conducted annually and the questionnaires are sent to reporting units the third week of March. A unique questionnaire is used for all reporting units, which fill in the form IR in April of the current year, and data refer to the previous (reference) year, i.e. to the state at the end of the reference year.

Data on the R&D activity of tertiary education institutions and institutes are collected on full coverage (all faculties/academies, whatever the ownership, all R&D institutes), while the data on the R&D activity of business entities are collected based on the registered activity and final financial statements (investments in science are presented 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 R&D organisations and employees are shown as of 31 December of the reference year, while those on R&D works, receipts and expenditure refer to the whole year.

The main data sources are: human resources records on employees appointed to R&D, accounting records on realised receipts and accounted investments in R&D, as well as records of specialised services on the result of R&D activities – projects, works, etc.

List and definitions of main concepts - indicators

Type of R&D organisation: R&D organisations are institutions and other legal entities, as well as units incorporated in business entities and institutions, which activity is completely or predominantly R&D-related. All the organisations are classified into:

- independent R&D institutes;
- Centres of excellence: the status of the centre can be acquired by an institute, i.e. tertiary education institution or their organisational part(s) if they have achieved in a five-year period ultimate and internationally recognised scientific and professional results in a specific scientific discipline based on what they have an extended international scientific, technical and technological co-operation;
- Tertiary education institution;
- R&D units of business entities;
- Non-profit organisations/associations.

Sector of performance is determined according to the division of the economic activity in which R&D is performed. There are five sectors:

- **Business sector** covers business entities and organisations which primary activity is the market production of goods and services, and their sale at economically significant prices, as well as R&D units incorporated in a business entity.
- **Government sector** includes organisations, department offices and other bodies, other than tertiary education, furnishing common and free services which cannot be provided to society under market conditions and reflects the economical and social policy of society. By definition, this sector covers: activities of the administration, defence and public order; health, education, culture, recreation and other social services.
- **Tertiary education** sector covers universities with incorporated units, faculties and academies and R&D institutes whatever their funding sources and legal status. This sector includes R&D institutes and clinics operating under the direct control of or administered by the tertiary education organisation.
- **Non-profit sector** covers non-market, private non-profit organisation serving households free of charge or at low cost. These organisations may be created by citizens' associations in order to provide goods and services to the members of the association or for general purposes. This sector includes professional associations, charitable organisations, humanitarian organisations, trade associations, consumers' associations, etc.
- **Sector "abroad"** covers organisations and individuals located beyond the political boundaries of the country, as well as related land owned by these organisations. It also includes all international organisations, including their facilities on the national territory.

Personnel:

- **Researcher** is a person with at least tertiary educational attainment, i.e. having at least completed undergraduate academic studies and who is engaged in R&D work and holding the title pursuant to the Law. Depending on realised results in R&D, the researcher can acquire the research title: researcher-apprentice and researcher-associate, and the scientific title: senior scientific associate and scientific advisor.
- **Assistant-researchers** do not have R&D knowledge, they cooperate directly with researchers by performing professional activities concerning R&D duties, but are not holders of the R&D project (laboratory technicians, librarians, IT specialists, lectors, etc.).
- **Technicians** are persons whose main duties require technical knowledge and experience in one or more areas in engineering, natural, social sciences and humanities. They perform within R&D scientific and technical duties that include the application of concepts and operational methods, and the use of R&D equipment, usually under researcher's supervision.
- **Other personnel** (auxiliary) includes the employees who carry out all activities contributing directly to performing R&D, which are not conducted by researchers or technicians and professional personnel. These activities include secretary and other administrative work, management of materials or equipment required for the implementation of the R&D project, such as planning, information and financial support, legal services, assistance in assembling, maintaining, repairing scientific equipment and instruments. Managers and administrators are also included here and are mainly engaged in financial and personnel issues and general administration if their activities are directly connected with R&D projects (treasurers, recorders, secretaries, jurists, etc.). Also, other personnel dealing with ancillary activities in R&D organisations includes employees in workshops, on agricultural land, couriers, switchboard operators, employees engaged in the maintenance of buildings, equipment and rolling stock, suppliers, etc.
- **It excludes** the employees engaged in protection and security service or canteen employees, cleaning staff and related personnel (building concierge, doormen, cleaning ladies, coffee makers, etc.) even though their salaries and wages are included in other current costs when measuring R&D expenditure.

R&D projects and studies: shown are works completed from 1st January to 31st December, whatever their beginning. Works not being ordered by ordering parties are excluded.

- **Basic researches** covers those researches that enlarge the general stock of scientific facts and knowledge that determine the areas of human knowledge, whose obtained results are not or are not necessarily directly applied practically. Basic researches discover phenomena, processes, causal connections and principles in nature, society and human thinking, primarily to advance human knowledge and acquire basic knowledge, which is further used as a ground for applied and experimental researches as well as for those that do not have direct commercial objectives.
- **Applied researches** are theoretical or experimental works undertaken to acquire new knowledge, and focused on resolving a practical task, i.e. realise a practical objective. Applied researches broaden and deepen current knowledge in order to resolve specific issues. They are undertaken to examine possible applications of the results of basic researches or to define new methods or procedures for achieving a practical objective set in advance. Therefore, applied researches are focused on discovering new scientific knowledge, applying that knowledge for the purpose of achieving particular commercial objectives.
- **Experimental (development) research** is a systematic work activity based on the results of the basic and applied researches, i.e. practical experiences, which is primarily focused on introducing new ones or on considerable improvement of existing processes, products and services. These are processes that occur between invention and production: design experimenting and development of prototypes, experiments, pilot projects, models, new solution. These researches have an extremely practical objective, their main feature is a clear use, therefore a direct and quickly achieved benefit in a narrow area. Experimental researches are also called technological improvements.

Level of data representativeness

All data are available for R&D organisations, scientific fields, type of research, type of employment and personnel's working hours, level of certain activity classes (2010 CA) and according to the territorial principle (up to NSTJ 2 level).

Survey organisation

The Statistical Office of the Republic of Serbia, with the help of the Ministry of Science, Technological Development and Innovation, prepares and carries out the survey on R&D organisations.

The Office defines and produces uniform methodological basis and tools for the survey, compiles address records of reporting units, prints the questionnaires and other materials for the carrying out of the survey, sends the questionnaires to the reporting units, collects the questionnaires, controls the coverage, response accuracy and data completeness, transmit data electronically, makes calculation and logical controls, processes the data and publishes the results for the Republic of Serbia in the "Statistical Yearbook of Serbia", Statistical Release „Research and development activity“, as well as in this bulletin.

Harmonisation with international recommendations, standards and practice

The methodology for this survey is harmonised with international standards to the greatest possible extent (as much as allowed by our laws), methodological recommendations from the Frascati Manual, with the exception of some financial indicators, which are difficult to present due to differences in financing the R&D work of our country in relation to most of EU member countries and other international organisations.

SURVEY TOOLS

Questionnaires and instructions for filling the questionnaires

- questionnaire: IR;
- instructions for filling in the questionnaires;
- web questionnaire is available on the website of the Statistical Office of the Republic of Serbia www.stat.gov.rs.

List of nomenclatures and classifications used in the survey

- Classification of Activities – CA ("Official Journal of the RS", number 54/2010)
- Nomenclature of statistical territorial units NSTJ ("Official Journal of the RS", number 109/09 and 46/10)
- Classification of scientific fields FORD (Fields of Research and Development, OECD 2015), Frascati Manual
- International Standard Classification of Education ISCED-F 2013 (the classifications and nomenclature are available on the website of the Statistical Office of the Republic of Serbia, www.stat.gov.rs)

Previous editions

Data on R&D organizations for previous years are available in the bulletins of the Federal Statistical Office, and since 2002 they have been published by the Statistical Office of the Republic of Serbia.



Symbols

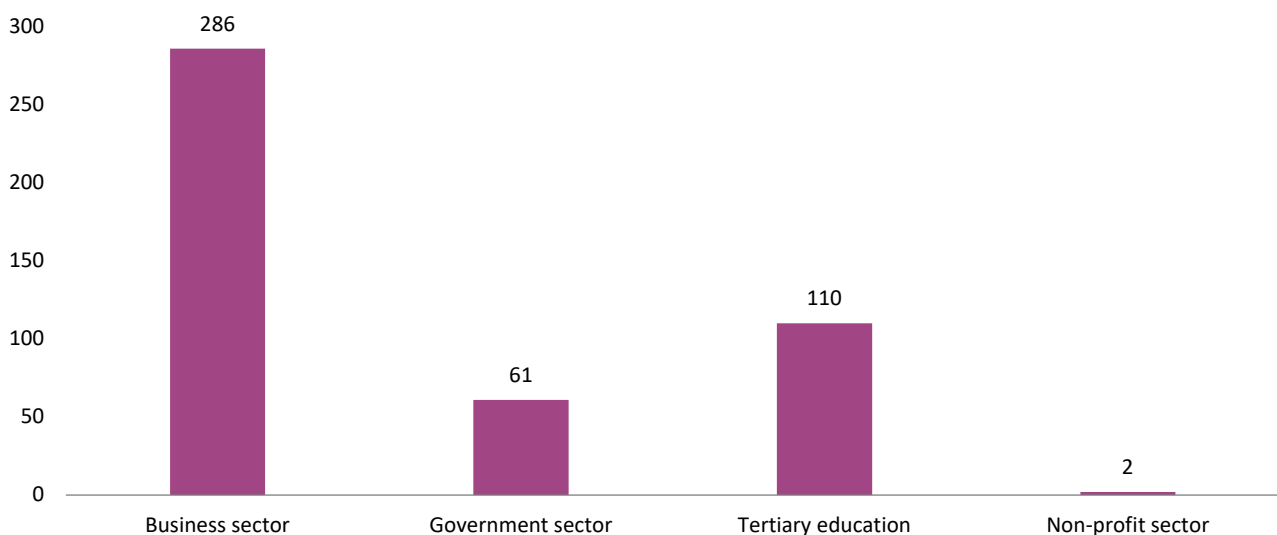
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RESEARCH AND DEVELOPMENT, 2023

1.1. R&D organizations by sectors and fields of science, 2023

	Total	Business sector	Government sector	Tertiary education	Non-profit sector
REPUBLIC OF SERBIA	459	286	61	110	2
Natural sciences	141	110	14	16	1
Engineering and technology	166	133	10	23	-
Medical and health sciences	27	13	4	10	-
Agricultural and veterinary sciences	32	14	12	6	-
Social sciences	67	15	10	41	1
Humanities and arts	26	1	11	14	-
Beogradski region	258	148	51	58	1
Natural sciences	84	60	12	12	-
Engineering and technology	75	60	6	9	-
Medical and health sciences	20	11	4	5	-
Agricultural and veterinary sciences	16	5	8	3	-
Social sciences	42	11	10	20	1
Humanities and arts	21	1	11	9	-
Region Vojvodine	111	83	6	21	1
Natural sciences	40	36	1	2	1
Engineering and technology	43	36	3	4	-
Medical and health sciences	4	1	-	3	-
Agricultural and veterinary sciences	9	6	2	1	-
Social sciences	13	4	-	9	-
Humanities and arts	2	-	-	2	-
Region Šumadije i Zapadne Srbije	47	29	2	16	-
Natural sciences	5	3	1	1	-
Engineering and technology	28	24	-	4	-
Medical and health sciences	1	-	-	1	-
Agricultural and veterinary sciences	5	2	1	2	-
Social sciences	7	-	-	7	-
Humanities and arts	1	-	-	1	-
Region Južne i Istočne Srbije	43	26	2	15	-
Natural sciences	12	11	-	1	-
Engineering and technology	20	13	1	6	-
Medical and health sciences	2	1	-	1	-
Agricultural and veterinary sciences	2	1	1	-	-
Social sciences	5	-	-	5	-
Humanities and arts	2	-	-	2	-
Region Kosovo i Metohija	...	...	...	...	...



2.1. Full-time and part-time employees engaged in R&D activities, by sectors, fields of science and sex, 2023 (head count)

	Total		Researchers		Assistant-researchers		Technicians		Other personnel	
	All	Women	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	27078	14299	18417	9849	3398	1635	3514	1782	1749	1033
Natural sciences	7097	3762	4973	2782	907	404	820	345	397	231
Engineering and technology	7587	3146	4446	1864	1454	557	1298	518	389	207
Medical and health sciences	3873	2417	3138	1877	221	151	336	269	178	120
Agricultural and veterinary sciences	2430	1330	1231	683	185	97	510	279	504	271
Social sciences	3824	2132	2842	1474	381	253	409	273	192	132
Humanities and arts	2267	1512	1787	1169	250	173	141	98	89	72
Business sector	5435	1960	2226	831	1847	661	1076	349	286	119
Natural sciences	2183	760	1025	368	535	174	493	173	130	45
Engineering and technology	2808	943	971	318	1201	423	530	151	106	51
Medical and health sciences	236	158	169	117	34	27	5	3	28	11
Agricultural and veterinary sciences	118	56	37	19	41	18	31	14	9	5
Social sciences	85	42	22	8	33	19	17	8	13	7
Humanities and arts	5	1	2	1	3	-	-	-	-	-
Government sector	6173	3590	3807	2345	370	194	1221	613	775	438
Natural sciences	2392	1508	1851	1203	101	43	256	138	184	124
Engineering and technology	1266	615	434	240	141	73	539	228	152	74
Medical and health sciences	288	207	252	175	12	12	18	15	6	5
Agricultural and veterinary sciences	1249	690	427	267	91	49	340	175	391	199
Social sciences	491	274	417	213	5	4	44	36	25	21
Humanities and arts	487	296	426	247	20	13	24	21	17	15
Tertiary education	15468	8747	12382	6671	1181	780	1217	820	688	476
Natural sciences	2522	1494	2097	1211	271	187	71	34	83	62
Engineering and technology	3513	1588	3041	1306	112	61	229	139	131	82
Medical and health sciences	3349	2052	2717	1585	175	112	313	251	144	104
Agricultural and veterinary sciences	1063	584	767	397	53	30	139	90	104	67
Social sciences	3246	1814	2401	1251	343	230	348	229	154	104
Humanities and arts	1775	1215	1359	921	227	160	117	77	72	57
Non-profit sector	2	2	2	2	-	-	-	-	-	-
Social sciences	2	2	2	2	-	-	-	-	-	-
Beogradski region	15147	8252	10542	5728	1517	808	1975	1002	1113	714
Natural sciences	4828	2676	3378	1959	600	266	591	284	259	167
Engineering and technology	3100	1240	1919	760	241	106	689	234	251	140
Medical and health sciences	2245	1436	1727	1057	164	111	176	148	178	120
Agricultural and veterinary sciences	1320	751	777	441	131	73	222	129	190	108
Social sciences	2134	1169	1528	760	207	129	235	160	164	120
Humanities and arts	1520	980	1213	751	174	123	62	47	71	59
Business sector	2404	981	1221	519	596	224	462	172	125	66
Natural sciences	1162	464	451	184	370	127	296	132	45	21
Engineering and technology	906	309	581	209	146	48	141	25	38	27
Medical and health sciences	233	156	167	116	33	26	5	3	28	11
Agricultural and veterinary sciences	22	11	1	1	13	5	7	5	1	-
Social sciences	76	40	19	8	31	18	13	7	13	7
Humanities and arts	5	1	2	1	3	-	-	-	-	-
Government sector	4892	2876	3282	2041	273	153	914	437	423	245
Natural sciences	2269	1443	1747	1151	95	41	251	133	176	118
Engineering and technology	778	327	170	85	67	41	429	157	112	44
Medical and health sciences	288	207	252	175	12	12	18	15	6	5
Agricultural and veterinary sciences	579	329	270	170	74	42	148	75	87	42
Social sciences	491	274	417	213	5	4	44	36	25	21
Humanities and arts	487	296	426	247	20	13	24	21	17	15

2.1. Full-time and part-time employees engaged in R&D activities, by sectors, fields of science and sex, 2023
(head count) (continued)

	Total		Researchers		Assistant-researchers		Technicians		Other personnel	
	All	Women	All	Women	All	Women	All	Women	All	Women
Tertiary education	7849	4393	6037	3166	648	431	599	393	565	403
Natural sciences	1397	769	1180	624	135	98	44	19	38	28
Engineering and technology	1416	604	1168	466	28	17	119	52	101	69
Medical and health sciences	1724	1073	1308	766	119	73	153	130	144	104
Agricultural and veterinary sciences	719	411	506	270	44	26	67	49	102	66
Social sciences	1565	853	1090	537	171	107	178	117	126	92
Humanities and arts	1028	683	785	503	151	110	38	26	54	44
Non-profit sector	2	2	2	2	-	-	-	-	-	-
Social sciences	2	2	2	2	-	-	-	-	-	-
Region Vojvodine	7487	3686	4424	2274	1487	619	1050	537	526	256
Natural sciences	1595	721	1030	498	238	111	189	48	138	64
Engineering and technology	2990	1269	1555	714	1040	371	310	148	85	36
Medical and health sciences	866	556	721	444	10	8	135	104	-	-
Agricultural and veterinary sciences	944	485	332	179	43	18	272	136	297	152
Social sciences	973	592	702	401	147	107	120	82	4	2
Humanities and arts	119	63	84	38	9	4	24	19	2	2
Business sector	2431	781	718	215	1150	394	418	127	145	45
Natural sciences	845	231	473	140	125	34	162	33	85	24
Engineering and technology	1522	523	225	64	1004	351	233	87	60	21
Medical and health sciences	1	1	1	1	-	-	-	-	-	-
Agricultural and veterinary sciences	54	24	16	10	19	8	19	6	-	-
Social sciences	9	2	3	-	2	1	4	1	-	-
Government sector	970	524	370	206	53	26	224	123	323	169
Natural sciences	54	19	42	12	4	1	-	-	8	6
Engineering and technology	295	178	204	118	34	19	39	30	18	11
Agricultural and veterinary sciences	621	327	124	76	15	6	185	93	297	152
Tertiary education	4086	2381	3336	1853	284	199	408	287	58	42
Natural sciences	696	471	515	346	109	76	27	15	45	34
Engineering and technology	1173	568	1126	532	2	1	38	31	7	4
Medical and health sciences	865	555	720	443	10	8	135	104	-	-
Agricultural and veterinary sciences	269	134	192	93	9	4	68	37	-	-
Social sciences	964	590	699	401	145	106	116	81	4	2
Humanities and arts	119	63	84	38	9	4	24	19	2	2
Region Šumadije i Zapadne Srbije	1945	1066	1581	891	147	83	180	72	37	20
Natural sciences	303	181	250	157	32	15	21	9	-	-
Engineering and technology	407	139	291	104	39	20	64	7	13	8
Medical and health sciences	391	213	326	171	40	25	25	17	-	-
Agricultural and veterinary sciences	135	76	109	56	-	-	10	10	16	10
Social sciences	435	226	367	191	15	7	45	26	8	2
Humanities and arts	274	231	238	212	21	16	15	3	-	-
Business sector	265	78	135	39	36	18	83	14	11	7
Natural sciences	25	8	6	3	3	1	16	4	-	-
Engineering and technology	209	54	109	28	33	17	64	7	3	2
Agricultural and veterinary sciences	31	16	20	8	-	-	3	3	8	5
Government sector	98	67	82	54	2	1	8	8	6	4
Natural sciences	69	46	62	40	2	1	5	5	-	-
Agricultural and veterinary sciences	29	21	20	14	-	-	3	3	6	4

2.1. Full-time and part-time employees engaged in R&D activities, by sectors, fields of science and sex, 2023 (head count) (continued)

	Total		Researchers		Assistant-researchers		Technicians		Other personnel	
	All	Women	All	Women	All	Women	All	Women	All	Women
Tertiary education	1582	921	1364	798	109	64	89	50	20	9
Natural sciences	209	127	182	114	27	13	-	-	-	-
Engineering and technology	198	85	182	76	6	3	-	-	10	6
Medical and health sciences	391	213	326	171	40	25	25	17	-	-
Agricultural and veterinary sciences	75	39	69	34	-	-	4	4	2	1
Social sciences	435	226	367	191	15	7	45	26	8	2
Humanities and arts	274	231	238	212	21	16	15	3	-	-
Region Južne i Istočne Srbije	2499	1295	1870	956	247	125	309	171	73	43
Natural sciences	371	184	315	168	37	12	19	4	-	-
Engineering and technology	1090	498	681	286	134	60	235	129	40	23
Medical and health sciences	371	212	364	205	7	7	-	-	-	-
Agricultural and veterinary sciences	31	18	13	7	11	6	6	4	1	1
Social sciences	282	145	245	122	12	10	9	5	16	8
Humanities and arts	354	238	252	168	46	30	40	29	16	11
Business sector	335	120	152	58	65	25	113	36	5	1
Natural sciences	151	57	95	41	37	12	19	4	-	-
Engineering and technology	171	57	56	17	18	7	92	32	5	1
Medical and health sciences	2	1	1	-	1	1	-	-	-	-
Agricultural and veterinary sciences	11	5	-	-	9	5	2	-	-	-
Government sector	213	123	73	44	42	14	75	45	23	20
Engineering and technology	193	110	60	37	40	13	71	41	22	19
Agricultural and veterinary sciences	20	13	13	7	2	1	4	4	1	1
Tertiary education	1951	1052	1645	854	140	86	121	90	45	22
Natural sciences	220	127	220	127	-	-	-	-	-	-
Engineering and technology	726	331	565	232	76	40	72	56	13	3
Medical and health sciences	369	211	363	205	6	6	-	-	-	-
Social sciences	282	145	245	122	12	10	9	5	16	8
Humanities and arts	354	238	252	168	46	30	40	29	16	11
Region Kosovo i Metohija	...	...	...	...	...	...	...	...	...	...

2.2. Full-time and part-time employees engaged in R&D activities by sectors, fields of science and sex, expressed in full-time equivalent, 2023

	Total		Researchers		Assistant-researchers		Technicians		Other personnel	
	All	Women	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	24484.6	13051.3	16704.7	9025.3	3071.2	1484.6	3097.3	1588.9	1611.4	952.5
Natural sciences	6328.1	3447.8	4548.3	2600.6	752.1	343.3	670.2	291.3	357.5	212.6
Engineering and technology	6905.2	2858.8	3991.9	1682.6	1369.2	518.9	1184.8	472.9	359.3	184.4
Medical and health sciences	3293.5	2065.9	2634.3	1581.9	193.5	131.9	289.3	232.4	176.4	119.7
Agricultural and veterinary sciences	2250.2	1246.5	1192.4	665.2	161.3	89.1	428.7	239.5	467.8	252.7
Social sciences	3551.0	1982.2	2626.7	1363.5	350.7	231.6	385.4	255.6	188.2	131.5
Humanities and arts	2156.6	1450.1	1711.1	1131.5	244.4	169.8	138.9	97.2	62.2	51.6
Business sector	4557.7	1661.0	1830.3	704.0	1612.6	569.6	857.1	277.6	257.7	109.8
Natural sciences	1637.3	555.2	780.9	274.5	391.6	121.1	354.8	119.8	110.0	39.8
Engineering and technology	2515.9	865.2	826.7	288.2	1128.3	392.2	459.0	137.0	101.9	47.8
Medical and health sciences	231.0	155.0	166.9	115.6	32.7	25.7	5.0	3.0	26.4	10.7
Agricultural and veterinary sciences	91.8	46.0	34.6	17.2	25.3	12.4	22.9	11.4	9.0	5.0
Social sciences	76.7	38.6	19.2	7.5	31.7	18.2	15.4	6.4	10.4	6.5
Humanities and arts	5.0	1.0	2.0	1.0	3.0	-	-	-	-	-
Government sector	5949.7	3469.9	3726.2	2300.3	350.0	183.8	1139.1	570.5	734.4	415.3
Natural sciences	2368.1	1496.3	1830.0	1192.6	99.4	43.0	256.0	138.0	182.7	122.7
Engineering and technology	1244.7	604.6	422.7	234.4	134.4	69.2	536.6	228.0	151.0	73.0
Medical and health sciences	243.9	175.3	218.6	153.3	7.6	7.6	11.7	9.4	6.0	5.0
Agricultural and veterinary sciences	1127.7	631.8	422.5	266.0	83.6	47.0	266.8	138.1	354.8	180.7
Social sciences	487.6	272.5	413.6	211.5	5.0	4.0	44.0	36.0	25.0	21.0
Humanities and arts	477.7	289.4	418.8	242.5	20.0	13.0	24.0	21.0	14.9	12.9
Tertiary education	13976.9	7920.1	11147.9	6020.7	1108.6	731.2	1101.1	740.8	619.3	427.4
Natural sciences	2322.7	1396.3	1937.4	1133.5	261.1	179.2	59.4	33.5	64.8	50.1
Engineering and technology	3144.6	1389.0	2742.5	1160.0	106.5	57.5	189.2	107.9	106.4	63.6
Medical and health sciences	2818.6	1735.6	2248.8	1313.0	153.2	98.6	272.6	220.0	144.0	104.0
Agricultural and veterinary sciences	1030.7	568.7	735.3	382.0	52.4	29.7	139.0	90.0	104.0	67.0
Social sciences	2986.4	1670.8	2193.6	1144.2	314.0	209.4	326.0	213.2	152.8	104.0
Humanities and arts	1673.9	1159.7	1290.3	888.0	221.4	156.8	114.9	76.2	47.3	38.7
Non-profit sector	0.3	0.3	0.3	0.3	-	-	-	-	-	-
Social sciences	0.3	0.3	0.3	0.3	-	-	-	-	-	-
Beogradski region	13785.6	7525.2	9677.7	5255.6	1362.9	745.3	1740.8	878.6	1004.2	645.7
Natural sciences	4369.3	2479.1	3140.9	1852.1	507.5	231.4	490.4	246.0	230.5	149.6
Engineering and technology	2910.0	1143.1	1797.1	702.3	214.8	98.1	666.7	218.1	231.4	124.6
Medical and health sciences	1916.9	1206.7	1442.1	862.7	156.5	104.4	141.9	119.9	176.4	119.7
Agricultural and veterinary sciences	1182.8	688.6	741.0	425.0	119.8	69.9	161.7	100.0	160.3	93.7
Social sciences	1996.5	1089.1	1419.0	699.5	195.9	121.7	220.2	148.4	161.4	119.5
Humanities and arts	1410.1	918.6	1137.6	714.0	168.4	119.8	59.9	46.2	44.2	38.6
Business sector	2049.8	843.1	1094.0	470.1	480.9	184.7	363.1	127.3	111.8	61.0
Natural sciences	891.6	354.1	362.7	144.8	285.9	98.0	207.0	94.5	36.0	16.8
Engineering and technology	839.3	289.3	546.7	201.2	119.8	40.1	134.8	21.0	38.0	27.0
Medical and health sciences	228.0	153.0	164.9	114.6	31.7	24.7	5.0	3.0	26.4	10.7
Agricultural and veterinary sciences	16.7	8.6	1.0	1.0	9.8	4.2	4.9	3.4	1.0	-
Social sciences	69.2	37.1	16.7	7.5	30.7	17.7	11.4	5.4	10.4	6.5
Humanities and arts	5.0	1.0	2.0	1.0	3.0	-	-	-	-	-
Government sector	4722.6	2782.9	3222.7	2005.0	260.5	146.6	849.5	404.0	389.9	227.3
Natural sciences	2256.2	1434.4	1736.2	1143.7	94.3	41.0	251.0	133.0	174.7	116.7
Engineering and technology	778.0	327.0	170.0	85.0	67.0	41.0	429.0	157.0	112.0	44.0
Medical and health sciences	243.9	175.3	218.6	153.3	7.6	7.6	11.7	9.4	6.0	5.0
Agricultural and veterinary sciences	479.2	284.3	265.5	169.0	66.6	40.0	89.8	47.6	57.3	27.7
Social sciences	487.6	272.5	413.6	211.5	5.0	4.0	44.0	36.0	25.0	21.0
Humanities and arts	477.7	289.4	418.8	242.5	20.0	13.0	24.0	21.0	14.9	12.9

2.2. Full-time and part-time employees engaged in R&D activities by sectors, fields of science and sex, expressed in full-time equivalent, 2023 (continued)

	Total		Researchers		Assistant-researchers		Technicians		Other personnel	
	All	Women	All	Women	All	Women	All	Women	All	Women
Tertiary education	7012.9	3898.9	5360.7	2780.2	621.5	414.0	528.2	347.3	502.5	357.4
Natural sciences	1221.5	690.6	1042.0	563.6	127.3	92.4	32.4	18.5	19.8	16.1
Engineering and technology	1292.7	526.8	1080.4	416.1	28.0	17.0	102.9	40.1	81.4	53.6
Medical and health sciences	1445.0	878.4	1058.6	594.8	117.2	72.1	125.2	107.5	144.0	104.0
Agricultural and veterinary sciences	686.9	395.7	474.5	255.0	43.4	25.7	67.0	49.0	102.0	66.0
Social sciences	1439.4	779.2	988.4	480.2	160.2	100.0	164.8	107.0	126.0	92.0
Humanities and arts	927.4	628.2	716.8	470.5	145.4	106.8	35.9	25.2	29.3	25.7
Non-profit sector	0.3	0.3	0.3	0.3	-	-	-	-	-	-
Social sciences	0.3	0.3	0.3	0.3	-	-	-	-	-	-
Region Vojvodine	6844.3	3414.9	3991.9	2103.1	1391.6	568.7	953.1	492.5	507.7	250.6
Natural sciences	1352.8	630.1	871.2	437.4	206.6	94.5	148.0	35.2	127.0	63.0
Engineering and technology	2724.1	1156.8	1360.2	638.1	1001.0	352.8	281.2	132.3	81.7	33.6
Medical and health sciences	849.7	548.1	704.8	436.1	10.0	8.0	134.9	104.0	-	-
Agricultural and veterinary sciences	911.9	469.2	329.4	177.2	36.5	16.5	252.5	125.5	293.5	150.0
Social sciences	887.3	548.2	642.8	376.8	128.5	92.9	112.5	76.5	3.5	2.0
Humanities and arts	118.5	62.5	83.5	37.5	9.0	4.0	24.0	19.0	2.0	2.0
Business sector	2092.9	672.4	517.5	154.3	1081.8	363.3	361.9	112.2	131.7	42.6
Natural sciences	627.6	156.5	335.9	93.6	96.7	19.7	121.0	20.2	74.0	23.0
Engineering and technology	1416.2	493.7	164.5	51.5	971.6	336.6	222.4	86.0	57.7	19.6
Medical and health sciences	1.0	1.0	1.0	1.0	-	-	-	-	-	-
Agricultural and veterinary sciences	40.6	19.7	13.6	8.2	12.5	6.5	14.5	5.0	-	-
Social sciences	7.5	1.5	2.5	-	1.0	0.5	4.0	1.0	-	-
Government sector	926.8	501.6	353.8	199.9	45.5	22.2	209.0	113.5	318.5	166.0
Natural sciences	48.2	18.5	37.1	11.5	3.1	1.0	-	-	8.0	6.0
Engineering and technology	276.1	167.6	192.7	112.4	27.4	15.2	39.0	30.0	17.0	10.0
Agricultural and veterinary sciences	602.5	315.5	124.0	76.0	15.0	6.0	170.0	83.5	293.5	150.0
Tertiary education	3824.6	2240.9	3120.6	1748.9	264.3	183.2	382.2	266.8	57.5	42.0
Natural sciences	677.0	455.1	498.2	332.3	106.8	73.8	27.0	15.0	45.0	34.0
Engineering and technology	1031.8	495.5	1003.0	474.2	2.0	1.0	19.8	16.3	7.0	4.0
Medical and health sciences	848.7	547.1	703.8	435.1	10.0	8.0	134.9	104.0	-	-
Agricultural and veterinary sciences	268.8	134.0	191.8	93.0	9.0	4.0	68.0	37.0	-	-
Social sciences	879.8	546.7	640.3	376.8	127.5	92.4	108.5	75.5	3.5	2.0
Humanities and arts	118.5	62.5	83.5	37.5	9.0	4.0	24.0	19.0	2.0	2.0
Region Šumadije i Zapadne Srbije	1526.8	888.6	1264.2	753.1	115.4	63.4	120.7	58.9	26.5	13.2
Natural sciences	291.7	174.6	240.4	151.5	32.0	15.0	19.3	8.1	-	-
Engineering and technology	258.9	92.8	204.4	73.1	28.1	12.9	20.2	3.6	6.2	3.2
Medical and health sciences	156.5	99.7	124.0	78.7	20.0	12.5	12.5	8.5	-	-
Agricultural and veterinary sciences	132.0	74.0	109.0	56.0	-	-	10.0	10.0	13.0	8.0
Social sciences	413.7	216.5	348.4	181.8	14.3	7.0	43.7	25.7	7.3	2.0
Humanities and arts	274.0	231.0	238.0	212.0	21.0	16.0	15.0	3.0	-	-
Business sector	176.2	56.8	104.4	31.0	25.1	10.9	37.5	9.7	9.2	5.2
Natural sciences	23.1	6.9	5.8	2.8	3.0	1.0	14.3	3.1	-	-
Engineering and technology	122.1	33.9	78.6	20.2	22.1	9.9	20.2	3.6	1.2	0.2
Agricultural and veterinary sciences	31.0	16.0	20.0	8.0	-	-	3.0	3.0	8.0	5.0
Government sector	89.7	62.4	76.7	51.4	2.0	1.0	8.0	8.0	3.0	2.0
Natural sciences	63.7	43.4	56.7	37.4	2.0	1.0	5.0	5.0	-	-
Agricultural and veterinary sciences	26.0	19.0	20.0	14.0	-	-	3.0	3.0	3.0	2.0

2.2. Full-time and part-time employees engaged in R&D activities by sectors, fields of science and sex, expressed in full-time equivalent, 2023 (continued)

	Total		Researchers		Assistant-researchers		Technicians		Other personnel	
	All	Women	All	Women	All	Women	All	Women	All	Women
Tertiary education	1260.9	769.4	1083.1	670.7	88.3	51.5	75.2	41.2	14.3	6.0
Natural sciences	204.9	124.3	177.9	111.3	27.0	13.0	-	-	-	-
Engineering and technology	136.8	58.9	125.8	52.9	6.0	3.0	-	-	5.0	3.0
Medical and health sciences	156.5	99.7	124.0	78.7	20.0	12.5	12.5	8.5	-	-
Agricultural and veterinary sciences	75.0	39.0	69.0	34.0	-	-	4.0	4.0	2.0	1.0
Social sciences	413.7	216.5	348.4	181.8	14.3	7.0	43.7	25.7	7.3	2.0
Humanities and arts	274.0	231.0	238.0	212.0	21.0	16.0	15.0	3.0	-	-
Region Južne i Istočne Srbije	2327.9	1222.6	1770.9	913.5	201.3	107.2	282.7	158.9	73.0	43.0
Natural sciences	314.3	164.0	295.8	159.6	6.0	2.4	12.5	2.0	-	-
Engineering and technology	1012.2	466.1	630.2	269.1	125.3	55.1	216.7	118.9	40.0	23.0
Medical and health sciences	370.4	211.4	363.4	204.4	7.0	7.0	-	-	-	-
Agricultural and veterinary sciences	23.5	14.7	13.0	7.0	5.0	2.7	4.5	4.0	1.0	1.0
Social sciences	253.5	128.4	216.5	105.4	12.0	10.0	9.0	5.0	16.0	8.0
Humanities and arts	354.0	238.0	252.0	168.0	46.0	30.0	40.0	29.0	16.0	11.0
Business sector	238.8	88.7	114.4	48.6	24.8	10.7	94.6	28.4	5.0	1.0
Natural sciences	95.0	37.7	76.5	33.3	6.0	2.4	12.5	2.0	-	-
Engineering and technology	138.3	48.3	36.9	15.3	14.8	5.6	81.6	26.4	5.0	1.0
Medical and health sciences	2.0	1.0	1.0	-	1.0	1.0	-	-	-	-
Agricultural and veterinary sciences	3.5	1.7	-	-	3.0	1.7	0.5	-	-	-
Government sector	210.6	123.0	73.0	44.0	42.0	14.0	72.6	45.0	23.0	20.0
Engineering and technology	190.6	110.0	60.0	37.0	40.0	13.0	68.6	41.0	22.0	19.0
Agricultural and veterinary sciences	20.0	13.0	13.0	7.0	2.0	1.0	4.0	4.0	1.0	1.0
Tertiary education	1878.5	1010.9	1583.5	820.9	134.5	82.5	115.5	85.5	45.0	22.0
Natural sciences	219.3	126.3	219.3	126.3	-	-	-	-	-	-
Engineering and technology	683.3	307.8	533.3	216.8	70.5	36.5	66.5	51.5	13.0	3.0
Medical and health sciences	368.4	210.4	362.4	204.4	6.0	6.0	-	-	-	-
Social sciences	253.5	128.4	216.5	105.4	12.0	10.0	9.0	5.0	16.0	8.0
Humanities and arts	354.0	238.0	252.0	168.0	46.0	30.0	40.0	29.0	16.0	11.0
Region Kosovo i Metohija	...	...	...	...	...	...	...	...	...	...

3.1. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, 2023 (head count)

	Full-time and part-time researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	18417	9849	12675	6828	3649	2082	2093	939
Natural sciences	4973	2782	3015	1805	1168	607	790	370
Engineering and technology	4446	1864	2654	1114	1012	503	780	247
Medical and health sciences	3138	1877	2542	1468	270	194	326	215
Agricultural and veterinary sciences	1231	683	996	542	198	118	37	23
Social sciences	2842	1474	2274	1115	496	316	72	43
Humanities and arts	1787	1169	1194	784	505	344	88	41
Business sector	2226	831	381	162	734	277	1111	392
Natural sciences	1025	368	133	47	403	151	489	170
Computer and information sciences	793	246	51	11	298	91	444	144
Chemical sciences	94	51	47	24	46	26	1	1
Earth and related environmental sciences	34	14	20	8	11	5	3	1
Biological sciences	1	1	-	-	-	-	1	1
Other natural sciences	103	56	15	4	48	29	40	23
Engineering and technology	971	318	200	90	317	120	454	108
Civil engineering	7	4	2	2	4	2	1	-
Electrical engineering, electronic engineering and information engineering	481	138	46	15	161	55	274	68
Mechanical engineering	227	46	57	18	64	14	106	14
Chemical engineering	41	21	15	8	22	12	4	1
Materials engineering	10	5	-	-	4	1	6	4
Medical engineering	25	6	4	1	6	4	15	1
Environmental engineering	54	18	18	5	13	2	23	11
Environmental biotechnology	3	1	1	-	2	1	-	-
Nano-technology	1	-	1	-	-	-	-	-
Other technologies and engineering	122	79	56	41	41	29	25	9
Medical and health sciences	169	117	6	4	1	1	162	112
Clinical medicine	140	95	2	1	-	-	138	94
Health science	1	1	-	-	1	1	-	-
Medical biotechnology	3	2	3	2	-	-	-	-
Other medical sciences	25	19	1	1	-	-	24	18
Agricultural and veterinary sciences	37	19	25	14	10	4	2	1
Agricultural sciences, forestry and fisheries	21	8	15	7	5	1	1	-
Animal and dairy science	1	1	-	-	-	-	1	1
Agricultural biotechnology	15	10	10	7	5	3	-	-
Social sciences	22	8	15	6	3	1	4	1
Economics and business	20	8	15	6	2	1	3	1
Media and communications	1	-	-	-	-	-	1	-
Other social sciences	1	-	-	-	1	-	-	-
Humanities and arts	2	1	2	1	-	-	-	-
History and archeology	2	1	2	1	-	-	-	-
Government sector	3807	2345	2823	1769	920	546	64	30
Natural sciences	1851	1203	1395	932	451	268	5	3
Mathematics	100	39	73	27	27	12	-	-
Computer and information sciences	42	12	29	7	12	4	1	1
Physical sciences	703	436	518	346	185	90	-	-
Chemical sciences	220	147	164	110	56	37	-	-
Earth and related environmental sciences	13	-	7	-	6	-	-	-
Biological sciences	494	395	367	299	123	94	4	2
Other natural sciences	279	174	237	143	42	31	-	-
Engineering and technology	434	240	283	155	132	80	19	5
Civil engineering	25	19	20	15	4	3	1	1
Electrical engineering, electronic engineering and information engineering	45	19	27	11	12	7	6	1
Materials engineering	43	26	30	18	13	8	-	-
Environmental biotechnology	99	58	79	47	20	11	-	-
Industrial biotechnology	39	18	32	16	4	1	3	1
Other technologies and engineering	183	100	95	48	79	50	9	2
Medical and health sciences	252	175	161	118	73	47	18	10
Basic medicine	142	89	75	50	49	29	18	10
Other medical sciences	110	86	86	68	24	18	-	-

3.1. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, 2023 (head count) (continued)

	Full-time and part-time researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Agricultural and veterinary sciences	427	267	341	219	77	43	9	5
Agricultural sciences, forestry and fisheries	24	17	16	12	8	5	-	-
Animal and dairy science	32	14	23	12	9	2	-	-
Veterinary sciences	63	34	52	31	10	2	1	1
Agricultural biotechnology	257	163	204	128	45	31	8	4
Other agricultural sciences	51	39	46	36	5	3	-	-
Social sciences	417	213	303	150	112	62	2	1
Psychology	66	37	48	24	18	13	-	-
Economics and business	65	39	55	32	9	6	1	1
Sociology	76	34	54	23	22	11	-	-
Law	56	27	42	20	14	7	-	-
Political science	127	52	84	34	42	18	1	-
Other social sciences	27	24	20	17	7	7	-	-
Humanities and arts	426	247	340	195	75	46	11	6
History and archeology	219	92	191	79	23	11	5	2
Languages and literature	127	93	88	65	33	24	6	4
Art (art, history of arts, performing arts, music)	23	18	17	13	6	5	-	-
Other humanities	57	44	44	38	13	6	-	-
Tertiary education	12382	6671	9470	4896	1994	1258	918	517
Natural sciences	2097	1211	1487	826	314	188	296	197
Mathematics	1016	607	658	373	91	51	267	183
Computer and information sciences	358	171	244	106	89	54	25	11
Physical sciences	87	35	65	26	22	9	-	-
Chemical sciences	164	101	139	85	22	14	3	2
Earth and related environmental sciences	245	147	214	127	30	19	1	1
Biological sciences	227	150	167	109	60	41	-	-
Engineering and technology	3041	1306	2171	869	563	303	307	134
Civil engineering	347	166	281	132	30	14	36	20
Electrical engineering, electronic engineering and information engineering	1512	581	986	310	385	196	141	75
Mechanical engineering	346	86	230	55	32	11	84	20
Chemical engineering	220	142	173	112	45	29	2	1
Materials engineering	7	5	-	-	7	5	-	-
Environmental engineering	196	91	169	76	10	6	17	9
Other technologies and engineering	413	235	332	184	54	42	27	9
Medical and health sciences	2717	1585	2375	1346	196	146	146	93
Basic medicine	1434	782	1201	630	95	67	138	85
Clinical medicine	187	92	156	75	31	17	-	-
Health science	27	10	24	7	3	3	-	-
Other medical sciences	1069	701	994	634	67	59	8	8
Agricultural and veterinary sciences	767	397	630	309	111	71	26	17
Agricultural sciences, forestry and fisheries	350	174	303	137	41	31	6	6
Veterinary sciences	119	64	101	54	-	-	18	10
Other agricultural sciences	298	159	226	118	70	40	2	1
Social sciences	2401	1251	1955	958	380	252	66	41
Psychology	57	25	57	25	-	-	-	-
Economics and business	696	352	612	289	58	43	26	20
Education	448	252	346	185	90	57	12	10
Law	346	144	298	113	39	27	9	4
Political science	147	60	109	41	38	19	-	-
Media and communications	119	77	71	50	32	22	16	5
Other social sciences	588	341	462	255	123	84	3	2
Humanities and arts	1359	921	852	588	430	298	77	35
Languages and literature	508	397	355	273	118	102	35	22
Phylosophy, ethics and religion	367	224	250	150	116	73	1	1
Art (art, history of arts, performing arts, music)	311	182	120	80	151	91	40	11
Other humanities	173	118	127	85	45	32	1	1
Non-profit sector	2	2	1	1	1	1	-	-
Social sciences	2	2	1	1	1	1	-	-
Sociology	2	2	1	1	1	1	-	-

3.1. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, 2023 (head count) (continued)

	Full-time and part-time researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Beogradski region	10542	5728	7387	4054	2107	1237	1048	437
Natural sciences	3378	1959	2263	1379	808	466	307	114
Engineering and technology	1919	760	1217	513	304	131	398	116
Medical and health sciences	1727	1057	1298	761	241	166	188	130
Agricultural and veterinary sciences	777	441	612	351	134	72	31	18
Social sciences	1528	760	1209	566	282	175	37	19
Humanities and arts	1213	751	788	484	338	227	87	40
Business sector	1221	519	281	134	304	127	636	258
Natural sciences	451	184	78	36	125	60	248	88
Computer and information sciences	258	84	2	1	51	20	205	63
Chemical sciences	88	47	47	24	41	23	-	-
Earth and related environmental sciences	34	14	20	8	11	5	3	1
Biological sciences	1	1	-	-	-	-	1	1
Other natural sciences	70	38	9	3	22	12	39	23
Engineering and technology	581	209	182	87	177	66	222	56
Civil engineering	1	-	-	-	-	-	1	-
Electrical engineering, electronic engineering and information engineering	270	87	36	15	77	26	157	46
Mechanical engineering	159	33	54	17	61	11	44	5
Chemical engineering	19	9	15	8	1	1	3	-
Medical engineering	1	1	1	1	-	-	-	-
Environmental engineering	18	5	18	5	-	-	-	-
Environmental biotechnology	1	-	1	-	-	-	-	-
Nano-technology	1	-	1	-	-	-	-	-
Other technologies and engineering	111	74	56	41	38	28	17	5
Medical and health sciences	167	116	5	4	-	-	162	112
Clinical medicine	139	95	1	1	-	-	138	94
Medical biotechnology	3	2	3	2	-	-	-	-
Other medical sciences	25	19	1	1	-	-	24	18
Agricultural and veterinary sciences	1	1	-	-	-	-	1	1
Animal and dairy science	1	1	-	-	-	-	1	1
Social sciences	19	8	14	6	2	1	3	1
Economics and business	19	8	14	6	2	1	3	1
Humanities and arts	2	1	2	1	-	-	-	-
History and archeology	2	1	2	1	-	-	-	-
Government sector	3282	2041	2460	1561	766	453	56	27
Natural sciences	1747	1151	1322	896	421	253	4	2
Mathematics	100	39	73	27	27	12	-	-
Physical sciences	703	436	518	346	185	90	-	-
Chemical sciences	220	147	164	110	56	37	-	-
Earth and related environmental sciences	13	-	7	-	6	-	-	-
Biological sciences	494	395	367	299	123	94	4	2
Other natural sciences	217	134	193	114	24	20	-	-
Engineering and technology	170	85	125	63	33	19	12	3
Civil engineering	25	19	20	15	4	3	1	1
Electrical engineering, electronic engineering and information engineering	45	19	27	11	12	7	6	1
Materials engineering	43	26	30	18	13	8	-	-
Environmental biotechnology	7	3	7	3	-	-	-	-
Industrial biotechnology	39	18	32	16	4	1	3	1
Other technologies and engineering	11	-	9	-	-	-	2	-
Medical and health sciences	252	175	161	118	73	47	18	10
Basic medicine	142	89	75	50	49	29	18	10
Other medical sciences	110	86	86	68	24	18	-	-

3.1. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, 2023 (head count) (continued)

	Full-time and part-time researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Agricultural and veterinary sciences	270	170	209	139	52	26	9	5
Agricultural sciences, forestry and fisheries	24	17	16	12	8	5	-	-
Animal and dairy science	32	14	23	12	9	2	-	-
Veterinary sciences	28	15	20	12	7	2	1	1
Agricultural biotechnology	155	99	119	78	28	17	8	4
Other agricultural sciences	31	25	31	25	-	-	-	-
Social sciences	417	213	303	150	112	62	2	1
Psychology	66	37	48	24	18	13	-	-
Economics and business	65	39	55	32	9	6	1	1
Sociology	76	34	54	23	22	11	-	-
Law	56	27	42	20	14	7	-	-
Political science	127	52	84	34	42	18	1	-
Other social sciences	27	24	20	17	7	7	-	-
Humanities and arts	426	247	340	195	75	46	11	6
History and archeology	219	92	191	79	23	11	5	2
Languages and literature	127	93	88	65	33	24	6	4
Art (art, history of arts, performing arts, music)	23	18	17	13	6	5	-	-
Other humanities	57	44	44	38	13	6	-	-
Tertiary education	6037	3166	4645	2358	1036	656	356	152
Natural sciences	1180	624	863	447	262	153	55	24
Mathematics	162	63	97	37	39	16	26	10
Computer and information sciences	358	171	244	106	89	54	25	11
Physical sciences	87	35	65	26	22	9	-	-
Chemical sciences	164	101	139	85	22	14	3	2
Earth and related environmental sciences	182	104	151	84	30	19	1	1
Biological sciences	227	150	167	109	60	41	-	-
Engineering and technology	1168	466	910	363	94	46	164	57
Civil engineering	232	111	182	84	24	10	26	17
Electrical engineering, electronic engineering and information engineering	239	63	185	45	27	9	27	9
Mechanical engineering	245	57	161	37	-	-	84	20
Chemical engineering	151	101	127	86	24	15	-	-
Materials engineering	7	5	-	-	7	5	-	-
Environmental engineering	147	67	132	57	10	6	5	4
Other technologies and engineering	147	62	123	54	2	1	22	7
Medical and health sciences	1308	766	1132	639	168	119	8	8
Basic medicine	745	406	667	356	78	50	-	-
Clinical medicine	187	92	156	75	31	17	-	-
Health science	27	10	24	7	3	3	-	-
Other medical sciences	349	258	285	201	56	49	8	8
Agricultural and veterinary sciences	506	270	403	212	82	46	21	12
Agricultural sciences, forestry and fisheries	116	62	97	51	18	10	1	1
Veterinary sciences	119	64	101	54	-	-	18	10
Other agricultural sciences	271	144	205	107	64	36	2	1
Social sciences	1090	537	891	409	167	111	32	17
Economics and business	337	170	304	146	28	20	5	4
Education	185	108	151	79	29	24	5	5
Law	188	82	153	61	29	18	6	3
Political science	147	60	109	41	38	19	-	-
Media and communications	119	77	71	50	32	22	16	5
Other social sciences	114	40	103	32	11	8	-	-
Humanities and arts	785	503	446	288	263	181	76	34
Languages and literature	270	185	174	114	61	49	35	22
Philosophy, ethics and religion	201	112	111	57	89	54	1	1
Art (art, history of arts, performing arts, music)	192	109	66	45	86	53	40	11
Other humanities	122	97	95	72	27	25	-	-
Non-profit sector	2	2	1	1	1	1	-	-
Social sciences	2	2	1	1	1	1	-	-
Sociology	2	2	1	1	1	1	-	-

3.1. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, 2023 (head count) (continued)

	Istraživači zaposleni s punim i kraćim od punog radnog vremena							
	ukupno		doktori nauka		magistratura/master/s pecijalizacija		univerzitetsko Education	
	svega	žene	svega	žene	svega	žene	svega	žene
Region Vojvodine	4424	2274	2912	1528	925	461	587	285
Natural sciences	1030	498	424	237	254	74	352	187
Engineering and technology	1555	714	850	368	491	261	214	85
Medical and health sciences	721	444	709	433	12	11	-	-
Agricultural and veterinary sciences	332	179	286	143	43	34	3	2
Social sciences	702	401	586	319	99	72	17	10
Humanities and arts	84	38	57	28	26	9	1	1
Business sector	718	215	73	19	340	105	305	91
Natural sciences	473	140	49	10	239	69	185	61
Computer and information sciences	467	136	49	10	234	66	184	60
Chemical sciences	6	4	-	-	5	3	1	1
Engineering and technology	225	64	13	2	94	32	118	30
Civil engineering	6	4	2	2	4	2	-	-
Electrical engineering, electronic engineering and information engineering	157	43	7	-	73	27	77	16
Mechanical engineering	12	1	2	-	-	-	10	1
Materials engineering	4	2	-	-	-	-	4	2
Medical engineering	2	-	2	-	-	-	-	-
Environmental engineering	36	13	-	-	13	2	23	11
Environmental biotechnology	2	1	-	-	2	1	-	-
Other technologies and engineering	6	-	-	-	2	-	4	-
Medical and health sciences	1	1	-	-	1	1	-	-
Health science	1	1	-	-	1	1	-	-
Agricultural and veterinary sciences	16	10	10	7	5	3	1	-
Agricultural sciences, forestry and fisheries	1	-	-	-	-	-	1	-
Agricultural biotechnology	15	10	10	7	5	3	-	-
Social sciences	3	-	1	-	1	-	1	-
Economics and business	1	-	1	-	-	-	-	-
Media and communications	1	-	-	-	-	-	1	-
Other social sciences	1	-	-	-	1	-	-	-
Government sector	370	206	267	145	100	60	3	1
Natural sciences	42	12	29	7	12	4	1	1
Computer and information sciences	42	12	29	7	12	4	1	1
Engineering and technology	204	118	132	74	70	44	2	-
Environmental biotechnology	92	55	72	44	20	11	-	-
Other technologies and engineering	112	63	60	30	50	33	2	-
Agricultural and veterinary sciences	124	76	106	64	18	12	-	-
Veterinary sciences	35	19	32	19	3	-	-	-
Agricultural biotechnology	89	57	74	45	15	12	-	-
Tertiary education	3336	1853	2572	1364	485	296	279	193
Natural sciences	515	346	346	220	3	1	166	125
Mathematics	452	303	283	177	3	1	166	125
Earth and related environmental sciences	63	43	63	43	-	-	-	-
Engineering and technology	1126	532	705	292	327	185	94	55
Civil engineering	36	19	30	15	6	4	-	-
Electrical engineering, electronic engineering and information engineering	930	392	550	184	286	153	94	55
Other technologies and engineering	160	121	125	93	35	28	-	-
Medical and health sciences	720	443	709	433	11	10	-	-
Other medical sciences	720	443	709	433	11	10	-	-
Agricultural and veterinary sciences	192	93	170	72	20	19	2	2
Agricultural sciences, forestry and fisheries	192	93	170	72	20	19	2	2
Social sciences	699	401	585	319	98	72	16	10
Psychology	57	25	57	25	-	-	-	-
Economics and business	148	57	130	45	6	4	12	8
Education	88	58	78	48	9	9	1	1
Law	52	21	46	18	3	2	3	1
Other social sciences	354	240	274	183	80	57	-	-
Humanities and arts	84	38	57	28	26	9	1	1
Art (art, history of arts, performing arts, music)	33	17	25	15	8	2	-	-
Other humanities	51	21	32	13	18	7	1	1

3.1. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, 2023 (head count) (continued)

	Istraživači zaposleni s punim i kraćim od punog radnog vremena							
	ukupno		doktori nauka		magistratura/master/speccijalizacija		univerzitetsko Education	
	svega	žene	svega	žene	svega	žene	svega	žene
Region Šumadije i Zapadne Srbije	1581	891	1072	595	261	171	248	125
Natural sciences	250	157	150	94	22	13	78	50
Engineering and technology	291	104	148	55	71	37	72	12
Medical and health sciences	326	171	231	107	17	17	78	47
Agricultural and veterinary sciences	109	56	87	43	19	10	3	3
Social sciences	367	191	275	137	75	41	17	13
Humanities and arts	238	212	181	159	57	53	-	-
Business sector	135	39	19	8	42	18	74	13
Natural sciences	6	3	-	-	3	1	3	2
Computer and information sciences	5	3	-	-	3	1	2	2
Other natural sciences	1	-	-	-	-	-	1	-
Engineering and technology	109	28	4	1	34	16	71	11
Electrical engineering, electronic engineering and information engineering	11	1	2	-	4	-	5	1
Mechanical engineering	53	10	1	1	3	3	49	6
Chemical engineering	22	12	-	-	21	11	1	1
Materials engineering	6	3	-	-	4	1	2	2
Medical engineering	17	2	1	-	2	1	14	1
Agricultural and veterinary sciences	20	8	15	7	5	1	-	-
Agricultural sciences, forestry and fisheries	20	8	15	7	5	1	-	-
Government sector	82	54	59	40	23	14	-	-
Natural sciences	62	40	44	29	18	11	-	-
Other natural sciences	62	40	44	29	18	11	-	-
Agricultural and veterinary sciences	20	14	15	11	5	3	-	-
Other agricultural sciences	20	14	15	11	5	3	-	-
Tertiary education	1364	798	994	547	196	139	174	112
Natural sciences	182	114	106	65	1	1	75	48
Mathematics	182	114	106	65	1	1	75	48
Engineering and technology	182	76	144	54	37	21	1	1
Electrical engineering, electronic engineering and information engineering	159	63	124	43	34	19	1	1
Mechanical engineering	3	2	-	-	3	2	-	-
Other technologies and engineering	20	11	20	11	-	-	-	-
Medical and health sciences	326	171	231	107	17	17	78	47
Basic medicine	326	171	231	107	17	17	78	47
Agricultural and veterinary sciences	69	34	57	25	9	6	3	3
Agricultural sciences, forestry and fisheries	42	19	36	14	3	2	3	3
Other agricultural sciences	27	15	21	11	6	4	-	-
Social sciences	367	191	275	137	75	41	17	13
Economics and business	154	87	123	62	23	18	8	7
Education	129	52	85	37	38	11	6	4
Law	31	14	26	9	5	5	-	-
Other social sciences	53	38	41	29	9	7	3	2
Humanities and arts	238	212	181	159	57	53	-	-
Languages and literature	238	212	181	159	57	53	-	-
Region Južne i Istočne Srbije	1870	956	1304	651	356	213	210	92
Natural sciences	315	168	178	95	84	54	53	19
Engineering and technology	681	286	439	178	146	74	96	34
Medical and health sciences	364	205	304	167	-	-	60	38
Agricultural and veterinary sciences	13	7	11	5	2	2	-	-
Social sciences	245	122	204	93	40	28	1	1
Humanities and arts	252	168	168	113	84	55	-	-
Business sector	152	58	8	1	48	27	96	30
Natural sciences	95	41	6	1	36	21	53	19
Computer and information sciences	63	23	-	-	10	4	53	19
Other natural sciences	32	18	6	1	26	17	-	-

3.1. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, 2023 (head count) (continued)

	Istraživači zaposleni s punim i kraćim od punog radnog vremena							
	ukupno		doktori nauka		magistratura/master/s pecijalizacija		univerzitetско Education	
	svega	žene	svega	žene	svega	žene	svega	žene
Engineering and technology	56	17	1	-	12	6	43	11
Electrical engineering, electronic engineering and information engineering	43	7	1	-	7	2	35	5
Mechanical engineering	3	2	-	-	-	-	3	2
Medical engineering	5	3	-	-	4	3	1	-
Other technologies and engineering	5	5	-	-	1	1	4	4
Medical and health sciences	1	-	1	-	-	-	-	-
Clinical medicine	1	-	1	-	-	-	-	-
Government sector	73	44	37	23	31	19	5	2
Engineering and technology	60	37	26	18	29	17	5	2
Other technologies and engineering	60	37	26	18	29	17	5	2
Agricultural and veterinary sciences	13	7	11	5	2	2	-	-
Agricultural biotechnology	13	7	11	5	2	2	-	-
Tertiary education	1645	854	1259	627	277	167	109	60
Natural sciences	220	127	172	94	48	33	-	-
Mathematics	220	127	172	94	48	33	-	-
Engineering and technology	565	232	412	160	105	51	48	21
Civil engineering	79	36	69	33	-	-	10	3
Electrical engineering, electronic engineering and information engineering	184	63	127	38	38	15	19	10
Mechanical engineering	98	27	69	18	29	9	-	-
Chemical engineering	69	41	46	26	21	14	2	1
Environmental engineering	49	24	37	19	-	-	12	5
Other technologies and engineering	86	41	64	26	17	13	5	2
Medical and health sciences	363	205	303	167	-	-	60	38
Basic medicine	363	205	303	167	-	-	60	38
Social sciences	245	122	204	93	40	28	1	1
Economics and business	57	38	55	36	1	1	1	1
Education	46	34	32	21	14	13	-	-
Law	75	27	73	25	2	2	-	-
Other social sciences	67	23	44	11	23	12	-	-
Humanities and arts	252	168	168	113	84	55	-	-
Phylosophy, ethics and religion	166	112	139	93	27	19	-	-
Art (art, history of arts, performing arts, music)	86	56	29	20	57	36	-	-
Region Kosovo i Metohija	...	...	...	...	...	...	...	...

3.2. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, expressed in full-time equivalent, 2023

	Full-time and part-time researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	16704.7	9025.3	11621.8	6286.6	3358.6	1927.5	1724.3	811.2
Natural sciences	4548.3	2600.6	2861.8	1733.0	1095.2	575.7	591.3	291.9
Engineering and technology	3991.9	1682.6	2389.8	986.8	914.0	465.6	688.1	230.2
Medical and health sciences	2634.3	1581.9	2141.4	1243.7	212.7	148.2	280.2	190.0
Agricultural and veterinary sciences	1192.4	665.2	963.3	525.2	194.5	117.0	34.6	23.0
Social sciences	2626.7	1363.5	2092.1	1027.5	467.3	295.5	67.3	40.5
Humanities and arts	1711.1	1131.5	1173.4	770.4	474.9	325.5	62.8	35.6
Business sector	1830.3	704.0	354.3	152.7	625.9	240.0	850.1	311.3
Natural sciences	780.9	274.5	123.3	42.5	353.3	132.4	304.3	99.6
Computer and information sciences	564.6	160.8	47.5	9.0	253.8	75.4	263.3	76.4
Chemical sciences	91.5	49.5	47.0	24.0	43.5	24.5	1.0	1.0
Earth and related environmental sciences	26.8	11.3	14.3	5.5	9.5	4.8	3.0	1.0
Biological sciences	1.0	1.0	-	-	-	-	1.0	1.0
Other natural sciences	97.0	51.9	14.5	4.0	46.5	27.7	36.0	20.2
Engineering and technology	826.7	288.2	189.2	88.3	259.4	102.2	378.1	97.7
Civil engineering	7.0	4.0	2.0	2.0	4.0	2.0	1.0	-
Electrical engineering, electronic engineering and information engineering	380.7	119.6	39.1	14.3	114.5	42.4	227.1	62.9
Mechanical engineering	202.4	42.7	54.6	18.0	61.5	13.4	86.3	11.3
Chemical engineering	32.2	15.8	14.0	7.0	15.7	8.3	2.5	0.5
Materials engineering	8.8	3.8	-	-	3.6	0.6	5.2	3.2
Medical engineering	21.4	6.0	4.0	1.0	6.0	4.0	11.4	1.0
Environmental engineering	54.0	18.0	18.0	5.0	13.0	2.0	23.0	11.0
Environmental biotechnology	3.0	1.0	1.0	-	2.0	1.0	-	-
Nano-technology	1.0	-	1.0	-	-	-	-	-
Other technologies and engineering	116.2	77.3	55.5	41.0	39.1	28.5	21.6	7.8
Medical and health sciences	166.9	115.6	3.9	2.6	1.0	1.0	162.0	112.0
Clinical medicine	140.0	95.0	2.0	1.0	-	-	138.0	94.0
Health science	1.0	1.0	-	-	1.0	1.0	-	-
Medical biotechnology	0.9	0.6	0.9	0.6	-	-	-	-
Other medical sciences	25.0	19.0	1.0	1.0	-	-	24.0	18.0
Agricultural and veterinary sciences	34.6	17.2	23.4	12.8	9.2	3.4	2.0	1.0
Agricultural sciences, forestry and fisheries	21.0	8.0	15.0	7.0	5.0	1.0	1.0	-
Animal and dairy science	1.0	1.0	-	-	-	-	1.0	1.0
Agricultural biotechnology	12.6	8.2	8.4	5.8	4.2	2.4	-	-
Social sciences	19.2	7.5	12.5	5.5	3.0	1.0	3.7	1.0
Economics and business	17.2	7.5	12.5	5.5	2.0	1.0	2.7	1.0
Media and communications	1.0	-	-	-	-	-	1.0	-
Other social sciences	1.0	-	-	-	1.0	-	-	-
Humanities and arts	2.0	1.0	2.0	1.0	-	-	-	-
History and archeology	2.0	1.0	2.0	1.0	-	-	-	-
Government sector	3726.2	2300.3	2765.8	1736.3	896.4	534.0	64.0	30.0
Natural sciences	1830.0	1192.6	1376.6	923.3	448.4	266.3	5.0	3.0
Mathematics	97.7	37.4	70.7	25.4	27.0	12.0	-	-
Computer and information sciences	37.1	11.5	24.1	6.5	12.0	4.0	1.0	1.0
Physical sciences	700.7	434.0	515.7	344.0	185.0	90.0	-	-
Chemical sciences	219.2	147.0	163.2	110.0	56.0	37.0	-	-
Earth and related environmental sciences	13.0	-	7.0	-	6.0	-	-	-
Biological sciences	491.1	393.5	364.8	298.2	122.3	93.3	4.0	2.0
Other natural sciences	271.2	169.2	231.1	139.2	40.1	30.0	-	-
Engineering and technology	422.7	234.4	277.5	153.1	126.2	76.3	19.0	5.0
Civil engineering	25.0	19.0	20.0	15.0	4.0	3.0	1.0	1.0
Electrical engineering, electronic engineering and information engineering	45.0	19.0	27.0	11.0	12.0	7.0	6.0	1.0
Materials engineering	43.0	26.0	30.0	18.0	13.0	8.0	-	-
Environmental biotechnology	98.7	58.0	78.7	47.0	20.0	11.0	-	-
Industrial biotechnology	39.0	18.0	32.0	16.0	4.0	1.0	3.0	1.0
Other technologies and engineering	172.0	94.4	89.8	46.1	73.2	46.3	9.0	2.0
Medical and health sciences	218.6	153.3	137.9	102.0	62.7	41.3	18.0	10.0
Basic medicine	115.4	71.5	56.1	37.4	41.3	24.1	18.0	10.0
Other medical sciences	103.2	81.8	81.8	64.6	21.4	17.2	-	-

3.2. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, expressed in full-time equivalent, 2023 (continued)

	Full-time and part-time researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Agricultural and veterinary sciences	422.5	266.0	339.2	218.4	74.3	42.6	9.0	5.0
Agricultural sciences, forestry and fisheries	24.0	17.0	16.0	12.0	8.0	5.0	-	-
Animal and dairy science	31.5	14.0	22.5	12.0	9.0	2.0	-	-
Veterinary sciences	63.0	34.0	52.0	31.0	10.0	2.0	1.0	1.0
Agricultural biotechnology	253.0	162.0	202.7	127.4	42.3	30.6	8.0	4.0
Other agricultural sciences	51.0	39.0	46.0	36.0	5.0	3.0	-	-
Social sciences	413.6	211.5	300.3	148.5	111.3	62.0	2.0	1.0
Psychology	65.5	36.5	47.5	23.5	18.0	13.0	-	-
Economics and business	65.0	39.0	55.0	32.0	9.0	6.0	1.0	1.0
Sociology	74.5	33.0	52.5	22.0	22.0	11.0	-	-
Law	55.3	27.0	41.3	20.0	14.0	7.0	-	-
Political science	126.3	52.0	84.0	34.0	41.3	18.0	1.0	-
Other social sciences	27.0	24.0	20.0	17.0	7.0	7.0	-	-
Humanities and arts	418.8	242.5	334.3	191.0	73.5	45.5	11.0	6.0
History and archeology	217.0	91.5	190.0	78.5	22.0	11.0	5.0	2.0
Languages and literature	125.3	92.0	86.3	64.0	33.0	24.0	6.0	4.0
Art (art, history of arts, performing arts, music)	23.0	18.0	17.0	13.0	6.0	5.0	-	-
Other humanities	53.5	41.0	41.0	35.5	12.5	5.5	-	-
Tertiary education	11147.9	6020.7	8501.5	4397.4	1836.2	1153.4	810.2	469.9
Natural sciences	1937.4	1133.5	1361.9	767.2	293.5	177.0	282.0	189.3
Mathematics	996.8	598.0	650.9	370.7	88.7	50.5	257.2	176.8
Computer and information sciences	330.3	158.6	225.4	97.5	83.6	51.1	21.3	10.0
Physical sciences	53.4	23.1	31.4	14.1	22.0	9.0	-	-
Chemical sciences	164.0	101.0	139.0	85.0	22.0	14.0	3.0	2.0
Earth and related environmental sciences	167.3	103.5	149.6	91.6	17.2	11.4	0.5	0.5
Biological sciences	225.6	149.3	165.6	108.3	60.0	41.0	-	-
Engineering and technology	2742.5	1160.0	1923.1	745.4	528.4	287.1	291.0	127.5
Civil engineering	345.8	166.0	279.8	132.0	30.0	14.0	36.0	20.0
Electrical engineering, electronic engineering and information engineering	1408.0	555.5	907.0	292.0	367.5	192.0	133.5	71.5
Mechanical engineering	346.0	86.0	230.0	55.0	32.0	11.0	84.0	20.0
Chemical engineering	138.5	92.2	102.6	68.9	34.9	22.8	1.0	0.5
Materials engineering	7.0	5.0	-	-	7.0	5.0	-	-
Environmental engineering	170.7	79.0	149.7	66.5	10.0	6.0	11.0	6.5
Other technologies and engineering	326.5	176.3	254.0	131.0	47.0	36.3	25.5	9.0
Medical and health sciences	2248.8	1313.0	1999.6	1139.1	149.0	105.9	100.2	68.0
Basic medicine	1231.4	689.1	1047.7	565.6	88.0	60.0	95.7	63.5
Clinical medicine	46.8	23.0	39.0	18.8	7.8	4.2	-	-
Health science	27.0	10.0	24.0	7.0	3.0	3.0	-	-
Other medical sciences	943.6	590.9	888.9	547.7	50.2	38.7	4.5	4.5
Agricultural and veterinary sciences	735.3	382.0	600.7	294.0	111.0	71.0	23.6	17.0
Agricultural sciences, forestry and fisheries	349.8	174.0	302.8	137.0	41.0	31.0	6.0	6.0
Veterinary sciences	88.3	49.0	72.7	39.0	-	-	15.6	10.0
Other agricultural sciences	297.2	159.0	225.2	118.0	70.0	40.0	2.0	1.0
Social sciences	2193.6	1144.2	1779.1	873.3	352.9	232.4	61.6	38.5
Psychology	28.5	12.5	28.5	12.5	-	-	-	-
Economics and business	618.3	308.6	553.6	259.0	42.1	31.6	22.6	18.0
Education	407.1	228.3	309.7	165.4	85.4	52.9	12.0	10.0
Law	307.1	126.8	262.7	98.4	36.4	24.9	8.0	3.5
Political science	133.8	56.5	97.8	38.5	36.0	18.0	-	-
Media and communications	112.7	71.7	66.2	45.2	30.5	21.5	16.0	5.0
Other social sciences	586.1	339.8	460.6	254.3	122.5	83.5	3.0	2.0
Humanities and arts	1290.3	888.0	837.1	578.4	401.4	280.0	51.8	29.6
Languages and literature	506.3	396.3	353.3	272.3	118.0	102.0	35.0	22.0
Philosophy, ethics and religion	361.2	219.5	247.0	147.5	113.2	71.0	1.0	1.0
Art (art, history of arts, performing arts, music)	252.8	156.9	111.2	74.7	126.8	76.6	14.8	5.6
Other humanities	170.0	115.3	125.6	83.9	43.4	30.4	1.0	1.0

3.2. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, expressed in full-time equivalent, 2023 (continued)

	Full-time and part-time researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Non-profit sector	0.3	0.3	0.2	0.2	0.1	0.1	-	-
Social sciences	0.3	0.3	0.2	0.2	0.1	0.1	-	-
Sociology	0.3	0.3	0.2	0.2	0.1	0.1	-	-
Beogradski region	9677.7	5255.6	6807.7	3724.7	1941.7	1138.3	928.3	392.6
Natural sciences	3140.9	1852.1	2137.4	1323.0	772.5	446.9	231.0	82.2
Engineering and technology	1797.1	702.3	1132.1	466.6	276.8	121.4	388.2	114.3
Medical and health sciences	1442.1	862.7	1066.9	609.0	190.7	127.2	184.5	126.5
Agricultural and veterinary sciences	741.0	425.0	581.1	335.4	131.3	71.6	28.6	18.0
Social sciences	1419.0	699.5	1122.3	519.8	262.5	162.7	34.2	17.0
Humanities and arts	1137.6	714.0	767.9	470.9	307.9	208.5	61.8	34.6
Business sector	1094.0	470.1	264.8	127.9	269.6	114.7	559.6	227.5
Natural sciences	362.7	144.8	71.6	33.5	109.4	52.1	181.7	59.2
Computer and information sciences	182.9	51.6	1.8	1.0	38.4	13.6	142.7	37.0
Chemical sciences	88.0	47.0	47.0	24.0	41.0	23.0	-	-
Earth and related environmental sciences	26.8	11.3	14.3	5.5	9.5	4.8	3.0	1.0
Biological sciences	1.0	1.0	-	-	-	-	1.0	1.0
Other natural sciences	64.0	33.9	8.5	3.0	20.5	10.7	35.0	20.2
Engineering and technology	546.7	201.2	176.3	85.3	158.2	61.6	212.2	54.3
Civil engineering	1.0	-	-	-	-	-	1.0	-
Electrical engineering, electronic engineering and information engineering	244.9	82.8	33.7	14.3	61.5	23.0	149.7	45.5
Mechanical engineering	155.2	33.0	52.1	17.0	59.1	11.0	44.0	5.0
Chemical engineering	16.1	7.1	14.0	7.0	0.1	0.1	2.0	-
Medical engineering	1.0	1.0	1.0	1.0	-	-	-	-
Environmental engineering	18.0	5.0	18.0	5.0	-	-	-	-
Environmental biotechnology	1.0	-	1.0	-	-	-	-	-
Nano-technology	1.0	-	1.0	-	-	-	-	-
Other technologies and engineering	108.5	72.3	55.5	41.0	37.5	27.5	15.5	3.8
Medical and health sciences	164.9	114.6	2.9	2.6	-	-	162.0	112.0
Clinical medicine	139.0	95.0	1.0	1.0	-	-	138.0	94.0
Medical biotechnology	0.9	0.6	0.9	0.6	-	-	-	-
Other medical sciences	25.0	19.0	1.0	1.0	-	-	24.0	18.0
Agricultural and veterinary sciences	1.0	1.0	-	-	-	-	1.0	1.0
Animal and dairy science	1.0	1.0	-	-	-	-	1.0	1.0
Social sciences	16.7	7.5	12.0	5.5	2.0	1.0	2.7	1.0
Economics and business	16.7	7.5	12.0	5.5	2.0	1.0	2.7	1.0
Humanities and arts	2.0	1.0	2.0	1.0	-	-	-	-
History and archeology	2.0	1.0	2.0	1.0	-	-	-	-
Government sector	3222.7	2005.0	2416.6	1532.3	750.1	445.7	56.0	27.0
Natural sciences	1736.2	1143.7	1311.9	889.4	420.3	252.3	4.0	2.0
Mathematics	97.7	37.4	70.7	25.4	27.0	12.0	-	-
Physical sciences	700.7	434.0	515.7	344.0	185.0	90.0	-	-
Chemical sciences	219.2	147.0	163.2	110.0	56.0	37.0	-	-
Earth and related environmental sciences	13.0	-	7.0	-	6.0	-	-	-
Biological sciences	491.1	393.5	364.8	298.2	122.3	93.3	4.0	2.0
Other natural sciences	214.5	131.8	190.5	111.8	24.0	20.0	-	-
Engineering and technology	170.0	85.0	125.0	63.0	33.0	19.0	12.0	3.0
Civil engineering	25.0	19.0	20.0	15.0	4.0	3.0	1.0	1.0
Electrical engineering, electronic engineering and information engineering	45.0	19.0	27.0	11.0	12.0	7.0	6.0	1.0
Materials engineering	43.0	26.0	30.0	18.0	13.0	8.0	-	-
Environmental biotechnology	7.0	3.0	7.0	3.0	-	-	-	-
Industrial biotechnology	39.0	18.0	32.0	16.0	4.0	1.0	3.0	1.0
Other technologies and engineering	11.0	-	9.0	-	-	-	2.0	-
Medical and health sciences	218.6	153.3	137.9	102.0	62.7	41.3	18.0	10.0
Basic medicine	115.4	71.5	56.1	37.4	41.3	24.1	18.0	10.0
Other medical sciences	103.2	81.8	81.8	64.6	21.4	17.2	-	-

3.2. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, expressed in full-time equivalent, 2023 (continued)

	Full-time and part-time researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Agricultural and veterinary sciences	265.5	169.0	207.2	138.4	49.3	25.6	9.0	5.0
Agricultural sciences, forestry and fisheries	24.0	17.0	16.0	12.0	8.0	5.0	-	-
Animal and dairy science	31.5	14.0	22.5	12.0	9.0	2.0	-	-
Veterinary sciences	28.0	15.0	20.0	12.0	7.0	2.0	1.0	1.0
Agricultural biotechnology	151.0	98.0	117.7	77.4	25.3	16.6	8.0	4.0
Other agricultural sciences	31.0	25.0	31.0	25.0	-	-	-	-
Social sciences	413.6	211.5	300.3	148.5	111.3	62.0	2.0	1.0
Psychology	65.5	36.5	47.5	23.5	18.0	13.0	-	-
Economics and business	65.0	39.0	55.0	32.0	9.0	6.0	1.0	1.0
Sociology	74.5	33.0	52.5	22.0	22.0	11.0	-	-
Law	55.3	27.0	41.3	20.0	14.0	7.0	-	-
Political science	126.3	52.0	84.0	34.0	41.3	18.0	1.0	-
Other social sciences	27.0	24.0	20.0	17.0	7.0	7.0	-	-
Humanities and arts	418.8	242.5	334.3	191.0	73.5	45.5	11.0	6.0
History and archeology	217.0	91.5	190.0	78.5	22.0	11.0	5.0	2.0
Languages and literature	125.3	92.0	86.3	64.0	33.0	24.0	6.0	4.0
Art (art, history of arts, performing arts, music)	23.0	18.0	17.0	13.0	6.0	5.0	-	-
Other humanities	53.5	41.0	41.0	35.5	12.5	5.5	-	-
Tertiary education	5360.7	2780.2	4126.1	2064.3	921.9	577.8	312.7	138.1
Natural sciences	1042.0	563.6	753.9	400.1	242.8	142.5	45.3	21.0
Mathematics	154.0	61.5	95.5	37.0	38.0	16.0	20.5	8.5
Computer and information sciences	330.3	158.6	225.4	97.5	83.6	51.1	21.3	10.0
Physical sciences	53.4	23.1	31.4	14.1	22.0	9.0	-	-
Chemical sciences	164.0	101.0	139.0	85.0	22.0	14.0	3.0	2.0
Earth and related environmental sciences	114.7	70.1	97.0	58.2	17.2	11.4	0.5	0.5
Biological sciences	225.6	149.3	165.6	108.3	60.0	41.0	-	-
Engineering and technology	1080.4	416.1	830.8	318.3	85.6	40.8	164.0	57.0
Civil engineering	230.8	111.0	180.8	84.0	24.0	10.0	26.0	17.0
Electrical engineering, electronic engineering and information engineering	230.7	60.3	176.7	42.3	27.0	9.0	27.0	9.0
Mechanical engineering	245.0	57.0	161.0	37.0	-	-	84.0	20.0
Chemical engineering	74.0	54.1	58.4	44.3	15.6	9.8	-	-
Materials engineering	7.0	5.0	-	-	7.0	5.0	-	-
Environmental engineering	146.2	67.0	131.2	57.0	10.0	6.0	5.0	4.0
Other technologies and engineering	146.7	61.7	122.7	53.7	2.0	1.0	22.0	7.0
Medical and health sciences	1058.6	594.8	926.1	504.4	128.0	85.9	4.5	4.5
Basic medicine	745.0	406.0	667.0	356.0	78.0	50.0	-	-
Clinical medicine	46.8	23.0	39.0	18.8	7.8	4.2	-	-
Health science	27.0	10.0	24.0	7.0	3.0	3.0	-	-
Other medical sciences	239.8	155.8	196.1	122.6	39.2	28.7	4.5	4.5
Agricultural and veterinary sciences	474.5	255.0	373.9	197.0	82.0	46.0	18.6	12.0
Agricultural sciences, forestry and fisheries	116.0	62.0	97.0	51.0	18.0	10.0	1.0	1.0
Veterinary sciences	88.3	49.0	72.7	39.0	-	-	15.6	10.0
Other agricultural sciences	270.2	144.0	204.2	107.0	64.0	36.0	2.0	1.0
Social sciences	988.4	480.2	809.8	365.6	149.1	99.6	29.5	15.0
Economics and business	266.6	129.4	250.5	117.3	13.6	10.1	2.5	2.0
Education	179.0	105.1	145.0	76.1	29.0	24.0	5.0	5.0
Law	183.0	77.5	148.0	56.5	29.0	18.0	6.0	3.0
Political science	133.8	56.5	97.8	38.5	36.0	18.0	-	-
Media and communications	112.7	71.7	66.2	45.2	30.5	21.5	16.0	5.0
Other social sciences	113.3	40.0	102.3	32.0	11.0	8.0	-	-
Humanities and arts	716.8	470.5	431.6	278.9	234.4	163.0	50.8	28.6
Languages and literature	268.3	184.3	172.3	113.3	61.0	49.0	35.0	22.0
Philosophy, ethics and religion	195.2	107.5	108.0	54.5	86.2	52.0	1.0	1.0
Art (art, history of arts, performing arts, music)	134.3	84.4	57.7	40.2	61.8	38.6	14.8	5.6
Other humanities	119.0	94.3	93.6	70.9	25.4	23.4	-	-
Non-profit sector	0.3	0.3	0.2	0.2	0.1	0.1	-	-
Social sciences	0.3	0.3	0.2	0.2	0.1	0.1	-	-
Sociology	0.3	0.3	0.2	0.2	0.1	0.1	-	-

3.2. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, expressed in full-time equivalent, 2023 (continued)

	Full-time and part-time researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Region Vojvodine	3991.9	2103.1	2713.5	1433.6	828.8	427.7	449.6	241.8
Natural sciences	871.2	437.4	403.0	223.3	220.6	63.9	247.6	150.2
Engineering and technology	1360.2	638.1	746.2	319.0	431.1	240.0	182.9	79.1
Medical and health sciences	704.8	436.1	692.8	425.1	12.0	11.0	-	-
Agricultural and veterinary sciences	329.4	177.2	284.2	141.8	42.2	33.4	3.0	2.0
Social sciences	642.8	376.8	530.8	296.9	96.9	70.4	15.1	9.5
Humanities and arts	83.5	37.5	56.5	27.5	26.0	9.0	1.0	1.0
Business sector	517.5	154.3	63.3	15.8	274.5	84.7	179.7	53.8
Natural sciences	335.9	93.6	45.7	8.0	206.4	58.9	83.8	26.7
Computer and information sciences	332.4	91.1	45.7	8.0	203.9	57.4	82.8	25.7
Chemical sciences	3.5	2.5	-	-	2.5	1.5	1.0	1.0
Engineering and technology	164.5	51.5	8.7	2.0	61.9	22.4	93.9	27.1
Civil engineering	6.0	4.0	2.0	2.0	4.0	2.0	-	-
Electrical engineering, electronic engineering and information engineering	102.0	30.5	3.2	-	42.3	17.4	56.5	13.1
Mechanical engineering	9.8	1.0	1.5	-	-	-	8.3	1.0
Materials engineering	4.0	2.0	-	-	-	-	4.0	2.0
Medical engineering	2.0	-	2.0	-	-	-	-	-
Environmental engineering	36.0	13.0	-	-	13.0	2.0	23.0	11.0
Environmental biotechnology	2.0	1.0	-	-	2.0	1.0	-	-
Other technologies and engineering	2.7	-	-	-	0.6	-	2.1	-
Medical and health sciences	1.0	1.0	-	-	1.0	1.0	-	-
Health science	1.0	1.0	-	-	1.0	1.0	-	-
Agricultural and veterinary sciences	13.6	8.2	8.4	5.8	4.2	2.4	1.0	-
Agricultural sciences, forestry and fisheries	1.0	-	-	-	-	-	1.0	-
Agricultural biotechnology	12.6	8.2	8.4	5.8	4.2	2.4	-	-
Social sciences	2.5	-	0.5	-	1.0	-	1.0	-
Economics and business	0.5	-	0.5	-	-	-	-	-
Media and communications	1.0	-	-	-	-	-	1.0	-
Other social sciences	1.0	-	-	-	1.0	-	-	-
Government sector	353.8	199.9	256.6	142.6	94.2	56.3	3.0	1.0
Natural sciences	37.1	11.5	24.1	6.5	12.0	4.0	1.0	1.0
Computer and information sciences	37.1	11.5	24.1	6.5	12.0	4.0	1.0	1.0
Engineering and technology	192.7	112.4	126.5	72.1	64.2	40.3	2.0	-
Environmental biotechnology	91.7	55.0	71.7	44.0	20.0	11.0	-	-
Other technologies and engineering	101.0	57.4	54.8	28.1	44.2	29.3	2.0	-
Agricultural and veterinary sciences	124.0	76.0	106.0	64.0	18.0	12.0	-	-
Veterinary sciences	35.0	19.0	32.0	19.0	3.0	-	-	-
Agricultural biotechnology	89.0	57.0	74.0	45.0	15.0	12.0	-	-
Tertiary education	3120.6	1748.9	2393.6	1275.2	460.1	286.7	266.9	187.0
Natural sciences	498.2	332.3	333.2	208.8	2.2	1.0	162.8	122.5
Mathematics	445.6	298.9	280.6	175.4	2.2	1.0	162.8	122.5
Earth and related environmental sciences	52.6	33.4	52.6	33.4	-	-	-	-
Engineering and technology	1003.0	474.2	611.0	244.9	305.0	177.3	87.0	52.0
Civil engineering	36.0	19.0	30.0	15.0	6.0	4.0	-	-
Electrical engineering, electronic engineering and information engineering	879.0	385.0	521.0	182.0	271.0	151.0	87.0	52.0
Other technologies and engineering	88.0	70.2	60.0	47.9	28.0	22.3	-	-
Medical and health sciences	703.8	435.1	692.8	425.1	11.0	10.0	-	-
Other medical sciences	703.8	435.1	692.8	425.1	11.0	10.0	-	-
Agricultural and veterinary sciences	191.8	93.0	169.8	72.0	20.0	19.0	2.0	2.0
Agricultural sciences, forestry and fisheries	191.8	93.0	169.8	72.0	20.0	19.0	2.0	2.0
Social sciences	640.3	376.8	530.3	296.9	95.9	70.4	14.1	9.5
Psychology	28.5	12.5	28.5	12.5	-	-	-	-
Economics and business	146.3	57.0	129.2	45.0	6.0	4.0	11.1	8.0
Education	85.5	57.3	75.6	47.4	8.9	8.9	1.0	1.0
Law	26.5	10.5	23.0	9.0	1.5	1.0	2.0	0.5
Other social sciences	353.5	239.5	274.0	183.0	79.5	56.5	-	-
Humanities and arts	83.5	37.5	56.5	27.5	26.0	9.0	1.0	1.0
Art (art, history of arts, performing arts, music)	32.5	16.5	24.5	14.5	8.0	2.0	-	-
Other humanities	51.0	21.0	32.0	13.0	18.0	7.0	1.0	1.0

3.2. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, expressed in full-time equivalent, 2023 (continued)

	Full-time and part-time researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Region Šumadije i Zapadne Srbije	1264.2	753.1	841.9	500.9	241.1	155.4	181.2	96.8
Natural sciences	240.4	151.5	143.6	91.9	19.9	11.8	76.9	47.8
Engineering and technology	204.4	73.1	94.0	34.4	61.8	31.2	48.6	7.5
Medical and health sciences	124.0	78.7	78.3	43.2	10.0	10.0	35.7	25.5
Agricultural and veterinary sciences	109.0	56.0	87.0	43.0	19.0	10.0	3.0	3.0
Social sciences	348.4	181.8	258.0	129.4	73.4	39.4	17.0	13.0
Humanities and arts	238.0	212.0	181.0	159.0	57.0	53.0	-	-
Business sector	104.4	31.0	18.2	8.0	35.1	14.0	51.1	9.0
Natural sciences	5.8	2.8	-	-	2.8	0.8	3.0	2.0
Computer and information sciences	4.8	2.8	-	-	2.8	0.8	2.0	2.0
Other natural sciences	1.0	-	-	-	-	-	1.0	-
Engineering and technology	78.6	20.2	3.2	1.0	27.3	12.2	48.1	7.0
Electrical engineering, electronic engineering and information engineering	9.9	1.0	1.2	-	3.7	-	5.0	1.0
Mechanical engineering	34.4	6.7	1.0	1.0	2.4	2.4	31.0	3.3
Chemical engineering	16.1	8.7	-	-	15.6	8.2	0.5	0.5
Materials engineering	4.8	1.8	-	-	3.6	0.6	1.2	1.2
Medical engineering	13.4	2.0	1.0	-	2.0	1.0	10.4	1.0
Agricultural and veterinary sciences	20.0	8.0	15.0	7.0	5.0	1.0	-	-
Agricultural sciences, forestry and fisheries	20.0	8.0	15.0	7.0	5.0	1.0	-	-
Government sector	76.7	51.4	55.6	38.4	21.1	13.0	-	-
Natural sciences	56.7	37.4	40.6	27.4	16.1	10.0	-	-
Other natural sciences	56.7	37.4	40.6	27.4	16.1	10.0	-	-
Agricultural and veterinary sciences	20.0	14.0	15.0	11.0	5.0	3.0	-	-
Other agricultural sciences	20.0	14.0	15.0	11.0	5.0	3.0	-	-
Tertiary education	1083.1	670.7	768.1	454.5	184.9	128.4	130.1	87.8
Natural sciences	177.9	111.3	103.0	64.5	1.0	1.0	73.9	45.8
Mathematics	177.9	111.3	103.0	64.5	1.0	1.0	73.9	45.8
Engineering and technology	125.8	52.9	90.8	33.4	34.5	19.0	0.5	0.5
Electrical engineering, electronic engineering and information engineering	115.5	47.5	83.5	30.0	31.5	17.0	0.5	0.5
Mechanical engineering	3.0	2.0	-	-	3.0	2.0	-	-
Other technologies and engineering	7.3	3.4	7.3	3.4	-	-	-	-
Medical and health sciences	124.0	78.7	78.3	43.2	10.0	10.0	35.7	25.5
Basic medicine	124.0	78.7	78.3	43.2	10.0	10.0	35.7	25.5
Agricultural and veterinary sciences	69.0	34.0	57.0	25.0	9.0	6.0	3.0	3.0
Agricultural sciences, forestry and fisheries	42.0	19.0	36.0	14.0	3.0	2.0	3.0	3.0
Other agricultural sciences	27.0	15.0	21.0	11.0	6.0	4.0	-	-
Social sciences	348.4	181.8	258.0	129.4	73.4	39.4	17.0	13.0
Economics and business	148.7	84.2	119.2	60.7	21.5	16.5	8.0	7.0
Education	117.1	46.4	73.1	31.4	38.0	11.0	6.0	4.0
Law	30.3	13.9	25.4	9.0	4.9	4.9	-	-
Other social sciences	52.3	37.3	40.3	28.3	9.0	7.0	3.0	2.0
Humanities and arts	238.0	212.0	181.0	159.0	57.0	53.0	-	-
Languages and literature	238.0	212.0	181.0	159.0	57.0	53.0	-	-
Region Južne i Istočne Srbije	1770.9	913.5	1258.7	627.4	347.0	206.1	165.2	80.0
Natural sciences	295.8	159.6	177.8	94.8	82.2	53.1	35.8	11.7
Engineering and technology	630.2	269.1	417.5	166.8	144.3	73.0	68.4	29.3
Medical and health sciences	363.4	204.4	303.4	166.4	-	-	60.0	38.0
Agricultural and veterinary sciences	13.0	7.0	11.0	5.0	2.0	2.0	-	-
Social sciences	216.5	105.4	181.0	81.4	34.5	23.0	1.0	1.0
Humanities and arts	252.0	168.0	168.0	113.0	84.0	55.0	-	-
Business sector	114.4	48.6	8.0	1.0	46.7	26.6	59.7	21.0
Natural sciences	76.5	33.3	6.0	1.0	34.7	20.6	35.8	11.7
Computer and information sciences	44.5	15.3	-	-	8.7	3.6	35.8	11.7
Other natural sciences	32.0	18.0	6.0	1.0	26.0	17.0	-	-

3.2. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, expressed in full-time equivalent, 2023 (continued)

	Full-time and part-time researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Engineering and technology	36.9	15.3	1.0	-	12.0	6.0	23.9	9.3
Electrical engineering, electronic engineering and information engineering	23.9	5.3	1.0	-	7.0	2.0	15.9	3.3
Mechanical engineering	3.0	2.0	-	-	-	-	3.0	2.0
Medical engineering	5.0	3.0	-	-	4.0	3.0	1.0	-
Other technologies and engineering	5.0	5.0	-	-	1.0	1.0	4.0	4.0
Medical and health sciences	1.0	-	1.0	-	-	-	-	-
Clinical medicine	1.0	-	1.0	-	-	-	-	-
Government sector	73.0	44.0	37.0	23.0	31.0	19.0	5.0	2.0
Engineering and technology	60.0	37.0	26.0	18.0	29.0	17.0	5.0	2.0
Other technologies and engineering	60.0	37.0	26.0	18.0	29.0	17.0	5.0	2.0
Agricultural and veterinary sciences	13.0	7.0	11.0	5.0	2.0	2.0	-	-
Agricultural biotechnology	13.0	7.0	11.0	5.0	2.0	2.0	-	-
Tertiary education	1583.5	820.9	1213.7	603.4	269.3	160.5	100.5	57.0
Natural sciences	219.3	126.3	171.8	93.8	47.5	32.5	-	-
Mathematics	219.3	126.3	171.8	93.8	47.5	32.5	-	-
Engineering and technology	533.3	216.8	390.5	148.8	103.3	50.0	39.5	18.0
Civil engineering	79.0	36.0	69.0	33.0	-	-	10.0	3.0
Electrical engineering, electronic engineering and information engineering	182.8	62.7	125.8	37.7	38.0	15.0	19.0	10.0
Mechanical engineering	98.0	27.0	69.0	18.0	29.0	9.0	-	-
Chemical engineering	64.5	38.1	44.2	24.6	19.3	13.0	1.0	0.5
Environmental engineering	24.5	12.0	18.5	9.5	-	-	6.0	2.5
Other technologies and engineering	84.5	41.0	64.0	26.0	17.0	13.0	3.5	2.0
Medical and health sciences	362.4	204.4	302.4	166.4	-	-	60.0	38.0
Basic medicine	362.4	204.4	302.4	166.4	-	-	60.0	38.0
Social sciences	216.5	105.4	181.0	81.4	34.5	23.0	1.0	1.0
Economics and business	56.7	38.0	54.7	36.0	1.0	1.0	1.0	1.0
Education	25.5	19.5	16.0	10.5	9.5	9.0	-	-
Law	67.3	24.9	66.3	23.9	1.0	1.0	-	-
Other social sciences	67.0	23.0	44.0	11.0	23.0	12.0	-	-
Humanities and arts	252.0	168.0	168.0	113.0	84.0	55.0	-	-
Phylosophy, ethics and religion	166.0	112.0	139.0	93.0	27.0	19.0	-	-
Art (art, history of arts, performing arts, music)	86.0	56.0	29.0	20.0	57.0	36.0	-	-
Region Kosovo i Metohija	...	...	...	...	...	...	...	...

4.1. Full-time and part-time researchers and assistant-researchers, by age and sex, 2023

	Researchers				Assistant-researchers			
	Full-time		Part-time		Full-time		Part-time	
	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	15613	8491	2804	1358	2780	1361	618	274
Under 25	306	194	85	40	54	30	23	6
25–34	3742	2150	701	330	1085	490	240	107
35–44	4536	2537	733	376	786	361	158	69
45–54	3875	2117	669	342	493	273	113	46
55–64	2903	1410	563	247	342	203	73	42
65 and over	251	83	53	23	20	4	11	4
Business sector	1533	601	693	230	1409	501	438	160
Under 25	37	15	48	23	26	10	21	6
25–34	600	209	331	117	717	278	187	75
35–44	455	201	189	57	406	121	108	37
45–54	271	108	80	18	192	70	69	19
55–64	148	66	33	10	59	21	42	19
65 and over	22	2	12	5	9	1	11	4
Government sector	3669	2272	138	73	336	177	34	17
Under 25	24	17	5	4	-	-	1	-
25–34	940	603	24	13	77	48	6	4
35–44	1245	769	45	26	86	41	9	5
45–54	895	577	32	14	81	49	10	4
55–64	543	301	27	14	87	39	8	4
65 and over	22	5	5	2	5	-	-	-
Tertiary education	10411	5618	1971	1053	1035	683	146	97
Under 25	245	162	32	13	28	20	1	-
25–34	2202	1338	346	200	291	164	47	28
35–44	2836	1567	498	292	294	199	41	27
45–54	2709	1432	557	310	220	154	34	23
55–64	2212	1043	502	222	196	143	23	19
65 and over	207	76	36	16	6	3	-	-
Non-profit sector	-	-	2	2	-	-	-	-
35–44	-	-	1	1	-	-	-	-
55–64	-	-	1	1	-	-	-	-
Beogradski region	9141	4978	1401	750	1196	686	321	122
Under 25	150	89	35	16	27	14	11	4
25–34	2165	1264	247	141	272	141	120	45
35–44	2592	1470	346	195	346	203	87	35
45–54	2220	1227	390	209	294	176	61	17
55–64	1862	874	344	171	244	150	32	17
65 and over	152	54	39	18	13	2	10	4
Business sector	964	421	257	98	351	145	245	79
Under 25	20	7	8	5	13	3	11	4
25–34	331	122	90	43	90	41	96	34
35–44	282	141	85	30	100	44	66	22
45–54	192	92	41	10	102	39	45	8
55–64	120	57	24	7	39	17	17	7
65 and over	19	2	9	3	7	1	10	4
Government sector	3187	1986	95	55	253	144	20	9
Under 25	24	17	1	1	-	-	-	-
25–34	812	523	11	6	44	33	-	-
35–44	1075	670	31	22	70	36	4	2
45–54	776	501	25	11	64	41	8	3
55–64	478	270	25	14	70	34	8	4
65 and over	22	5	2	1	5	-	-	-

4.1. Full-time and part-time researchers and assistant-researchers, by age and sex, 2023 (continued)

	Researchers				Assistant-researchers			
	Full-time		Part-time		Full-time		Part-time	
	All	Women	All	Women	All	Women	All	Women
Tertiary education	4990	2571	1047	595	592	397	56	34
Under 25	106	65	26	10	14	11	-	-
25–34	1022	619	146	92	138	67	24	11
35–44	1235	659	229	142	176	123	17	11
45–54	1252	634	324	188	128	96	8	6
55–64	1264	547	294	149	135	99	7	6
65 and over	111	47	28	14	1	1	-	-
Non-profit sector	-	-	2	2	-	-	-	-
35–44	-	-	1	1	-	-	-	-
55–64	-	-	1	1	-	-	-	-
Region Vojvodine	3736	1996	688	278	1309	528	178	91
Under 25	101	66	40	21	15	8	11	2
25–34	975	527	267	87	723	294	82	48
35–44	1207	649	195	79	358	116	42	19
45–54	899	465	112	58	143	72	25	15
55–64	514	274	71	33	65	36	17	7
65 and over	40	15	3	-	5	2	1	-
Business sector	398	112	320	103	1024	342	126	52
Under 25	9	5	31	16	13	7	10	2
25–34	176	49	186	58	613	231	63	33
35–44	147	49	81	21	300	75	25	7
45–54	54	6	18	6	80	25	14	6
55–64	11	3	3	2	17	4	13	4
65 and over	1	-	1	-	1	-	1	-
Government sector	341	195	29	11	39	18	14	8
Under 25	-	-	4	3	-	-	1	-
25–34	87	55	9	4	23	13	6	4
35–44	126	70	9	3	9	2	5	3
45–54	81	48	4	1	4	3	2	1
55–64	47	22	2	-	3	-	-	-
65 and over	-	-	1	-	-	-	-	-
Tertiary education	2997	1689	339	164	246	168	38	31
Under 25	92	61	5	2	2	1	-	-
25–34	712	423	72	25	87	50	13	11
35–44	934	530	105	55	49	39	12	9
45–54	764	411	90	51	59	44	9	8
55–64	456	249	66	31	45	32	4	3
65 and over	39	15	1	-	4	2	-	-
Region Šumadije i Zapadne Srbije	1029	639	552	252	87	47	60	36
Under 25	40	29	10	3	4	2	1	-
25–34	273	176	144	80	23	11	10	6
35–44	313	200	148	80	36	19	14	5
45–54	229	144	122	57	18	13	16	10
55–64	165	89	120	29	5	2	19	15
65 and over	9	1	8	3	1	-	-	-
Business sector	65	23	70	16	17	7	19	11
Under 25	3	1	9	2	-	-	-	-
25–34	25	8	29	6	9	3	-	-
35–44	13	7	14	4	2	1	5	1
45–54	10	3	13	2	4	3	5	3
55–64	13	4	3	-	1	-	9	7
65 and over	1	-	2	2	1	-	-	-

4.1. Full-time and part-time researchers and assistant-researchers, by age and sex, 2023 (continued)

	Researchers				Assistant-researchers			
	Full-time		Part-time		Full-time		Part-time	
	All	Women	All	Women	All	Women	All	Women
Government sector	68	47	14	7	2	1	-	-
25–34	21	13	4	3	1	1	-	-
35–44	28	20	5	1	1	-	-	-
45–54	16	12	3	2	-	-	-	-
55–64	3	2	-	-	-	-	-	-
65 and over	-	-	2	1	-	-	-	-
Tertiary education	896	569	468	229	68	39	41	25
Under 25	37	28	1	1	4	2	1	-
25–34	227	155	111	71	13	7	10	6
35–44	272	173	129	75	33	18	9	4
45–54	203	129	106	53	14	10	11	7
55–64	149	83	117	29	4	2	10	8
65 and over	8	1	4	-	-	-	-	-
Region Južne i Istočne Srbije	1707	878	163	78	188	100	59	25
Under 25	15	10	-	-	8	6	-	-
25–34	329	183	43	22	67	44	28	8
35–44	424	218	44	22	46	23	15	10
45–54	527	281	45	18	38	12	11	4
55–64	362	173	28	14	28	15	5	3
65 and over	50	13	3	2	1	-	-	-
Business sector	106	45	46	13	17	7	48	18
Under 25	5	2	-	-	-	-	-	-
25–34	68	30	26	10	5	3	28	8
35–44	13	4	9	2	4	1	12	7
45–54	15	7	8	-	6	3	5	2
55–64	4	2	3	1	2	-	3	1
65 and over	1	-	-	-	-	-	-	-
Government sector	73	44	-	-	42	14	-	-
25–34	20	12	-	-	9	1	-	-
35–44	16	9	-	-	6	3	-	-
45–54	22	16	-	-	13	5	-	-
55–64	15	7	-	-	14	5	-	-
Tertiary education	1528	789	117	65	129	79	11	7
Under 25	10	8	-	-	8	6	-	-
25–34	241	141	17	12	53	40	-	-
35–44	395	205	35	20	36	19	3	3
45–54	490	258	37	18	19	4	6	2
55–64	343	164	25	13	12	10	2	2
65 and over	49	13	3	2	1	-	-	-
Region Kosovo i Metohija	...	...	...	...	...	...	...	...

5.1. Full-time and part-time assistant-researchers, by academic titles, sectors, fields of science and sex, 2023 (head count)

	Full-time and part-time assistant-researchers									
	Total		Doctors of science		Master's degree/specialisation		University degree		Secondary and other education	
	All	Women	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	3398	1635	258	122	933	436	1787	892	420	185
Natural sciences	907	404	93	27	133	63	476	260	205	54
Engineering and technology	1454	557	104	53	511	192	789	299	50	13
Medical and health sciences	221	151	8	5	24	16	99	69	90	61
Agricultural and veterinary sciences	185	97	14	9	42	16	89	38	40	34
Social sciences	381	253	21	15	119	73	212	147	29	18
Humanities and arts	250	173	18	13	104	76	122	79	6	5
Business sector	1847	661	104	28	532	197	988	375	223	61
Natural sciences	535	174	57	13	68	21	247	98	163	42
Engineering and technology	1201	423	40	13	434	160	679	238	48	12
Medical and health sciences	34	27	1	-	3	2	27	23	3	2
Agricultural and veterinary sciences	41	18	3	-	16	7	18	7	4	4
Social sciences	33	19	3	2	11	7	14	9	5	1
Humanities and arts	3	-	-	-	-	-	3	-	-	-
Government sector	370	194	78	39	104	50	144	68	44	37
Natural sciences	101	43	35	14	21	8	38	15	7	6
Engineering and technology	141	73	39	22	54	24	48	27	-	-
Medical and health sciences	12	12	1	1	9	9	2	2	-	-
Agricultural and veterinary sciences	91	49	2	2	12	3	41	14	36	30
Social sciences	5	4	-	-	4	3	1	1	-	-
Humanities and arts	20	13	1	-	4	3	14	9	1	1
Tertiary education	1181	780	76	55	297	189	655	449	153	87
Natural sciences	271	187	1	-	44	34	191	147	35	6
Engineering and technology	112	61	25	18	23	8	62	34	2	1
Medical and health sciences	175	112	6	4	12	5	70	44	87	59
Agricultural and veterinary sciences	53	30	9	7	14	6	30	17	-	-
Social sciences	343	230	18	13	104	63	197	137	24	17
Humanities and arts	227	160	17	13	100	73	105	70	5	4
Beogradski region	1517	808	154	91	314	169	776	404	273	144
Natural sciences	600	266	39	17	81	38	362	176	118	35
Engineering and technology	241	106	72	44	64	25	94	35	11	2
Medical and health sciences	164	111	7	4	20	13	63	40	74	54
Agricultural and veterinary sciences	131	73	14	9	23	9	54	21	40	34
Social sciences	207	129	10	8	78	46	90	57	29	18
Humanities and arts	174	123	12	9	48	38	113	75	1	1
Business sector	596	224	28	14	86	31	348	141	134	38
Natural sciences	370	127	5	3	35	12	219	83	111	29
Engineering and technology	146	48	18	10	38	11	79	25	11	2
Medical and health sciences	33	26	1	-	2	1	27	23	3	2
Agricultural and veterinary sciences	13	5	3	-	-	-	6	1	4	4
Social sciences	31	18	1	1	11	7	14	9	5	1
Humanities and arts	3	-	-	-	-	-	3	-	-	-
Government sector	273	153	75	38	57	34	97	44	44	37
Natural sciences	95	41	33	14	17	6	38	15	7	6
Engineering and technology	67	41	38	21	14	10	15	10	-	-
Medical and health sciences	12	12	1	1	9	9	2	2	-	-
Agricultural and veterinary sciences	74	42	2	2	9	3	27	7	36	30
Social sciences	5	4	-	-	4	3	1	1	-	-
Humanities and arts	20	13	1	-	4	3	14	9	1	1
Tertiary education	648	431	51	39	171	104	331	219	95	69
Natural sciences	135	98	1	-	29	20	105	78	-	-
Engineering and technology	28	17	16	13	12	4	-	-	-	-
Medical and health sciences	119	73	5	3	9	3	34	15	71	52
Agricultural and veterinary sciences	44	26	9	7	14	6	21	13	-	-
Social sciences	171	107	9	7	63	36	75	47	24	17
Humanities and arts	151	110	11	9	44	35	96	66	-	-

5.1. Full-time and part-time assistant-researchers, by academic titles, sectors, fields of science and sex, 2023 (head count) (continued)

	Full-time and part-time assistant-researchers									
	Total		Doctors of science		Master's degree/specialisation		University degree		Secondary and other education	
	All	Women	All	Women	All	Women	All	Women	All	Women
Region Vojvodine	1487	619	79	14	488	199	831	386	89	20
Natural sciences	238	111	54	10	46	22	81	68	57	11
Engineering and technology	1040	371	22	3	409	158	577	201	32	9
Medical and health sciences	10	8	-	-	-	-	10	8	-	-
Agricultural and veterinary sciences	43	18	-	-	10	2	33	16	-	-
Social sciences	147	107	3	1	23	17	121	89	-	-
Humanities and arts	9	4	-	-	-	-	9	4	-	-
Business sector	1150	394	76	14	420	155	600	211	54	14
Natural sciences	125	34	52	10	29	7	22	12	22	5
Engineering and technology	1004	351	22	3	384	146	566	193	32	9
Agricultural and veterinary sciences	19	8	-	-	7	2	12	6	-	-
Social sciences	2	1	2	1	-	-	-	-	-	-
Government sector	53	26	2	-	30	13	21	13	-	-
Natural sciences	4	1	2	-	2	1	-	-	-	-
Engineering and technology	34	19	-	-	25	12	9	7	-	-
Agricultural and veterinary sciences	15	6	-	-	3	-	12	6	-	-
Tertiary education	284	199	1	-	38	31	210	162	35	6
Natural sciences	109	76	-	-	15	14	59	56	35	6
Engineering and technology	2	1	-	-	-	-	2	1	-	-
Medical and health sciences	10	8	-	-	-	-	10	8	-	-
Agricultural and veterinary sciences	9	4	-	-	-	-	9	4	-	-
Social sciences	145	106	1	-	23	17	121	89	-	-
Humanities and arts	9	4	-	-	-	-	9	4	-	-
Region Šumadije i Zapadne Srbije	147	83	9	7	42	22	72	42	24	12
Natural sciences	32	15	-	-	3	2	27	13	2	-
Engineering and technology	39	20	-	-	13	5	25	14	1	1
Medical and health sciences	40	25	1	1	3	2	20	15	16	7
Social sciences	15	7	8	6	7	1	-	-	-	-
Humanities and arts	21	16	-	-	16	12	-	-	5	4
Business sector	36	18	-	-	8	3	25	14	3	1
Natural sciences	3	1	-	-	1	1	-	-	2	-
Engineering and technology	33	17	-	-	7	2	25	14	1	1
Government sector	2	1	-	-	2	1	-	-	-	-
Natural sciences	2	1	-	-	2	1	-	-	-	-
Tertiary education	109	64	9	7	32	18	47	28	21	11
Natural sciences	27	13	-	-	-	-	27	13	-	-
Engineering and technology	6	3	-	-	6	3	-	-	-	-
Medical and health sciences	40	25	1	1	3	2	20	15	16	7
Social sciences	15	7	8	6	7	1	-	-	-	-
Humanities and arts	21	16	-	-	16	12	-	-	5	4
Region Južne i Istočne Srbije	247	125	16	10	89	46	108	60	34	9
Natural sciences	37	12	-	-	3	1	6	3	28	8
Engineering and technology	134	60	10	6	25	4	93	49	6	1
Medical and health sciences	7	7	-	-	1	1	6	6	-	-
Agricultural and veterinary sciences	11	6	-	-	9	5	2	1	-	-
Social sciences	12	10	-	-	11	9	1	1	-	-
Humanities and arts	46	30	6	4	40	26	-	-	-	-
Business sector	65	25	-	-	18	8	15	9	32	8
Natural sciences	37	12	-	-	3	1	6	3	28	8
Engineering and technology	18	7	-	-	5	1	9	6	4	-
Medical and health sciences	1	1	-	-	1	1	-	-	-	-
Agricultural and veterinary sciences	9	5	-	-	9	5	-	-	-	-
Government sector	42	14	1	1	15	2	26	11	-	-
Engineering and technology	40	13	1	1	15	2	24	10	-	-
Agricultural and veterinary sciences	2	1	-	-	-	-	2	1	-	-
Tertiary education	140	86	15	9	56	36	67	40	2	1
Engineering and technology	76	40	9	5	5	1	60	33	2	1
Medical and health sciences	6	6	-	-	-	-	6	6	-	-
Social sciences	12	10	-	-	11	9	1	1	-	-
Humanities and arts	46	30	6	4	40	26	-	-	-	-
Region Kosovo i Metohija	...	...	...	...	...	...	...	...	...	...

5.2. Full-time and part-time assistant-researchers, by academic titles, sectors, fields of science, expressed in full-time equivalent, 2023

	Full-time and part-time assistant-researchers									
	Total		Doctors of science		Master's degree/specialisation		University degree		Secondary and other education	
	All	Women	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	3071.2	1484.6	239.3	113.0	882.9	408.0	1615.6	803.4	333.4	160.2
Natural sciences	752.1	343.3	78.5	20.9	120.2	56.5	409.3	225.8	144.1	40.1
Engineering and technology	1369.2	518.9	102.7	51.7	497.3	184.7	735.0	274.9	34.2	7.6
Medical and health sciences	193.5	131.9	7.5	4.5	15.8	9.2	88.7	61.2	81.5	57.0
Agricultural and veterinary sciences	161.3	89.1	13.7	9.0	32.5	12.2	76.5	35.4	38.6	32.5
Social sciences	350.7	231.6	18.9	13.9	113.9	70.2	188.9	129.5	29.0	18.0
Humanities and arts	244.4	169.8	18.0	13.0	103.2	75.2	117.2	76.6	6.0	5.0
Business sector	1612.6	569.6	89.8	21.1	505.5	185.7	871.0	321.6	146.3	41.2
Natural sciences	391.6	121.1	44.1	6.9	60.2	18.8	185.2	67.3	102.1	28.1
Engineering and technology	1128.3	392.2	39.7	12.7	424.6	155.0	630.8	217.4	33.2	7.1
Medical and health sciences	32.7	25.7	1.0	-	3.0	2.0	26.7	22.7	2.0	1.0
Agricultural and veterinary sciences	25.3	12.4	3.0	-	7.0	3.2	11.3	5.2	4.0	4.0
Social sciences	31.7	18.2	2.0	1.5	10.7	6.7	14.0	9.0	5.0	1.0
Humanities and arts	3.0	-	-	-	-	-	3.0	-	-	-
Government sector	350.0	183.8	76.4	39.0	94.8	43.3	136.2	66.0	42.6	35.5
Natural sciences	99.4	43.0	33.4	14.0	21.0	8.0	38.0	15.0	7.0	6.0
Engineering and technology	134.4	69.2	39.0	22.0	49.7	21.7	45.7	25.5	-	-
Medical and health sciences	7.6	7.6	1.0	1.0	4.6	4.6	2.0	2.0	-	-
Agricultural and veterinary sciences	83.6	47.0	2.0	2.0	11.5	3.0	35.5	13.5	34.6	28.5
Social sciences	5.0	4.0	-	-	4.0	3.0	1.0	1.0	-	-
Humanities and arts	20.0	13.0	1.0	-	4.0	3.0	14.0	9.0	1.0	1.0
Tertiary education	1108.6	731.2	73.1	52.9	282.6	179.0	608.4	415.8	144.5	83.5
Natural sciences	261.1	179.2	1.0	-	39.0	29.7	186.1	143.5	35.0	6.0
Engineering and technology	106.5	57.5	24.0	17.0	23.0	8.0	58.5	32.0	1.0	0.5
Medical and health sciences	153.2	98.6	5.5	3.5	8.2	2.6	60.0	36.5	79.5	56.0
Agricultural and veterinary sciences	52.4	29.7	8.7	7.0	14.0	6.0	29.7	16.7	-	-
Social sciences	314.0	209.4	16.9	12.4	99.2	60.5	173.9	119.5	24.0	17.0
Humanities and arts	221.4	156.8	17.0	13.0	99.2	72.2	100.2	67.6	5.0	4.0
Beogradski region	1362.9	745.3	149.2	89.0	293.2	156.4	677.9	363.4	242.6	136.5
Natural sciences	507.5	231.4	35.4	15.9	73.0	35.4	306.6	149.2	92.5	30.9
Engineering and technology	214.8	98.1	71.7	43.7	62.1	23.8	72.5	29.5	8.5	1.1
Medical and health sciences	156.5	104.4	7.0	4.0	13.8	7.7	62.7	39.7	73.0	53.0
Agricultural and veterinary sciences	119.8	69.9	13.7	9.0	22.5	9.0	45.0	19.4	38.6	32.5
Social sciences	195.9	121.7	9.4	7.4	74.6	43.3	82.9	53.0	29.0	18.0
Humanities and arts	168.4	119.8	12.0	9.0	47.2	37.2	108.2	72.6	1.0	1.0
Business sector	480.9	184.7	24.8	12.6	78.6	29.0	272.5	111.1	105.0	32.0
Natural sciences	285.9	98.0	2.1	1.9	29.8	11.5	168.5	59.7	85.5	24.9
Engineering and technology	119.8	40.1	17.7	9.7	36.1	9.8	57.5	19.5	8.5	1.1
Medical and health sciences	31.7	24.7	1.0	-	2.0	1.0	26.7	22.7	2.0	1.0
Agricultural and veterinary sciences	9.8	4.2	3.0	-	-	-	2.8	0.2	4.0	4.0
Social sciences	30.7	17.7	1.0	1.0	10.7	6.7	14.0	9.0	5.0	1.0
Humanities and arts	3.0	-	-	-	-	-	3.0	-	-	-
Government sector	260.5	146.6	74.3	38.0	52.1	29.6	91.5	43.5	42.6	35.5
Natural sciences	94.3	41.0	32.3	14.0	17.0	6.0	38.0	15.0	7.0	6.0
Engineering and technology	67.0	41.0	38.0	21.0	14.0	10.0	15.0	10.0	-	-
Medical and health sciences	7.6	7.6	1.0	1.0	4.6	4.6	2.0	2.0	-	-
Agricultural and veterinary sciences	66.6	40.0	2.0	2.0	8.5	3.0	21.5	6.5	34.6	28.5
Social sciences	5.0	4.0	-	-	4.0	3.0	1.0	1.0	-	-
Humanities and arts	20.0	13.0	1.0	-	4.0	3.0	14.0	9.0	1.0	1.0
Tertiary education	621.5	414.0	50.1	38.4	162.5	97.8	313.9	208.8	95.0	69.0
Natural sciences	127.3	92.4	1.0	-	26.2	17.9	100.1	74.5	-	-
Engineering and technology	28.0	17.0	16.0	13.0	12.0	4.0	-	-	-	-
Medical and health sciences	117.2	72.1	5.0	3.0	7.2	2.1	34.0	15.0	71.0	52.0
Agricultural and veterinary sciences	43.4	25.7	8.7	7.0	14.0	6.0	20.7	12.7	-	-
Social sciences	160.2	100.0	8.4	6.4	59.9	33.6	67.9	43.0	24.0	17.0
Humanities and arts	145.4	106.8	11.0	9.0	43.2	34.2	91.2	63.6	-	-

5.2. Full-time and part-time assistant-researchers, by academic titles, sectors, fields of science, expressed in full-time equivalent, 2023 (continued)

	Full-time and part-time assistant-researchers									
	Total		Doctors of science		Master's degree/specialisation		University degree		Secondary and other education	
	All	Women	All	Women	All	Women	All	Women	All	Women
Region Vojvodine	1391.6	568.7	66.6	8.5	468.2	189.2	788.4	357.7	68.4	13.3
Natural sciences	206.6	94.5	43.1	5.0	42.0	18.9	73.5	62.8	48.0	7.8
Engineering and technology	1001.0	352.8	22.0	3.0	397.2	151.9	561.4	192.4	20.4	5.5
Medical and health sciences	10.0	8.0	-	-	-	-	10.0	8.0	-	-
Agricultural and veterinary sciences	36.5	16.5	-	-	7.0	1.5	29.5	15.0	-	-
Social sciences	128.5	92.9	1.5	0.5	22.0	16.9	105.0	75.5	-	-
Humanities and arts	9.0	4.0	-	-	-	-	9.0	4.0	-	-
Business sector	1081.8	363.3	65.0	8.5	407.7	149.8	575.7	197.7	33.4	7.3
Natural sciences	96.7	19.7	42.0	5.0	27.2	6.1	14.5	6.8	13.0	1.8
Engineering and technology	971.6	336.6	22.0	3.0	376.5	142.2	552.7	185.9	20.4	5.5
Agricultural and veterinary sciences	12.5	6.5	-	-	4.0	1.5	8.5	5.0	-	-
Social sciences	1.0	0.5	1.0	0.5	-	-	-	-	-	-
Government sector	45.5	22.2	1.1	-	25.7	10.7	18.7	11.5	-	-
Natural sciences	3.1	1.0	1.1	-	2.0	1.0	-	-	-	-
Engineering and technology	27.4	15.2	-	-	20.7	9.7	6.7	5.5	-	-
Agricultural and veterinary sciences	15.0	6.0	-	-	3.0	-	12.0	6.0	-	-
Tertiary education	264.3	183.2	0.5	-	34.8	28.7	194.0	148.5	35.0	6.0
Natural sciences	106.8	73.8	-	-	12.8	11.8	59.0	56.0	35.0	6.0
Engineering and technology	2.0	1.0	-	-	-	-	2.0	1.0	-	-
Medical and health sciences	10.0	8.0	-	-	-	-	10.0	8.0	-	-
Agricultural and veterinary sciences	9.0	4.0	-	-	-	-	9.0	4.0	-	-
Social sciences	127.5	92.4	0.5	-	22.0	16.9	105.0	75.5	-	-
Humanities and arts	9.0	4.0	-	-	-	-	9.0	4.0	-	-
Region Šumadije i Zapadne Srbije	115.4	63.4	8.5	6.5	39.3	20.5	51.6	27.9	16.0	8.5
Natural sciences	32.0	15.0	-	-	3.0	2.0	27.0	13.0	2.0	-
Engineering and technology	28.1	12.9	-	-	13.0	5.0	14.6	7.4	0.5	0.5
Medical and health sciences	20.0	12.5	0.5	0.5	1.0	0.5	10.0	7.5	8.5	4.0
Social sciences	14.3	7.0	8.0	6.0	6.3	1.0	-	-	-	-
Humanities and arts	21.0	16.0	-	-	16.0	12.0	-	-	5.0	4.0
Business sector	25.1	10.9	-	-	8.0	3.0	14.6	7.4	2.5	0.5
Natural sciences	3.0	1.0	-	-	1.0	1.0	-	-	2.0	-
Engineering and technology	22.1	9.9	-	-	7.0	2.0	14.6	7.4	0.5	0.5
Government sector	2.0	1.0	-	-	2.0	1.0	-	-	-	-
Natural sciences	2.0	1.0	-	-	2.0	1.0	-	-	-	-
Tertiary education	88.3	51.5	8.5	6.5	29.3	16.5	37.0	20.5	13.5	8.0
Natural sciences	27.0	13.0	-	-	-	-	27.0	13.0	-	-
Engineering and technology	6.0	3.0	-	-	6.0	3.0	-	-	-	-
Medical and health sciences	20.0	12.5	0.5	0.5	1.0	0.5	10.0	7.5	8.5	4.0
Social sciences	14.3	7.0	8.0	6.0	6.3	1.0	-	-	-	-
Humanities and arts	21.0	16.0	-	-	16.0	12.0	-	-	5.0	4.0
Region Južne i Istočne Srbije	201.3	107.2	15.0	9.0	82.2	41.9	97.7	54.4	6.4	1.9
Natural sciences	6.0	2.4	-	-	2.2	0.2	2.2	0.8	1.6	1.4
Engineering and technology	125.3	55.1	9.0	5.0	25.0	4.0	86.5	45.6	4.8	0.5
Medical and health sciences	7.0	7.0	-	-	1.0	1.0	6.0	6.0	-	-
Agricultural and veterinary sciences	5.0	2.7	-	-	3.0	1.7	2.0	1.0	-	-
Social sciences	12.0	10.0	-	-	11.0	9.0	1.0	1.0	-	-
Humanities and arts	46.0	30.0	6.0	4.0	40.0	26.0	-	-	-	-
Business sector	24.8	10.7	-	-	11.2	3.9	8.2	5.4	5.4	1.4
Natural sciences	6.0	2.4	-	-	2.2	0.2	2.2	0.8	1.6	1.4
Engineering and technology	14.8	5.6	-	-	5.0	1.0	6.0	4.6	3.8	-
Medical and health sciences	1.0	1.0	-	-	1.0	1.0	-	-	-	-
Agricultural and veterinary sciences	3.0	1.7	-	-	3.0	1.7	-	-	-	-
Government sector	42.0	14.0	1.0	1.0	15.0	2.0	26.0	11.0	-	-
Engineering and technology	40.0	13.0	1.0	1.0	15.0	2.0	24.0	10.0	-	-
Agricultural and veterinary sciences	2.0	1.0	-	-	-	-	2.0	1.0	-	-
Tertiary education	134.5	82.5	14.0	8.0	56.0	36.0	63.5	38.0	1.0	0.5
Engineering and technology	70.5	36.5	8.0	4.0	5.0	1.0	56.5	31.0	1.0	0.5
Medical and health sciences	6.0	6.0	-	-	-	-	6.0	6.0	-	-
Social sciences	12.0	10.0	-	-	11.0	9.0	1.0	1.0	-	-
Humanities and arts	46.0	30.0	6.0	4.0	40.0	26.0	-	-	-	-
Region Kosovo i Metohija	...	...	...	...	...	...	...	...	...	...

6.1. Engaged on the basis of work on contract or author contract (head count), 2023

	Engaged on the basis of work on contract or author contract							
	Total		Researchers		Assistant-researchers		Other	
	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	4401	2310	3370	1840	527	250	504	220
Natural sciences	1508	826	1232	694	160	78	116	54
Engineering and technology	907	297	642	217	136	38	129	42
Medical and health sciences	581	372	452	278	43	27	86	67
Agricultural and veterinary sciences	157	80	139	73	8	3	10	4
Social sciences	577	306	408	207	127	68	42	31
Humanities and arts	671	429	497	371	53	36	121	22
Business sector	1324	711	989	555	181	67	154	89
Natural sciences	558	334	464	295	45	14	49	25
Engineering and technology	227	41	161	33	37	2	29	6
Medical and health sciences	471	308	355	224	43	27	73	57
Agricultural and veterinary sciences	18	6	9	3	6	2	3	1
Social sciences	50	22	-	-	50	22	-	-
Government sector	582	290	279	152	100	55	203	83
Natural sciences	139	65	89	36	28	15	22	14
Engineering and technology	124	63	48	25	40	16	36	22
Medical and health sciences	53	35	42	25	-	-	11	10
Agricultural and veterinary sciences	16	9	9	6	-	-	7	3
Social sciences	99	62	47	25	22	15	30	22
Humanities and arts	151	56	44	35	10	9	97	12
Tertiary education	2491	1305	2101	1132	243	125	147	48
Natural sciences	808	424	679	363	84	46	45	15
Engineering and technology	556	193	433	159	59	20	64	14
Medical and health sciences	57	29	55	29	-	-	2	-
Agricultural and veterinary sciences	123	65	121	64	2	1	-	-
Social sciences	427	221	360	181	55	31	12	9
Humanities and arts	520	373	453	336	43	27	24	10
Non-profit sector	4	4	1	1	3	3	-	-
Natural sciences	3	3	-	-	3	3	-	-
Social sciences	1	1	1	1	-	-	-	-
Beogradski region	2985	1545	2182	1168	361	177	442	200
Natural sciences	1018	562	826	461	111	58	81	43
Engineering and technology	475	146	298	97	54	9	123	40
Medical and health sciences	575	368	446	274	43	27	86	67
Agricultural and veterinary sciences	135	69	122	64	4	2	9	3
Social sciences	385	202	231	113	117	61	37	28
Humanities and arts	397	198	259	159	32	20	106	19
Business sector	1217	681	930	538	156	61	131	82
Natural sciences	511	320	447	290	33	10	31	20
Engineering and technology	179	29	127	24	28	1	24	4
Medical and health sciences	471	308	355	224	43	27	73	57
Agricultural and veterinary sciences	6	2	1	-	2	1	3	1
Social sciences	50	22	-	-	50	22	-	-
Government sector	534	270	266	145	68	44	200	81
Natural sciences	133	63	84	35	28	15	21	13
Engineering and technology	90	52	47	25	8	5	35	22
Medical and health sciences	53	35	42	25	-	-	11	10
Agricultural and veterinary sciences	8	2	2	-	-	-	6	2
Social sciences	99	62	47	25	22	15	30	22
Humanities and arts	151	56	44	35	10	9	97	12
Tertiary education	1233	593	985	484	137	72	111	37
Natural sciences	374	179	295	136	50	33	29	10
Engineering and technology	206	65	124	48	18	3	64	14
Medical and health sciences	51	25	49	25	-	-	2	-
Agricultural and veterinary sciences	121	65	119	64	2	1	-	-
Social sciences	235	117	183	87	45	24	7	6
Humanities and arts	246	142	215	124	22	11	9	7
Non-profit sector	1	1	1	1	-	-	-	-
Social sciences	1	1	1	1	-	-	-	-

6.1. Engaged on the basis of work on contract or author contract (head count), 2023 (continued)

	Engaged on the basis of work on contract or author contract							
	Total		Researchers		Assistant-researchers		Other	
	All	Women	All	Women	All	Women	All	Women
Region Vojvodine	577	291	458	254	83	26	36	11
Natural sciences	437	237	365	214	38	13	34	10
Engineering and technology	60	21	20	9	39	12	1	-
Medical and health sciences	6	4	6	4	-	-	-	-
Agricultural and veterinary sciences	14	4	10	3	3	-	1	1
Social sciences	60	25	57	24	3	1	-	-
Business sector	63	17	24	8	21	4	18	5
Natural sciences	42	13	13	5	11	3	18	5
Engineering and technology	10	1	3	-	7	1	-	-
Agricultural and veterinary sciences	11	3	8	3	3	-	-	-
Government sector	38	13	4	1	32	11	2	1
Natural sciences	4	1	4	1	-	-	-	-
Engineering and technology	33	11	-	-	32	11	1	-
Agricultural and veterinary sciences	1	1	-	-	-	-	1	1
Tertiary education	473	258	430	245	27	8	16	5
Natural sciences	388	220	348	208	24	7	16	5
Engineering and technology	17	9	17	9	-	-	-	-
Medical and health sciences	6	4	6	4	-	-	-	-
Agricultural and veterinary sciences	2	-	2	-	-	-	-	-
Social sciences	60	25	57	24	3	1	-	-
Non-profit sector	3	3	-	-	3	3	-	-
Natural sciences	3	3	-	-	3	3	-	-
Region Šumadije i Zapadne Srbije	445	309	391	280	33	22	21	7
Natural sciences	38	22	27	15	10	6	1	1
Engineering and technology	65	17	63	17	2	-	-	-
Agricultural and veterinary sciences	7	6	7	6	-	-	-	-
Social sciences	61	33	56	30	-	-	5	3
Humanities and arts	274	231	238	212	21	16	15	3
Business sector	29	9	27	9	2	-	-	-
Engineering and technology	29	9	27	9	2	-	-	-
Government sector	9	7	8	6	-	-	1	1
Natural sciences	2	1	1	-	-	-	1	1
Agricultural and veterinary sciences	7	6	7	6	-	-	-	-
Tertiary education	407	293	356	265	31	22	20	6
Natural sciences	36	21	26	15	10	6	-	-
Engineering and technology	36	8	36	8	-	-	-	-
Social sciences	61	33	56	30	-	-	5	3
Humanities and arts	274	231	238	212	21	16	15	3
Region Južne i Istočne Srbije	394	165	339	138	50	25	5	2
Natural sciences	15	5	14	4	1	1	-	-
Engineering and technology	307	113	261	94	41	17	5	2
Agricultural and veterinary sciences	1	1	-	-	1	1	-	-
Social sciences	71	46	64	40	7	6	-	-
Business sector	15	4	8	-	2	2	5	2
Natural sciences	5	1	4	-	1	1	-	-
Engineering and technology	9	2	4	-	-	-	5	2
Agricultural and veterinary sciences	1	1	-	-	1	1	-	-
Government sector	1	-	1	-	-	-	-	-
Engineering and technology	1	-	1	-	-	-	-	-
Tertiary education	378	161	330	138	48	23	-	-
Natural sciences	10	4	10	4	-	-	-	-
Engineering and technology	297	111	256	94	41	17	-	-
Social sciences	71	46	64	40	7	6	-	-
Region Kosovo i Metohija	...	...	...	...	...	...	...	...

6.2. Engaged on the basis of work on contract or author contract, expressed in full-time equivalent, 2023

	Engaged on the basis of work on contract or author contract							
	Total		Researchers		Assistant-researchers		Other	
	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	2884.1	1505.4	2290.4	1226.4	356.6	166.4	237.1	112.6
Natural sciences	1014.3	532.8	789.6	424.4	142.1	67.5	82.6	40.9
Engineering and technology	717.0	246.0	552.4	187.5	84.6	27.0	80.0	31.5
Medical and health sciences	243.0	153.7	219.2	136.5	10.0	6.0	13.8	11.2
Agricultural and veterinary sciences	102.8	53.4	96.2	50.8	2.8	1.0	3.8	1.6
Social sciences	405.6	216.2	292.8	153.8	89.5	44.7	23.3	17.7
Humanities and arts	401.4	303.3	340.2	273.4	27.6	20.2	33.6	9.7
Business sector	617.3	281.0	405.2	201.3	128.6	42.1	83.5	37.6
Natural sciences	225.4	114.4	137.7	77.5	41.5	12.6	46.2	24.3
Engineering and technology	150.4	21.8	97.7	14.5	26.5	2.0	26.2	5.3
Medical and health sciences	186.4	122.2	166.8	108.7	10.0	6.0	9.6	7.5
Agricultural and veterinary sciences	5.9	1.4	3.0	0.6	1.4	0.3	1.5	0.5
Social sciences	49.2	21.2	-	-	49.2	21.2	-	-
Government sector	287.6	147.6	162.1	72.9	42.8	24.9	82.7	49.8
Natural sciences	90.7	40.9	58.8	21.1	19.8	11.4	12.1	8.4
Engineering and technology	94.9	51.9	45.2	22.2	15.1	7.7	34.6	22.0
Medical and health sciences	19.4	11.2	15.4	7.5	-	-	4.0	3.7
Agricultural and veterinary sciences	5.2	2.3	2.9	1.2	-	-	2.3	1.1
Social sciences	54.0	31.8	33.3	16.7	6.9	4.9	13.8	10.2
Humanities and arts	23.4	9.5	6.5	4.2	1.0	0.9	15.9	4.4
Tertiary education	1978.8	1076.4	1723.0	952.1	184.9	99.1	70.9	25.2
Natural sciences	697.9	377.2	593.1	325.8	80.5	43.2	24.3	8.2
Engineering and technology	471.7	172.3	409.5	150.8	43.0	17.3	19.2	4.2
Medical and health sciences	37.2	20.3	37.0	20.3	-	-	0.2	-
Agricultural and veterinary sciences	91.7	49.7	90.3	49.0	1.4	0.7	-	-
Social sciences	302.3	163.1	259.4	137.0	33.4	18.6	9.5	7.5
Humanities and arts	378.0	293.8	333.7	269.2	26.6	19.3	17.7	5.3
Non-profit sector	0.4	0.4	0.1	0.1	0.3	0.3	-	-
Natural sciences	0.3	0.3	-	-	0.3	0.3	-	-
Social sciences	0.1	0.1	0.1	0.1	-	-	-	-
Beogradski region	1631.4	809.1	1228.4	608.2	224.8	106.9	178.2	94.0
Natural sciences	551.4	280.7	406.2	198.8	96.7	51.1	48.5	30.8
Engineering and technology	347.1	117.2	244.6	81.4	27.8	6.3	74.7	29.5
Medical and health sciences	242.1	153.3	218.3	136.1	10.0	6.0	13.8	11.2
Agricultural and veterinary sciences	95.1	51.0	90.0	49.0	1.8	0.9	3.3	1.1
Social sciences	268.3	134.6	167.1	81.5	81.9	38.4	19.3	14.7
Humanities and arts	127.4	72.3	102.2	61.4	6.6	4.2	18.6	6.7
Business sector	543.2	261.6	374.2	193.1	108.5	37.9	60.5	30.6
Natural sciences	183.4	102.0	124.8	73.2	30.4	9.5	28.2	19.3
Engineering and technology	122.1	15.5	82.4	11.2	18.5	1.0	21.2	3.3
Medical and health sciences	186.4	122.2	166.8	108.7	10.0	6.0	9.6	7.5
Agricultural and veterinary sciences	2.1	0.7	0.2	-	0.4	0.2	1.5	0.5
Social sciences	49.2	21.2	-	-	49.2	21.2	-	-
Government sector	274.9	143.0	158.1	71.6	35.0	22.2	81.8	49.2
Natural sciences	89.0	40.7	57.2	21.0	19.8	11.4	12.0	8.3
Engineering and technology	85.8	49.2	44.2	22.2	7.3	5.0	34.3	22.0
Medical and health sciences	19.4	11.2	15.4	7.5	-	-	4.0	3.7
Agricultural and veterinary sciences	3.3	0.6	1.5	-	-	-	1.8	0.6
Social sciences	54.0	31.8	33.3	16.7	6.9	4.9	13.8	10.2
Humanities and arts	23.4	9.5	6.5	4.2	1.0	0.9	15.9	4.4
Tertiary education	813.2	404.4	696.0	343.4	81.3	46.8	35.9	14.2
Natural sciences	279.0	138.0	224.2	104.6	46.5	30.2	8.3	3.2
Engineering and technology	139.2	52.5	118.0	48.0	2.0	0.3	19.2	4.2
Medical and health sciences	36.3	19.9	36.1	19.9	-	-	0.2	-
Agricultural and veterinary sciences	89.7	49.7	88.3	49.0	1.4	0.7	-	-
Social sciences	165.0	81.5	133.7	64.7	25.8	12.3	5.5	4.5
Humanities and arts	104.0	62.8	95.7	57.2	5.6	3.3	2.7	2.3

6.2. Engaged on the basis of work on contract or author contract, expressed in full-time equivalent, 2023 (continued)

	Engaged on the basis of work on contract or author contract							
	Total		Researchers		Assistant-researchers		Other	
	All	Women	All	Women	All	Women	All	Women
Non-profit sector	0.1	0.1	0.1	0.1	-	-	-	-
Social sciences	0.1	0.1	0.1	0.1	-	-	-	-
Region Vojvodine	483.5	253.8	398.1	229.0	50.6	14.3	34.8	10.5
Natural sciences	430.2	232.7	360.9	212.4	35.3	10.3	34.0	10.0
Engineering and technology	18.6	5.5	4.5	1.8	13.8	3.7	0.3	-
Medical and health sciences	0.9	0.4	0.9	0.4	-	-	-	-
Agricultural and veterinary sciences	6.2	1.1	4.8	0.6	0.9	-	0.5	0.5
Social sciences	27.6	14.1	27.0	13.8	0.6	0.3	-	-
Business sector	52.1	13.9	16.2	4.9	17.9	4.0	18.0	5.0
Natural sciences	41.3	12.3	12.3	4.3	11.0	3.0	18.0	5.0
Engineering and technology	7.1	1.0	1.1	-	6.0	1.0	-	-
Agricultural and veterinary sciences	3.7	0.6	2.8	0.6	0.9	-	-	-
Government sector	9.2	3.3	0.6	0.1	7.8	2.7	0.8	0.5
Natural sciences	0.6	0.1	0.6	0.1	-	-	-	-
Engineering and technology	8.1	2.7	-	-	7.8	2.7	0.3	-
Agricultural and veterinary sciences	0.5	0.5	-	-	-	-	0.5	0.5
Tertiary education	421.9	236.3	381.3	224.0	24.6	7.3	16.0	5.0
Natural sciences	388.0	220.0	348.0	208.0	24.0	7.0	16.0	5.0
Engineering and technology	3.4	1.8	3.4	1.8	-	-	-	-
Medical and health sciences	0.9	0.4	0.9	0.4	-	-	-	-
Agricultural and veterinary sciences	2.0	-	2.0	-	-	-	-	-
Social sciences	27.6	14.1	27.0	13.8	0.6	0.3	-	-
Non-profit sector	0.3	0.3	-	-	0.3	0.3	-	-
Natural sciences	0.3	0.3	-	-	0.3	0.3	-	-
Region Šumadije i Zapadne Srbije	396.1	283.8	344.0	255.7	33.0	22.0	19.1	6.1
Natural sciences	29.0	18.1	18.9	12.0	10.0	6.0	0.1	0.1
Engineering and technology	48.0	10.6	46.0	10.6	2.0	-	-	-
Agricultural and veterinary sciences	1.4	1.2	1.4	1.2	-	-	-	-
Social sciences	43.7	22.9	39.7	19.9	-	-	4.0	3.0
Humanities and arts	274.0	231.0	238.0	212.0	21.0	16.0	15.0	3.0
Business sector	12.7	3.3	10.7	3.3	2.0	-	-	-
Engineering and technology	12.7	3.3	10.7	3.3	2.0	-	-	-
Government sector	2.5	1.3	2.4	1.2	-	-	0.1	0.1
Natural sciences	1.1	0.1	1.0	-	-	-	0.1	0.1
Agricultural and veterinary sciences	1.4	1.2	1.4	1.2	-	-	-	-
Tertiary education	380.9	279.2	330.9	251.2	31.0	22.0	19.0	6.0
Natural sciences	27.9	18.0	17.9	12.0	10.0	6.0	-	-
Engineering and technology	35.3	7.3	35.3	7.3	-	-	-	-
Social sciences	43.7	22.9	39.7	19.9	-	-	4.0	3.0
Humanities and arts	274.0	231.0	238.0	212.0	21.0	16.0	15.0	3.0
Region Južne i Istočne Srbije	373.1	158.7	319.9	133.5	48.2	23.2	5.0	2.0
Natural sciences	3.7	1.3	3.6	1.2	0.1	0.1	-	-
Engineering and technology	303.3	112.7	257.3	93.7	41.0	17.0	5.0	2.0
Agricultural and veterinary sciences	0.1	0.1	-	-	0.1	0.1	-	-
Social sciences	66.0	44.6	59.0	38.6	7.0	6.0	-	-
Business sector	9.3	2.2	4.1	-	0.2	0.2	5.0	2.0
Natural sciences	0.7	0.1	0.6	-	0.1	0.1	-	-
Engineering and technology	8.5	2.0	3.5	-	-	-	5.0	2.0
Agricultural and veterinary sciences	0.1	0.1	-	-	0.1	0.1	-	-
Government sector	1.0	-	1.0	-	-	-	-	-
Engineering and technology	1.0	-	1.0	-	-	-	-	-
Tertiary education	362.8	156.5	314.8	133.5	48.0	23.0	-	-
Natural sciences	3.0	1.2	3.0	1.2	-	-	-	-
Engineering and technology	293.8	110.7	252.8	93.7	41.0	17.0	-	-
Social sciences	66.0	44.6	59.0	38.6	7.0	6.0	-	-
Region Kosovo i Metohija	...	...	...	...	...	...	...	...

7.1. Research works (projects and studies), by sectors and territories, 2023

	Research works (projects and studies), by sectors and territories							
	Number of works				Value of scientific works, thous. RSD			
	Total	Basic	Applied	Development	Total	Basic	Applied	Development
REPUBLIC OF SERBIA	14712	7627	4385	2700	77433812	21311158	22499438	33623216
Business sector	1512	268	532	712	33671839	1237912	8544719	23889208
Government sector	5256	3634	1018	604	20426522	8791706	6517167	5117649
Tertiary education	7939	3722	2833	1384	23333610	11280417	7436834	4616359
Non-profit sector	5	3	2	-	1841	1123	718	-
Beogradski region	10013	5549	2823	1641	43074279	16787149	12783702	13503428
Business sector	1128	261	401	466	11324300	1187638	3548840	6587822
Government sector	4491	3388	672	431	16470119	8598598	3528961	4342560
Tertiary education	4392	1900	1748	744	15279142	7000913	5705183	2573046
Non-profit sector	2	-	2	-	718	-	718	-
Region Vojvodine	1858	516	888	454	28293212	1752342	8775648	17765222
Business sector	204	6	103	95	20332595	30274	4546444	15755877
Government sector	375	10	258	107	3315673	6997	2816486	492190
Tertiary education	1276	497	527	252	4643821	1713948	1412718	1517155
Non-profit sector	3	3	-	-	1123	1123	-	-
Region Šumadije i Zapadne Srbije	1192	732	292	168	2794352	1512637	450585	831130
Business sector	68	-	19	49	717903	-	289606	428297
Government sector	237	236	-	1	257215	186111	-	71104
Tertiary education	887	496	273	118	1819234	1326526	160979	331729
Region Južne i Istočne Srbije	1649	830	382	437	3271969	1259030	489503	1523436
Business sector	112	1	9	102	1297041	20000	159829	1117212
Government sector	153	-	88	65	383515	-	171720	211795
Tertiary education	1384	829	285	270	1591413	1239030	157954	194429
Region Kosovo i Metohija	...	...	...	...	...	...	...	...

7.2. Research works (projects and studies), by sectors and fields of science, 2023

	Research works (projects and studies), by sectors and fields of science							
	Number of works				Value of scientific works, thous. RSD			
	Total	Basic	Applied	Development	Total	Basic	Applied	Development
REPUBLIC OF SERBIA	14712	7627	4385	2700	77433812	21311158	22499438	33623216
Natural sciences	3312	2069	615	628	22773241	8498189	8995526	5279526
Engineering and technology	3618	521	1753	1344	32607738	2076195	5732163	24799380
Medical and health sciences	686	274	127	285	2518150	1074313	628879	814958
Agricultural and veterinary sciences	1309	211	863	235	6468986	492122	4851234	1125630
Social sciences	3858	3142	576	140	8174579	5003035	1781490	1390054
Humanities and arts	1929	1410	451	68	4891118	4167304	510146	213668
Business sector	1512	268	532	712	33671839	1237912	8544719	23889208
Natural sciences	545	98	208	239	9683041	462342	6848208	2372491
Engineering and technology	822	148	267	407	22299973	696881	1157667	20445425
Medical and health sciences	73	11	36	26	948152	28453	377009	542690
Agricultural and veterinary sciences	40	1	16	23	358890	14328	140287	204275
Social sciences	26	4	5	17	373929	28054	21548	324327
Humanities and arts	6	6	-	-	7854	7854	-	-
Government sector	5256	3634	1018	604	20426522	8791706	6517167	5117649
Natural sciences	1572	1205	125	242	8104662	4956542	1114093	2034027
Engineering and technology	686	71	412	203	4226913	298488	1503656	2424769
Medical and health sciences	147	147	-	-	463779	463779	-	-
Agricultural and veterinary sciences	635	152	396	87	4692364	384538	3761313	546513
Social sciences	1088	1069	13	6	1327150	1169509	64129	93512
Humanities and arts	1128	990	72	66	1611654	1518850	73976	18828
Tertiary education	7939	3722	2833	1384	23333610	11280417	7436834	4616359
Natural sciences	1192	763	282	147	4984415	3078182	1033225	873008
Engineering and technology	2110	302	1074	734	6080852	1080826	3070840	1929186
Medical and health sciences	466	116	91	259	1106219	582081	251870	272268
Agricultural and veterinary sciences	634	58	451	125	1417732	93256	949634	374842
Social sciences	2742	2069	556	117	6472782	3805472	1695095	972215
Humanities and arts	795	414	379	2	3271610	2640600	436170	194840
Non-profit sector	5	3	2	-	1841	1123	718	-
Natural sciences	3	3	-	-	1123	1123	-	-
Social sciences	2	-	2	-	718	-	718	-
Beogradski region	10013	5549	2823	1641	43074279	16787149	12783702	13503428
Natural sciences	2450	1587	465	398	15732420	7131218	4279192	4322010
Engineering and technology	1798	278	894	626	12343441	1384993	4017913	6940535
Medical and health sciences	611	208	122	281	2061960	772232	528011	761717
Agricultural and veterinary sciences	985	185	625	175	3673803	452110	2398322	823371
Social sciences	2283	1900	289	94	5410298	3391680	1382288	636330
Humanities and arts	1886	1391	428	67	3852357	3654916	177976	19465
Business sector	1128	261	401	466	11324300	1187638	3548840	6587822
Natural sciences	353	97	122	134	4531437	445592	2382362	1703483
Engineering and technology	666	143	230	293	5433949	663657	763954	4006338
Medical and health sciences	68	11	34	23	938890	28453	374645	535792
Agricultural and veterinary sciences	15	1	12	2	45689	14328	8007	23354
Social sciences	20	3	3	14	366481	27754	19872	318855
Humanities and arts	6	6	-	-	7854	7854	-	-
Government sector	4491	3388	672	431	16470119	8598598	3528961	4342560
Natural sciences	1289	969	125	195	7766758	4770431	1114093	1882234
Engineering and technology	302	62	159	81	2860966	295449	680744	1884773
Medical and health sciences	147	147	-	-	463779	463779	-	-
Agricultural and veterinary sciences	537	151	303	83	2439812	380580	1596019	463213
Social sciences	1088	1069	13	6	1327150	1169509	64129	93512
Humanities and arts	1128	990	72	66	1611654	1518850	73976	18828
Tertiary education	4392	1900	1748	744	15279142	7000913	5705183	2573046
Natural sciences	808	521	218	69	3434225	1915195	782737	736293
Engineering and technology	830	73	505	252	4048526	425887	2573215	1049424
Medical and health sciences	396	50	88	258	659291	280000	153366	225925
Agricultural and veterinary sciences	433	33	310	90	1188302	57202	794296	336804
Social sciences	1173	828	271	74	3715949	2194417	1297569	223963
Humanities and arts	752	395	356	1	2232849	2128212	104000	637
Non-profit sector	2	-	2	-	718	-	718	-
Social sciences	2	-	2	-	718	-	718	-
Region Vojvodine	1858	516	888	454	28293212	1752342	8775648	17765222
Natural sciences	317	14	143	160	5588712	386267	4526803	675642
Engineering and technology	834	17	586	231	17445755	20125	1312675	16112955
Medical and health sciences	26	22	3	1	191836	88799	98504	4533
Agricultural and veterinary sciences	92	14	56	22	2457158	31853	2205873	219432
Social sciences	566	448	78	40	2239330	1186897	299773	752660
Humanities and arts	23	1	22	-	370421	38401	332020	-

7.2. Research works (projects and studies), by sectors and fields of science, 2023 (continued)

	Research works (projects and studies), by sectors and fields of science							
	Number of works				Value of scientific works, thous. RSD			
	Total	Basic	Applied	Development	Total	Basic	Applied	Development
Business sector	204	6	103	95	20332595	30274	4546444	15755877
Natural sciences	116	1	80	35	4725367	16750	4321483	387134
Engineering and technology	71	4	18	49	15347069	13224	150462	15183383
Medical and health sciences	1	-	-	1	4533	-	-	4533
Agricultural and veterinary sciences	10	-	3	7	248178	-	72823	175355
Social sciences	6	1	2	3	7448	300	1676	5472
Government sector	375	10	258	107	3315673	6997	2816486	492190
Natural sciences	47	-	-	47	151793	-	-	151793
Engineering and technology	319	9	253	57	1154152	3039	822912	328201
Agricultural and veterinary sciences	9	1	5	3	2009728	3958	1993574	12196
Tertiary education	1276	497	527	252	4643821	1713948	1412718	1517155
Natural sciences	151	10	63	78	710429	368394	205320	136715
Engineering and technology	444	4	315	125	944534	3862	339301	601371
Medical and health sciences	25	22	3	-	187303	88799	98504	-
Agricultural and veterinary sciences	73	13	48	12	199252	27895	139476	31881
Social sciences	560	447	76	37	2231882	1186597	298097	747188
Humanities and arts	23	1	22	-	370421	38401	332020	-
Non-profit sector	3	3	-	-	1123	1123	-	-
Natural sciences	3	3	-	-	1123	1123	-	-
Region Šumadije i Zapadne Srbije	1192	732	292	168	2794352	1512637	450585	831130
Natural sciences	249	237	4	8	897059	761294	53918	81847
Engineering and technology	433	171	148	114	773506	75471	273189	424846
Medical and health sciences	2	1	-	1	154477	108134	-	46343
Agricultural and veterinary sciences	144	12	94	38	166305	8159	75319	82827
Social sciences	361	309	46	6	220397	171174	48159	1064
Humanities and arts	3	2	-	1	582608	388405	-	194203
Business sector	68	-	19	49	717903	-	289606	428297
Natural sciences	11	-	3	8	90597	-	8750	81847
Engineering and technology	42	-	15	27	562283	-	221399	340884
Agricultural and veterinary sciences	15	-	1	14	65023	-	59457	5566
Government sector	237	236	-	1	257215	186111	-	71104
Natural sciences	236	236	-	-	186111	186111	-	-
Agricultural and veterinary sciences	1	-	-	1	71104	-	-	71104
Tertiary education	887	496	273	118	1819234	1326526	160979	331729
Natural sciences	2	1	1	-	620351	575183	45168	-
Engineering and technology	391	171	133	87	211223	75471	51790	83962
Medical and health sciences	2	1	-	1	154477	108134	-	46343
Agricultural and veterinary sciences	128	12	93	23	30178	8159	15862	6157
Social sciences	361	309	46	6	220397	171174	48159	1064
Humanities and arts	3	2	-	1	582608	388405	-	194203
Region Južne i Istočne Srbije	1649	830	382	437	3271969	1259030	489503	1523436
Natural sciences	296	231	3	62	555050	219410	135613	200027
Engineering and technology	553	55	125	373	2045036	595606	128386	1321044
Medical and health sciences	47	43	2	2	109877	105148	2364	2365
Agricultural and veterinary sciences	88	-	88	-	171720	-	171720	-
Social sciences	648	485	163	-	304554	253284	51270	-
Humanities and arts	17	16	1	-	85732	85582	150	-
Business sector	112	1	9	102	1297041	20000	159829	1117212
Natural sciences	65	-	3	62	335640	-	135613	200027
Engineering and technology	43	1	4	38	956672	20000	21852	914820
Medical and health sciences	4	-	2	2	4729	-	2364	2365
Government sector	153	-	88	65	383515	-	171720	211795
Engineering and technology	65	-	-	65	211795	-	-	211795
Agricultural and veterinary sciences	88	-	88	-	171720	-	171720	-
Tertiary education	1384	829	285	270	1591413	1239030	157954	194429
Natural sciences	231	231	-	-	219410	219410	-	-
Engineering and technology	445	54	121	270	876569	575606	106534	194429
Medical and health sciences	43	43	-	-	105148	105148	-	-
Social sciences	648	485	163	-	304554	253284	51270	-
Humanities and arts	17	16	1	-	85732	85582	150	-
Region Kosovo i Metohija	...	...	...	...	...	...	...	...

8.1. Gross domestic expenditure for R&D, by sectors and fields of science, 2023

Thous. RSD

	Gross domestic expenditure	Gross investments	Current costs		
			Total	Gross salaries	Material costs
REPUBLIC OF SERBIA	77433812	12476737	64957075	47609047	17348028
Natural sciences	22773241	834434	21938807	15805277	6133530
Engineering and technology	32607738	10760125	21847613	15862718	5984895
Medical and health sciences	2518150	78060	2440090	1455311	984779
Agricultural and veterinary sciences	6468986	335913	6133073	4788880	1344193
Social sciences	8174579	301576	7873003	5766993	2106010
Humanities and arts	4891118	166629	4724489	3929868	794621
Business sector	33671839	10730264	22941575	17837754	5103821
Natural sciences	9683041	188266	9494775	6863031	2631744
Engineering and technology	22299973	10462517	11837456	10053218	1784238
Medical and health sciences	948152	4272	943880	557556	386324
Agricultural and veterinary sciences	358890	39208	319682	217580	102102
Social sciences	373929	36001	337928	138515	199413
Humanities and arts	7854	-	7854	7854	-
Government sector	20426522	801558	19624964	14948723	4676241
Natural sciences	8104662	442813	7661849	5800596	1861253
Engineering and technology	4226913	132083	4094830	2803356	1291474
Medical and health sciences	463779	35238	428541	295299	133242
Agricultural and veterinary sciences	4692364	130927	4561437	3738367	823070
Social sciences	1327150	13889	1313261	1108100	205161
Humanities and arts	1611654	46608	1565046	1203005	362041
Tertiary education	23333610	944915	22388695	14822228	7566467
Natural sciences	4984415	203355	4781060	3141650	1639410
Engineering and technology	6080852	165525	5915327	3006144	2909183
Medical and health sciences	1106219	38550	1067669	602456	465213
Agricultural and veterinary sciences	1417732	165778	1251954	832933	419021
Social sciences	6472782	251686	6221096	4520036	1701060
Humanities and arts	3271610	120021	3151589	2719009	432580
Non-profit sector	1841	-	1841	342	1499
Natural sciences	1123	-	1123	-	1123
Social sciences	718	-	718	342	376
Beogradski region	43074279	1760961	41313318	29423999	11889319
Natural sciences	15732420	567444	15164976	11527677	3637299
Engineering and technology	12343441	700557	11642884	7099330	4543554
Medical and health sciences	2061960	52218	2009742	1182764	826978
Agricultural and veterinary sciences	3673803	189513	3484290	2638120	846170
Social sciences	5410298	191442	5218856	3880396	1338460
Humanities and arts	3852357	59787	3792570	3095712	696858
Business sector	11324300	625916	10698384	7901069	2797315
Natural sciences	4531437	41466	4489971	3704805	785166
Engineering and technology	5433949	538089	4895860	3492330	1403530
Medical and health sciences	938890	3743	935147	551682	383465
Agricultural and veterinary sciences	45689	6657	39032	11044	27988
Social sciences	366481	35961	330520	133354	197166
Humanities and arts	7854	-	7854	7854	-
Government sector	16470119	558576	15911543	11848555	4062988
Natural sciences	7766758	386858	7379900	5556781	1823119
Engineering and technology	2860966	58350	2802616	1765374	1037242
Medical and health sciences	463779	35238	428541	295299	133242
Agricultural and veterinary sciences	2439812	17633	2422179	1919996	502183
Social sciences	1327150	13889	1313261	1108100	205161
Humanities and arts	1611654	46608	1565046	1203005	362041
Tertiary education	15279142	576469	14702673	9674033	5028640
Natural sciences	3434225	139120	3295105	2266091	1029014
Engineering and technology	4048526	104118	3944408	1841626	2102782
Medical and health sciences	659291	13237	646054	335783	310271
Agricultural and veterinary sciences	1188302	165223	1023079	707080	315999
Social sciences	3715949	141592	3574357	2638600	935757
Humanities and arts	2232849	13179	2219670	1884853	334817
Non-profit sector	718	-	718	342	376
Social sciences	718	-	718	342	376
Region Vojvodine	28293212	9861219	18431993	14461379	3970614
Natural sciences	5588712	187161	5401551	3189759	2211792
Engineering and technology	17445755	9337250	8108505	7320598	787907
Medical and health sciences	191836	16707	175129	160726	14403

8.1. Gross domestic expenditure for R&D, by sectors and fields of science, 2023 (continued)

Thous. RSD

	Gross domestic expenditure	Gross investments	Current costs		
			Total	Gross salaries	Material costs
Agricultural and veterinary sciences	2457158	141188	2315970	1927066	388904
Social sciences	2239330	72071	2167259	1654819	512440
Humanities and arts	370421	106842	263579	208411	55168
Business sector	20332595	9390462	10942133	8888964	2053169
Natural sciences	4725367	127176	4598191	2792400	1805791
Engineering and technology	15347069	9232572	6114497	5939812	174685
Medical and health sciences	4533	-	4533	3624	909
Agricultural and veterinary sciences	248178	30674	217504	147967	69537
Social sciences	7448	40	7408	5161	2247
Government sector	3315673	194460	3121213	2681301	439912
Natural sciences	151793	10213	141580	118238	23342
Engineering and technology	1154152	73733	1080419	882824	197595
Agricultural and veterinary sciences	2009728	110514	1899214	1680239	218975
Tertiary education	4643821	276297	4367524	2891114	1476410
Natural sciences	710429	49772	660657	279121	381536
Engineering and technology	944534	30945	913589	497962	415627
Medical and health sciences	187303	16707	170596	157102	13494
Agricultural and veterinary sciences	199252	-	199252	98860	100392
Social sciences	2231882	72031	2159851	1649658	510193
Humanities and arts	370421	106842	263579	208411	55168
Non-profit sector	1123	-	1123	-	1123
Natural sciences	1123	-	1123	-	1123
Region Šumadije i Zapadne Srbije	2794352	303675	2490677	1918510	572167
Natural sciences	897059	54443	842616	671793	170823
Engineering and technology	773506	218396	555110	379053	176057
Medical and health sciences	154477	6773	147704	25685	122019
Agricultural and veterinary sciences	166305	2432	163873	139320	24553
Social sciences	220397	21631	198766	153346	45420
Humanities and arts	582608	-	582608	549313	33295
Business sector	717903	217686	500217	397725	102492
Natural sciences	90597	3111	87486	68837	18649
Engineering and technology	562283	212698	349585	270319	79266
Agricultural and veterinary sciences	65023	1877	63146	58569	4577
Government sector	257215	45742	211473	179335	32138
Natural sciences	186111	45742	140369	125577	14792
Agricultural and veterinary sciences	71104	-	71104	53758	17346
Tertiary education	1819234	40247	1778987	1341450	437537
Natural sciences	620351	5590	614761	477379	137382
Engineering and technology	211223	5698	205525	108734	96791
Medical and health sciences	154477	6773	147704	25685	122019
Agricultural and veterinary sciences	30178	555	29623	26993	2630
Social sciences	220397	21631	198766	153346	45420
Humanities and arts	582608	-	582608	549313	33295
Region Južne i Istočne Srbije	3271969	550882	2721087	1805159	915928
Natural sciences	555050	25386	529664	416048	113616
Engineering and technology	2045036	503922	1541114	1063737	477377
Medical and health sciences	109877	2362	107515	86136	21379
Agricultural and veterinary sciences	171720	2780	168940	84374	84566
Social sciences	304554	16432	288122	78432	209690
Humanities and arts	85732	-	85732	76432	9300
Business sector	1297041	496200	800841	649996	150845
Natural sciences	335640	16513	319127	296989	22138
Engineering and technology	956672	479158	477514	350757	126757
Medical and health sciences	4729	529	4200	2250	1950
Government sector	383515	2780	380735	239532	141203
Engineering and technology	211795	-	211795	155158	56637
Agricultural and veterinary sciences	171720	2780	168940	84374	84566
Tertiary education	1591413	51902	1539511	915631	623880
Natural sciences	219410	8873	210537	119059	91478
Engineering and technology	876569	24764	851805	557822	293983
Medical and health sciences	105148	1833	103315	83886	19429
Social sciences	304554	16432	288122	78432	209690
Humanities and arts	85732	-	85732	76432	9300
Region Kosovo i Metohija	...	...	...	...	...



9.1. Sources of funds spent on R&D activities, 2023

Thous. RSD

	Total	Own	Government and local authorities	Private and public enterprises	Tertiary education	Non-profit institutions	Foreign ordering parties
REPUBLIC OF SERBIA	77433812	21847607	31162172	690491	132672	127119	23473751
Natural sciences	22773241	4697410	10438469	285097	3490	113327	7235448
Engineering and technology	32607738	9191802	8183793	168317	783	7643	15055400
Medical and health sciences	2518150	517288	1394034	9004	-	-	597824
Agricultural and veterinary sciences	6468986	3550681	2566899	158674	-	-	192732
Social sciences	8174579	3250399	4334319	68696	128399	5529	387237
Humanities and arts	4891118	640027	4244658	703	-	620	5110
Business sector	33671839	10212780	1516093	303507	1383	4007	21634069
Natural sciences	9683041	2469062	414969	182141	-	464	6616405
Engineering and technology	22299973	6983349	880958	116768	783	3543	14314572
Medical and health sciences	948152	410490	8405	600	-	-	528657
Agricultural and veterinary sciences	358890	106759	152491	-	-	-	99640
Social sciences	373929	235266	59270	3998	600	-	74795
Humanities and arts	7854	7854	-	-	-	-	-
Government sector	20426522	5570574	13731276	178215	4576	3346	938535
Natural sciences	8104662	1104757	6576563	62000	2398	2600	356344
Engineering and technology	4226913	735307	3033104	26339	-	-	432163
Medical and health sciences	463779	1444	407039	8404	-	-	46892
Agricultural and veterinary sciences	4692364	3303606	1293679	75196	-	-	19883
Social sciences	1327150	245915	994457	6276	2178	126	78198
Humanities and arts	1611654	179545	1426434	-	-	620	5055
Tertiary education	23333610	6063950	15913983	208769	126713	119766	900429
Natural sciences	4984415	1123288	3446117	40956	1092	110263	262699
Engineering and technology	6080852	1473146	4269731	25210	-	4100	308665
Medical and health sciences	1106219	105354	978590	-	-	-	22275
Agricultural and veterinary sciences	1417732	140316	1120729	83478	-	-	73209
Social sciences	6472782	2769218	3280592	58422	125621	5403	233526
Humanities and arts	3271610	452628	2818224	703	-	-	55
Non-profit sector	1841	303	820	-	-	-	718
Natural sciences	1123	303	820	-	-	-	-
Social sciences	718	-	-	-	-	-	718
Beogradski region	43074279	14468438	23091135	515129	4444	119130	4876003
Natural sciences	15732420	3768154	8790307	195148	1092	112863	2864856
Engineering and technology	12343441	5555520	5629912	99869	783	4100	1053257
Medical and health sciences	2061960	406431	1068158	9004	-	-	578367
Agricultural and veterinary sciences	3673803	1719711	1747730	158474	-	-	47888
Social sciences	5410298	2482225	2545501	51931	2569	1547	326525
Humanities and arts	3852357	536397	3309527	703	-	620	5110
Business sector	11324300	6112139	1209815	200034	783	-	3801529
Natural sciences	4531437	1684282	319668	95567	-	-	2431920
Engineering and technology	5433949	3748549	816807	99869	783	-	767941
Medical and health sciences	938890	404987	4646	600	-	-	528657
Agricultural and veterinary sciences	45689	32977	12712	-	-	-	-
Social sciences	366481	233490	55982	3998	-	-	73011
Humanities and arts	7854	7854	-	-	-	-	-
Government sector	16470119	3542019	12291301	148501	2178	3346	482774
Natural sciences	7766758	1104596	6267508	58625	-	2600	333429
Engineering and technology	2860966	464101	2396865	-	-	-	-
Medical and health sciences	463779	1444	407039	8404	-	-	46892
Agricultural and veterinary sciences	2439812	1546418	798998	75196	-	-	19200
Social sciences	1327150	245915	994457	6276	2178	126	78198
Humanities and arts	1611654	179545	1426434	-	-	620	5055
Tertiary education	15279142	4814280	9590019	166594	1483	115784	590982
Natural sciences	3434225	979276	2203131	40956	1092	110263	99507
Engineering and technology	4048526	1342870	2416240	-	-	4100	285316
Medical and health sciences	659291	-	656473	-	-	-	2818
Agricultural and veterinary sciences	1188302	140316	936020	83278	-	-	28688
Social sciences	3715949	2002820	1495062	41657	391	1421	174598
Humanities and arts	2232849	348998	1883093	703	-	-	55
Non-profit sector	718	-	-	-	-	-	718
Social sciences	718	-	-	-	-	-	718
Region Vojvodine	28293212	4989316	4648500	131288	98515	3100	18422493
Natural sciences	5588712	514633	618369	89524	2398	464	4363324
Engineering and technology	17445755	2101327	1402622	31102	-	1134	13909570
Medical and health sciences	191836	93332	98504	-	-	-	-
Agricultural and veterinary sciences	2457158	1714260	598054	-	-	-	144844
Social sciences	2239330	516666	1609628	10662	96117	1502	4755
Humanities and arts	370421	49098	321323	-	-	-	-

9.1. Sources of funds spent on R&D activities, 2023 (continued)

Thous. RSD

	Total	Own	Government and local authorities	Private and public enterprises	Tertiary education	Non-profit institutions	Foreign ordering parties
Business sector	20332595	2341221	135693	91337	600	1598	17762146
Natural sciences	4725367	432886	22128	86574	-	464	4183315
Engineering and technology	15347069	1830121	33644	4763	-	1134	13477407
Medical and health sciences	4533	4533	-	-	-	-	-
Agricultural and veterinary sciences	248178	71905	76633	-	-	-	99640
Social sciences	7448	1776	3288	-	600	-	1784
Government sector	3315673	1913561	914664	29289	2398	-	455761
Natural sciences	151793	-	123530	2950	2398	-	22915
Engineering and technology	1154152	271206	424444	26339	-	-	432163
Agricultural and veterinary sciences	2009728	1642355	366690	-	-	-	683
Tertiary education	4643821	734231	3597323	10662	95517	1502	204586
Natural sciences	710429	81444	471891	-	-	-	157094
Engineering and technology	944534	-	944534	-	-	-	-
Medical and health sciences	187303	88799	98504	-	-	-	-
Agricultural and veterinary sciences	199252	-	154731	-	-	-	44521
Social sciences	2231882	514890	1606340	10662	95517	1502	2971
Humanities and arts	370421	49098	321323	-	-	-	-
Non-profit sector	1123	303	820	-	-	-	-
Natural sciences	1123	303	820	-	-	-	-
Region Šumadije i Zapadne Srbije	2794352	845208	1829543	5218	-	4180	110203
Natural sciences	897059	153326	743308	425	-	-	-
Engineering and technology	773506	481072	208561	43	-	1700	82130
Medical and health sciences	154477	16555	118465	-	-	-	19457
Agricultural and veterinary sciences	166305	1877	164228	200	-	-	-
Social sciences	220397	137846	66905	4550	-	2480	8616
Humanities and arts	582608	54532	528076	-	-	-	-
Business sector	717903	557828	89108	43	-	1700	69224
Natural sciences	90597	90597	-	-	-	-	-
Engineering and technology	562283	465354	25962	43	-	1700	69224
Agricultural and veterinary sciences	65023	1877	63146	-	-	-	-
Government sector	257215	161	256629	425	-	-	-
Natural sciences	186111	161	185525	425	-	-	-
Agricultural and veterinary sciences	71104	-	71104	-	-	-	-
Tertiary education	1819234	287219	1483806	4750	-	2480	40979
Natural sciences	620351	62568	557783	-	-	-	-
Engineering and technology	211223	15718	182599	-	-	-	12906
Medical and health sciences	154477	16555	118465	-	-	-	19457
Agricultural and veterinary sciences	30178	-	29978	200	-	-	-
Social sciences	220397	137846	66905	4550	-	2480	8616
Humanities and arts	582608	54532	528076	-	-	-	-
Region Južne i Istočne Srbije	3271969	1544645	1592994	38856	29713	709	65052
Natural sciences	555050	261297	286485	-	-	-	7268
Engineering and technology	2045036	1053883	942698	37303	-	709	10443
Medical and health sciences	109877	970	108907	-	-	-	-
Agricultural and veterinary sciences	171720	114833	56887	-	-	-	-
Social sciences	304554	113662	112285	1553	29713	-	47341
Humanities and arts	85732	-	85732	-	-	-	-
Business sector	1297041	1201592	81477	12093	-	709	1170
Natural sciences	335640	261297	73173	-	-	-	1170
Engineering and technology	956672	939325	4545	12093	-	709	-
Medical and health sciences	4729	970	3759	-	-	-	-
Government sector	383515	114833	268682	-	-	-	-
Engineering and technology	211795	-	211795	-	-	-	-
Agricultural and veterinary sciences	171720	114833	56887	-	-	-	-
Tertiary education	1591413	228220	1242835	26763	29713	-	63882
Natural sciences	219410	-	213312	-	-	-	6098
Engineering and technology	876569	114558	726358	25210	-	-	10443
Medical and health sciences	105148	-	105148	-	-	-	-
Social sciences	304554	113662	112285	1553	29713	-	47341
Humanities and arts	85732	-	85732	-	-	-	-
Region Kosovo i Metohija	...	...	...	...	...	...	...



9.2. Sources of funds spent on R&D activities, 2023

%

	Total	Own	Government and local authorities	Private and public enterprises	Tertiary education	Non-profit institutions	Foreign ordering parties
REPUBLIC OF SERBIA	100.0	28.2	40.2	0.9	0.2	0.2	30.3
Natural sciences	100.0	20.6	45.8	1.3	0.0	0.5	31.8
Engineering and technology	100.0	28.2	25.1	0.5	0.0	0.0	46.2
Medical and health sciences	100.0	20.5	55.4	0.4	-	-	23.7
Agricultural and veterinary sciences	100.0	54.9	39.7	2.4	-	-	3.0
Social sciences	100.0	39.8	53.0	0.8	1.6	0.1	4.7
Humanities and arts	100.0	13.1	86.8	0.0	-	0.0	0.1
Business sector	100.0	30.3	4.5	0.9	0.0	0.0	64.2
Natural sciences	100.0	25.5	4.3	1.9	-	0.0	68.3
Engineering and technology	100.0	31.3	4.0	0.5	0.0	0.0	64.2
Medical and health sciences	100.0	43.3	0.9	0.1	-	-	55.7
Agricultural and veterinary sciences	100.0	29.7	42.5	-	-	-	27.8
Social sciences	100.0	62.9	15.8	1.1	0.2	-	20.0
Humanities and arts	100.0	100.0	-	-	-	-	-
Government sector	100.0	27.3	67.2	0.9	0.0	0.0	4.6
Natural sciences	100.0	13.6	81.1	0.8	0.0	0.0	4.4
Engineering and technology	100.0	17.4	71.8	0.6	-	-	10.2
Medical and health sciences	100.0	0.3	87.8	1.8	-	-	10.1
Agricultural and veterinary sciences	100.0	70.4	27.6	1.6	-	-	0.4
Social sciences	100.0	18.5	74.9	0.5	0.2	0.0	5.9
Humanities and arts	100.0	11.1	88.5	-	-	0.0	0.3
Tertiary education	100.0	26.0	68.2	0.9	0.5	0.5	3.9
Natural sciences	100.0	22.5	69.1	0.8	0.0	2.2	5.3
Engineering and technology	100.0	24.2	70.2	0.4	-	0.1	5.1
Medical and health sciences	100.0	9.5	88.5	-	-	-	2.0
Agricultural and veterinary sciences	100.0	9.9	79.0	5.9	-	-	5.2
Social sciences	100.0	42.8	50.7	0.9	1.9	0.1	3.6
Humanities and arts	100.0	13.8	86.1	0.0	-	-	0.0
Non-profit sector	100.0	16.5	44.5	-	-	-	39.0
Natural sciences	100.0	27.0	73.0	-	-	-	-
Social sciences	100.0	-	-	-	-	-	100.0
Beogradski region	100.0	33.6	53.6	1.2	0.0	0.3	11.3
Natural sciences	100.0	24.0	55.9	1.2	0.0	0.7	18.2
Engineering and technology	100.0	45.0	45.6	0.8	0.0	0.0	8.5
Medical and health sciences	100.0	19.7	51.8	0.4	-	-	28.1
Agricultural and veterinary sciences	100.0	46.8	47.6	4.3	-	-	1.3
Social sciences	100.0	45.9	47.0	1.0	0.0	0.0	6.0
Humanities and arts	100.0	13.9	85.9	0.0	-	0.0	0.1
Business sector	100.0	54.0	10.7	1.7	0.0	-	33.6
Natural sciences	100.0	37.2	7.0	2.1	-	-	53.7
Engineering and technology	100.0	69.0	15.0	1.8	0.0	-	14.1
Medical and health sciences	100.0	43.1	0.5	0.1	-	-	56.3
Agricultural and veterinary sciences	100.0	72.2	27.8	-	-	-	-
Social sciences	100.0	63.7	15.3	1.1	-	-	19.9
Humanities and arts	100.0	100.0	-	-	-	-	-
Government sector	100.0	21.5	74.6	0.9	0.0	0.0	2.9
Natural sciences	100.0	14.2	80.7	0.8	-	0.0	4.3
Engineering and technology	100.0	16.2	83.8	-	-	-	-
Medical and health sciences	100.0	0.3	87.8	1.8	-	-	10.1
Agricultural and veterinary sciences	100.0	63.4	32.7	3.1	-	-	0.8
Social sciences	100.0	18.5	74.9	0.5	0.2	0.0	5.9
Humanities and arts	100.0	11.1	88.5	-	-	0.0	0.3
Tertiary education	100.0	31.5	62.8	1.1	0.0	0.7	3.9
Natural sciences	100.0	28.5	64.2	1.2	0.0	3.2	2.9
Engineering and technology	100.0	33.2	59.7	-	-	0.1	7.0
Medical and health sciences	100.0	-	99.6	-	-	-	0.4
Agricultural and veterinary sciences	100.0	11.8	78.8	7.0	-	-	2.4
Social sciences	100.0	53.9	40.2	1.1	0.0	0.0	4.7
Humanities and arts	100.0	15.6	84.3	0.0	-	-	0.0
Non-profit sector	100.0	-	-	-	-	-	100.0
Social sciences	100.0	-	-	-	-	-	100.0
Region Vojvodine	100.0	17.6	16.4	0.5	0.3	0.0	65.1
Natural sciences	100.0	9.2	11.1	1.6	0.0	0.0	78.1
Engineering and technology	100.0	12.0	8.0	0.2	-	0.0	79.7
Medical and health sciences	100.0	48.7	51.3	-	-	-	-
Agricultural and veterinary sciences	100.0	69.8	24.3	-	-	-	5.9
Social sciences	100.0	23.0	71.9	0.5	4.3	0.1	0.2
Humanities and arts	100.0	13.3	86.7	-	-	-	-

9.2. Sources of funds spent on R&D activities, 2023 (continued)

%

	Total	Own	Government and local authorities	Private and public enterprises	Tertiary education	Non-profit institutions	Foreign ordering parties
Business sector	100.0	11.5	0.7	0.4	0.0	0.0	87.4
Natural sciences	100.0	9.2	0.5	1.8	-	0.0	88.5
Engineering and technology	100.0	11.9	0.2	0.0	-	0.0	87.8
Medical and health sciences	100.0	100.0	-	-	-	-	-
Agricultural and veterinary sciences	100.0	29.0	30.9	-	-	-	40.1
Social sciences	100.0	23.8	44.1	-	8.1	-	24.0
Government sector	100.0	57.7	27.6	0.9	0.1	-	13.7
Natural sciences	100.0	-	81.4	1.9	1.6	-	15.1
Engineering and technology	100.0	23.5	36.8	2.3	-	-	37.4
Agricultural and veterinary sciences	100.0	81.7	18.2	-	-	-	0.0
Tertiary education	100.0	15.8	77.5	0.2	2.1	0.0	4.4
Natural sciences	100.0	11.5	66.4	-	-	-	22.1
Engineering and technology	100.0	-	100.0	-	-	-	-
Medical and health sciences	100.0	47.4	52.6	-	-	-	-
Agricultural and veterinary sciences	100.0	-	77.7	-	-	-	22.3
Social sciences	100.0	23.0	72.0	0.5	4.3	0.1	0.1
Humanities and arts	100.0	13.3	86.7	-	-	-	-
Non-profit sector	100.0	27.0	73.0	-	-	-	-
Natural sciences	100.0	27.0	73.0	-	-	-	-
Region Šumadije i Zapadne Srbije	100.0	30.2	65.5	0.2	-	0.2	3.9
Natural sciences	100.0	17.1	82.9	0.0	-	-	-
Engineering and technology	100.0	62.2	27.0	0.0	-	0.2	10.6
Medical and health sciences	100.0	10.7	76.7	-	-	-	12.6
Agricultural and veterinary sciences	100.0	1.1	98.8	0.1	-	-	-
Social sciences	100.0	62.5	30.4	2.1	-	1.1	3.9
Humanities and arts	100.0	9.4	90.6	-	-	-	-
Business sector	100.0	77.7	12.4	0.0	-	0.2	9.6
Natural sciences	100.0	100.0	-	-	-	-	-
Engineering and technology	100.0	82.8	4.6	0.0	-	0.3	12.3
Agricultural and veterinary sciences	100.0	2.9	97.1	-	-	-	-
Government sector	100.0	0.1	99.8	0.1	-	-	-
Natural sciences	100.0	0.1	99.7	0.2	-	-	-
Agricultural and veterinary sciences	100.0	-	100.0	-	-	-	-
Tertiary education	100.0	15.8	81.6	0.2	-	0.1	2.3
Natural sciences	100.0	10.1	89.9	-	-	-	-
Engineering and technology	100.0	7.4	86.5	-	-	-	6.1
Medical and health sciences	100.0	10.7	76.7	-	-	-	12.6
Agricultural and veterinary sciences	100.0	-	99.3	0.7	-	-	-
Social sciences	100.0	62.5	30.4	2.1	-	1.1	3.9
Humanities and arts	100.0	9.4	90.6	-	-	-	-
Region Južne i Istočne Srbije	100.0	47.2	48.7	1.2	0.9	0.0	2.0
Natural sciences	100.0	47.1	51.6	-	-	-	1.3
Engineering and technology	100.0	51.5	46.1	1.8	-	0.0	0.5
Medical and health sciences	100.0	0.9	99.1	-	-	-	-
Agricultural and veterinary sciences	100.0	66.9	33.1	-	-	-	-
Social sciences	100.0	37.3	36.9	0.5	9.8	-	15.5
Humanities and arts	100.0	-	100.0	-	-	-	-
Business sector	100.0	92.6	6.3	0.9	-	0.1	0.1
Natural sciences	100.0	77.9	21.8	-	-	-	0.3
Engineering and technology	100.0	98.2	0.5	1.2	-	0.1	-
Medical and health sciences	100.0	20.5	79.5	-	-	-	-
Government sector	100.0	29.9	70.1	-	-	-	-
Engineering and technology	100.0	-	100.0	-	-	-	-
Agricultural and veterinary sciences	100.0	66.9	33.1	-	-	-	-
Tertiary education	100.0	14.3	78.1	1.7	1.9	-	4.0
Natural sciences	100.0	-	97.2	-	-	-	2.8
Engineering and technology	100.0	13.1	82.8	2.9	-	-	1.2
Medical and health sciences	100.0	-	100.0	-	-	-	-
Social sciences	100.0	37.3	36.9	0.5	9.8	-	15.5
Humanities and arts	100.0	-	100.0	-	-	-	-
Region Kosovo i Metohija	...	...	...	...	...	...	...

10.1. Gross domestic expenditure on R&D by groupings of activities, 2023

Thous. RSD

	Gross domestic expenditure	Gross investments	Current costs		
			Total	Gross salaries	Material costs
REPUBLIC OF SERBIA	77433812	12476737	64957075	47609047	17348028
Crop and animal production, hunting and related service activities	48764	11408	37356	6693	30663
Extraction of crude petroleum and natural gas	968483	-	968483	968483	-
Other mining and quarrying	483025	-	483025	468331	14694
Manufacture of food products	397762	330628	67134	59739	7395
Manufacture of chemicals and chemical products	35839	486	35353	12701	22652
Manufacture of basic pharmaceutical products and pharmaceutical preparations	10601	-	10601	8957	1644
Manufacture of rubber and plastic products	621879	266356	355523	260641	94882
Manufacture of other non-metallic mineral products	69042	3520	65522	61194	4328
Manufacture of fabricated metal products, except machinery and equipment	271156	117588	153568	149309	4259
Manufacture of computer, electronic and optical products	381482	80845	300637	212992	87645
Manufacture of electrical equipment	118230	36213	82017	49539	32478
Manufacture of machinery and equipment, n.e.c.	16831	1180	15651	7272	8379
Manufacture of furniture	2688	-	2688	-	2688
Other manufacturing	39661	584	39077	28926	10151
Repair and installation of machinery and equipment	45111	4300	40811	33181	7630
Water collection, treatment and supply	8469	2652	5817	5817	-
Water collection, treatment and disposal activities; material recovery	3405	-	3405	1850	1555
Specialised construction activities	153588	2938	150650	42751	107899
Wholesale trade, except of motor vehicles and motorcycles	754644	38408	716236	110481	605755
Retail trade, except of motor vehicles and motorcycles	27754	-	27754	5026	22728
Water transport	781	-	781	-	781
Publishing activities	56174	6688	49486	40128	9358
Telecommunications	56219	-	56219	20919	35300
Computer programming, consultancy and related activities	3131603	49890	3081713	2735538	346175
Information service activities	277850	71576	206274	184538	21736
Activities auxiliary to financial services and insurance activities	3401	-	3401	1972	1429
Real estate activities	16421	-	16421	14225	2196
Activities of head offices; management consultancy activities	153584	150	153434	124650	28784
Architectural and engineering activities; technical testing and analysis	13359067	9130746	4228321	4211780	16541
Scientific and development	32517860	1356436	31161424	22917892	8243532
Employment activities	25139	19230	5909	2293	3616
Education	23333610	944915	22388695	14822228	7566467
Human health activities	41848	-	41848	38659	3189
Activities of membership organisations	1841	-	1841	342	1499
Business sector	33671839	10730264	22941575	17837754	5103821
Crop and animal production, hunting and related service activities	48764	11408	37356	6693	30663
Extraction of crude petroleum and natural gas	968483	-	968483	968483	-
Other mining and quarrying	483025	-	483025	468331	14694
Manufacture of food products	397762	330628	67134	59739	7395
Manufacture of chemicals and chemical products	35839	486	35353	12701	22652
Manufacture of basic pharmaceutical products and pharmaceutical preparations	10601	-	10601	8957	1644
Manufacture of rubber and plastic products	621879	266356	355523	260641	94882
Manufacture of other non-metallic mineral products	69042	3520	65522	61194	4328
Manufacture of fabricated metal products, except machinery and equipment	271156	117588	153568	149309	4259
Manufacture of computer, electronic and optical products	381482	80845	300637	212992	87645
Manufacture of electrical equipment	118230	36213	82017	49539	32478
Manufacture of machinery and equipment, n.e.c.	16831	1180	15651	7272	8379
Manufacture of furniture	2688	-	2688	-	2688
Other manufacturing	39661	584	39077	28926	10151
Repair and installation of machinery and equipment	45111	4300	40811	33181	7630
Water collection, treatment and supply	8469	2652	5817	5817	-
Water collection, treatment and disposal activities; material recovery	3405	-	3405	1850	1555
Specialised construction activities	153588	2938	150650	42751	107899
Wholesale trade, except of motor vehicles and motorcycles	754644	38408	716236	110481	605755
Retail trade, except of motor vehicles and motorcycles	27754	-	27754	5026	22728
Water transport	781	-	781	-	781
Publishing activities	56174	6688	49486	40128	9358
Telecommunications	56219	-	56219	20919	35300

10.1. Gross domestic expenditure on R&D by groupings of activities, 2023 (continued)

Thous. RSD

	Gross domestic expenditure	Gross investments	Current costs		
			Total	Gross salaries	Material costs
Computer programming, consultancy and related activities	3131603	49890	3081713	2735538	346175
Information service activities	277850	71576	206274	184538	21736
Activities auxiliary to financial services and insurance activities	3401	-	3401	1972	1429
Real estate activities	16421	-	16421	14225	2196
Activities of head offices; management consultancy activities	153584	150	153434	124650	28784
Architectural and engineering activities; technical testing and analysis	13359067	9130746	4228321	4211780	16541
Scientific and development	12133186	554878	11578308	8007828	3570480
Employment activities	25139	19230	5909	2293	3616
Government sector	20426522	801558	19624964	14948723	4676241
Scientific and development	20384674	801558	19583116	14910064	4673052
Human health activities	41848	-	41848	38659	3189
Tertiary education	23333610	944915	22388695	14822228	7566467
Education	23333610	944915	22388695	14822228	7566467
Non-profit sector	1841	-	1841	342	1499
Activities of membership organisations	1841	-	1841	342	1499
Beogradski region	43074279	1760961	41313318	29423999	11889319
Other mining and quarrying	483025	-	483025	468331	14694
Manufacture of food products	20195	411	19784	12389	7395
Manufacture of chemicals and chemical products	27172	-	27172	5470	21702
Manufacture of rubber and plastic products	1956	-	1956	833	1123
Manufacture of computer, electronic and optical products	216805	48585	168220	127172	41048
Manufacture of electrical equipment	61515	25670	35845	26108	9737
Manufacture of machinery and equipment, n.e.c.	3402	348	3054	3054	-
Manufacture of furniture	2688	-	2688	-	2688
Repair and installation of machinery and equipment	44132	4300	39832	32202	7630
Specialised construction activities	153588	2938	150650	42751	107899
Wholesale trade, except of motor vehicles and motorcycles	750111	38408	711703	106857	604846
Retail trade, except of motor vehicles and motorcycles	27754	-	27754	5026	22728
Publishing activities	13530	2477	11053	2892	8161
Telecommunications	56219	-	56219	20919	35300
Computer programming, consultancy and related activities	2129013	17245	2111768	1843285	268483
Information service activities	98687	10188	88499	76917	11582
Real estate activities	16421	-	16421	14225	2196
Activities of head offices; management consultancy activities	75134	150	74984	46200	28784
Architectural and engineering activities; technical testing and analysis	24322	-	24322	24322	-
Scientific and development	23521763	1014542	22507221	16849719	5657502
Employment activities	25139	19230	5909	2293	3616
Education	15279142	576469	14702673	9674033	5028640
Human health activities	41848	-	41848	38659	3189
Activities of membership organisations	718	-	718	342	376
Business sector	11324300	625916	10698384	7901069	2797315
Other mining and quarrying	483025	-	483025	468331	14694
Manufacture of food products	20195	411	19784	12389	7395
Manufacture of chemicals and chemical products	27172	-	27172	5470	21702
Manufacture of rubber and plastic products	1956	-	1956	833	1123
Manufacture of computer, electronic and optical products	216805	48585	168220	127172	41048
Manufacture of electrical equipment	61515	25670	35845	26108	9737
Manufacture of machinery and equipment, n.e.c.	3402	348	3054	3054	-
Manufacture of furniture	2688	-	2688	-	2688
Repair and installation of machinery and equipment	44132	4300	39832	32202	7630
Specialised construction activities	153588	2938	150650	42751	107899
Wholesale trade, except of motor vehicles and motorcycles	750111	38408	711703	106857	604846
Retail trade, except of motor vehicles and motorcycles	27754	-	27754	5026	22728
Publishing activities	13530	2477	11053	2892	8161
Telecommunications	56219	-	56219	20919	35300
Computer programming, consultancy and related activities	2129013	17245	2111768	1843285	268483
Information service activities	98687	10188	88499	76917	11582
Real estate activities	16421	-	16421	14225	2196



10.1. Gross domestic expenditure on R&D by groupings of activities, 2023 (continued)

Thous. RSD

	Gross domestic expenditure	Gross investments	Current costs		
			Total	Gross salaries	Material costs
Activities of head offices; management consultancy activities	75134	150	74984	46200	28784
Architectural and engineering activities; technical testing and analysis	24322	-	24322	24322	-
Scientific and development	7093492	455966	6637526	5039823	1597703
Employment activities	25139	19230	5909	2293	3616
Government sector	16470119	558576	15911543	11848555	4062988
Scientific and development	16428271	558576	15869695	11809896	4059799
Human health activities	41848	-	41848	38659	3189
Tertiary education	15279142	576469	14702673	9674033	5028640
Education	15279142	576469	14702673	9674033	5028640
Non-profit sector	718	-	718	342	376
Activities of membership organisations	718	-	718	342	376
Region Vojvodine	28293212	9861219	18431993	14461379	3970614
Crop and animal production, hunting and related service activities	48764	11408	37356	6693	30663
Extraction of crude petroleum and natural gas	968483	-	968483	968483	-
Manufacture of food products	537	271	266	266	-
Manufacture of rubber and plastic products	8388	-	8388	6324	2064
Manufacture of other non-metallic mineral products	69042	3520	65522	61194	4328
Manufacture of fabricated metal products, except machinery and equipment	116088	66093	49995	49995	-
Manufacture of computer, electronic and optical products	33252	1258	31994	19403	12591
Manufacture of electrical equipment	26247	9835	16412	-	16412
Manufacture of machinery and equipment, n.e.c.	7965	-	7965	3467	4498
Other manufacturing	31686	584	31102	21453	9649
Repair and installation of machinery and equipment	979	-	979	979	-
Water collection, treatment and disposal activities; material recovery	3405	-	3405	1850	1555
Wholesale trade, except of motor vehicles and motorcycles	4533	-	4533	3624	909
Water transport	781	-	781	-	781
Publishing activities	1000	30	970	580	390
Computer programming, consultancy and related activities	694456	17322	677134	622229	54905
Information service activities	179163	61388	117775	107621	10154
Activities auxiliary to financial services and insurance activities	3401	-	3401	1972	1429
Activities of head offices; management consultancy activities	78450	-	78450	78450	-
Architectural and engineering activities; technical testing and analysis	13334745	9130746	4203999	4187458	16541
Scientific and development	8036903	282467	7754436	5428224	2326212
Education	4643821	276297	4367524	2891114	1476410
Activities of membership organisations	1123	-	1123	-	1123
Business sector	20332595	9390462	10942133	8888964	2053169
Crop and animal production, hunting and related service activities	48764	11408	37356	6693	30663
Extraction of crude petroleum and natural gas	968483	-	968483	968483	-
Manufacture of food products	537	271	266	266	-
Manufacture of rubber and plastic products	8388	-	8388	6324	2064
Manufacture of other non-metallic mineral products	69042	3520	65522	61194	4328
Manufacture of fabricated metal products, except machinery and equipment	116088	66093	49995	49995	-
Manufacture of computer, electronic and optical products	33252	1258	31994	19403	12591
Manufacture of electrical equipment	26247	9835	16412	-	16412
Manufacture of machinery and equipment, n.e.c.	7965	-	7965	3467	4498
Other manufacturing	31686	584	31102	21453	9649
Repair and installation of machinery and equipment	979	-	979	979	-
Water collection, treatment and disposal activities; material recovery	3405	-	3405	1850	1555
Wholesale trade, except of motor vehicles and motorcycles	4533	-	4533	3624	909
Water transport	781	-	781	-	781
Publishing activities	1000	30	970	580	390
Computer programming, consultancy and related activities	694456	17322	677134	622229	54905
Information service activities	179163	61388	117775	107621	10154
Activities auxiliary to financial services and insurance activities	3401	-	3401	1972	1429
Activities of head offices; management consultancy activities	78450	-	78450	78450	-
Architectural and engineering activities; technical testing and analysis	13334745	9130746	4203999	4187458	16541
Scientific and development	4721230	88007	4633223	2746923	1886300

10.1. Gross domestic expenditure on R&D by groupings of activities, 2023 (continued)

Thous. RSD

	Gross domestic expenditure	Gross investments	Current costs		
			Total	Gross salaries	Material costs
Government sector	3315673	194460	3121213	2681301	439912
Scientific and development	3315673	194460	3121213	2681301	439912
Tertiary education	4643821	276297	4367524	2891114	1476410
Education	4643821	276297	4367524	2891114	1476410
Non-profit sector	1123	-	1123	-	1123
Activities of membership organisations	1123	-	1123	-	1123
Region Šumadije i Zapadne Srbije	2794352	303675	2490677	1918510	572167
Manufacture of chemicals and chemical products	8667	486	8181	7231	950
Manufacture of rubber and plastic products	213270	149657	63613	52014	11599
Manufacture of fabricated metal products, except machinery and equipment	155068	51495	103573	99314	4259
Manufacture of computer, electronic and optical products	29485	4082	25403	10155	15248
Manufacture of electrical equipment	30468	708	29760	23431	6329
Manufacture of machinery and equipment, n.e.c.	5464	832	4632	751	3881
Other manufacturing	7975	-	7975	7473	502
Computer programming, consultancy and related activities	89357	2991	86366	67837	18529
Scientific and development	435364	53177	382187	308854	73333
Education	1819234	40247	1778987	1341450	437537
Business sector	717903	217686	500217	397725	102492
Manufacture of chemicals and chemical products	8667	486	8181	7231	950
Manufacture of rubber and plastic products	213270	149657	63613	52014	11599
Manufacture of fabricated metal products, except machinery and equipment	155068	51495	103573	99314	4259
Manufacture of computer, electronic and optical products	29485	4082	25403	10155	15248
Manufacture of electrical equipment	30468	708	29760	23431	6329
Manufacture of machinery and equipment, n.e.c.	5464	832	4632	751	3881
Other manufacturing	7975	-	7975	7473	502
Computer programming, consultancy and related activities	89357	2991	86366	67837	18529
Scientific and development	178149	7435	170714	129519	41195
Government sector	257215	45742	211473	179335	32138
Scientific and development	257215	45742	211473	179335	32138
Tertiary education	1819234	40247	1778987	1341450	437537
Education	1819234	40247	1778987	1341450	437537
Region Južne i Istočne Srbije	3271969	550882	2721087	1805159	915928
Manufacture of food products	377030	329946	47084	47084	-
Manufacture of basic pharmaceutical products and pharmaceutical preparations	10601	-	10601	8957	1644
Manufacture of rubber and plastic products	398265	116699	281566	201470	80096
Manufacture of computer, electronic and optical products	101940	26920	75020	56262	18758
Water collection, treatment and supply	8469	2652	5817	5817	-
Publishing activities	41644	4181	37463	36656	807
Computer programming, consultancy and related activities	218777	12332	206445	202187	4258
Scientific and development	523830	6250	517580	331095	186485
Education	1591413	51902	1539511	915631	623880
Business sector	1297041	496200	800841	649996	150845
Manufacture of food products	377030	329946	47084	47084	-
Manufacture of basic pharmaceutical products and pharmaceutical preparations	10601	-	10601	8957	1644
Manufacture of rubber and plastic products	398265	116699	281566	201470	80096
Manufacture of computer, electronic and optical products	101940	26920	75020	56262	18758
Water collection, treatment and supply	8469	2652	5817	5817	-
Publishing activities	41644	4181	37463	36656	807
Computer programming, consultancy and related activities	218777	12332	206445	202187	4258
Scientific and development	140315	3470	136845	91563	45282
Government sector	383515	2780	380735	239532	141203
Scientific and development	383515	2780	380735	239532	141203
Tertiary education	1591413	51902	1539511	915631	623880
Education	1591413	51902	1539511	915631	623880
Region Kosovo i Metohija	...	...	...	...	...



**11.1. Expenditures for the purchase of R&D services from third persons,
2023**

Thous. RSD

	Total expenditures for R&D services purchase
REPUBLIC OF SERBIA	2014822
Subjects in the country	1659328
Business subjects	964480
Government sector (public R&D institutions)	229812
Private R&D institutes/laboratories	12919
Universities and other tertiary education institutions	449248
Private non-profit organisations	2869
Subjects abroad	355494
Business subjects	277315
Government sector (public R&D institutions)	22695
Private R&D institutes/laboratories	28335
Universities and other tertiary education institutions	25597
Private non-profit organisations	453
International organisations	1099
Business sector	1238758
Subjects in the country	954534
Business subjects	693607
Government sector (public R&D institutions)	211957
Private R&D institutes/laboratories	5349
Universities and other tertiary education institutions	42721
Private non-profit organisations	900
Subjects abroad	284224
Business subjects	240233
Government sector (public R&D institutions)	126
Private R&D institutes/laboratories	25792
Universities and other tertiary education institutions	17923
International organisations	150
Government sector	462174
Subjects in the country	432675
Business subjects	22184
Government sector (public R&D institutions)	14782
Private R&D institutes/laboratories	7512
Universities and other tertiary education institutions	387081
Private non-profit organisations	1116
Subjects abroad	29499
Business subjects	11117
Government sector (public R&D institutions)	15105
Private R&D institutes/laboratories	2328
International organisations	949
Tertiary education	313890
Subjects in the country	272119
Business subjects	248689
Government sector (public R&D institutions)	3073
Private R&D institutes/laboratories	58
Universities and other tertiary education institutions	19446
Private non-profit organisations	853
Subjects abroad	41771
Business subjects	25965
Government sector (public R&D institutions)	7464
Private R&D institutes/laboratories	215
Universities and other tertiary education institutions	7674
Private non-profit organisations	453
Beogradski region	1473407
Subjects in the country	1303928
Business subjects	779777
Government sector (public R&D institutions)	98953
Private R&D institutes/laboratories	1853
Universities and other tertiary education institutions	422492
Private non-profit organisations	853
Subjects abroad	169479
Business subjects	137351
Government sector (public R&D institutions)	22633
Private R&D institutes/laboratories	341
Universities and other tertiary education institutions	7752
Private non-profit organisations	453
International organisations	949

**11.1. Expenditures for the purchase of R&D services from third persons,
2023 (continued)**

Thous. RSD

	Total expenditures for R&D services purchase
Business sector	755925
Subjects in the country	644088
Business subjects	524914
Government sector (public R&D institutions)	94847
Private R&D institutes/laboratories	1829
Universities and other tertiary education institutions	22498
Subjects abroad	111837
Business subjects	111507
Government sector (public R&D institutions)	126
Private R&D institutes/laboratories	126
Universities and other tertiary education institutions	78
Government sector	420147
Subjects in the country	393886
Business subjects	11951
Government sector (public R&D institutions)	1139
Universities and other tertiary education institutions	380796
Subjects abroad	26261
Business subjects	10207
Government sector (public R&D institutions)	15105
International organisations	949
Tertiary education	297335
Subjects in the country	265954
Business subjects	242912
Government sector (public R&D institutions)	2967
Private R&D institutes/laboratories	24
Universities and other tertiary education institutions	19198
Private non-profit organisations	853
Subjects abroad	31381
Business subjects	15637
Government sector (public R&D institutions)	7402
Private R&D institutes/laboratories	215
Universities and other tertiary education institutions	7674
Private non-profit organisations	453
Region Vojvodine	156407
Subjects in the country	128270
Business subjects	73226
Government sector (public R&D institutions)	23269
Private R&D institutes/laboratories	11032
Universities and other tertiary education institutions	19627
Private non-profit organisations	1116
Subjects abroad	28137
Business subjects	25809
Private R&D institutes/laboratories	2328
Business sector	114132
Subjects in the country	89233
Business subjects	62993
Government sector (public R&D institutions)	9626
Private R&D institutes/laboratories	3520
Universities and other tertiary education institutions	13094
Subjects abroad	24899
Business subjects	24899
Government sector	42027
Subjects in the country	38789
Business subjects	10233
Government sector (public R&D institutions)	13643
Private R&D institutes/laboratories	7512
Universities and other tertiary education institutions	6285
Private non-profit organisations	1116
Subjects abroad	3238
Business subjects	910
Private R&D institutes/laboratories	2328
Tertiary education	248
Subjects in the country	248
Universities and other tertiary education institutions	248

**11.1. Expenditures for the purchase of R&D services from third persons,
2023 (continued)**

Thous. RSD

	Total expenditures for R&D services purchase
Region Šumadije i Zapadne Srbije	34702
Subjects in the country	20431
Business subjects	17754
Government sector (public R&D institutions)	1728
Private R&D institutes/laboratories	34
Universities and other tertiary education institutions	15
Private non-profit organisations	900
Subjects abroad	14271
Business subjects	13993
Government sector (public R&D institutions)	62
Private R&D institutes/laboratories	66
International organisations	150
Business sector	23885
Subjects in the country	20004
Business subjects	17467
Government sector (public R&D institutions)	1622
Universities and other tertiary education institutions	15
Private non-profit organisations	900
Subjects abroad	3881
Business subjects	3665
Private R&D institutes/laboratories	66
International organisations	150
Tertiary education	10817
Subjects in the country	427
Business subjects	287
Government sector (public R&D institutions)	106
Private R&D institutes/laboratories	34
Subjects abroad	10390
Business subjects	10328
Government sector (public R&D institutions)	62
Region Južne i Istočne Srbije	350306
Subjects in the country	206699
Business subjects	93723
Government sector (public R&D institutions)	105862
Universities and other tertiary education institutions	7114
Subjects abroad	143607
Business subjects	100162
Private R&D institutes/laboratories	25600
Universities and other tertiary education institutions	17845
Business sector	344816
Subjects in the country	201209
Business subjects	88233
Government sector (public R&D institutions)	105862
Universities and other tertiary education institutions	7114
Subjects abroad	143607
Business subjects	100162
Private R&D institutes/laboratories	25600
Universities and other tertiary education institutions	17845
Tertiary education	5490
Subjects in the country	5490
Business subjects	5490
Region Kosovo i Metohija	...



Annex

Survey code: 021010

ANNUAL REPORT FOR DEVELOPMENT AND RESEARCH FOR BUSINESS SUBJECTS AND CENTRES OF EXCELLENCE, FACULTIES AND NON-PROFIT ORGANISATIONS IN 2023

The obligation to provide data is stipulated in Article 26, and penalty provisions in case of non-response or provision of incomplete and erroneous data in Article 52 of the Law on Official Statistics ("Official Gazette of the RS", number 104/2009).

Data shall be used for statistical purposes only and shall not be published as individual data.

All data shall be considered as confidential.

Dear Madams/Sirs, an electronic questionnaire is also foreseen for this survey and is available at the following web addresses:

<https://pod2.stat.gov.rs/unos> or www.stat.gov.rs (in the section "Surveys").

This report is to be filled in by business subjects (enterprises), centres of excellence, technology transfer centres, innovation centres, business incubators and science parks; all faculties, scientific institutes and R&D institutes; all non-profit organisations/associations which, according to the Law on Science and Research ("Official Gazette of the RS", number 49/2019), carried out R&D activities in 2023.

Before filling in the report, please read carefully the explanations accompanying every table as well as the Manual. **All financial indicators are to be indicated in thousands of dinars.** The report is due to be completed and sent not later than **April 22, 2024** at the following address: Statistical Office of the Republic of Serbia, Department of Education, Science and Culture Statistics, 11050 Belgrade Milana Rakica number 5.

I FULL NAME OF THE REPORTING UNIT

Please write down the title of the organisation as stated in the court register, i.e. registration application.

The research unit of the business subject shall write down the full title of the business subject in which it is incorporated in, as well as its title; it shall enter in the tables data **that refer only to this unit**, but not to the entire subject/institution.

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Registration number

II ADDRESS – MUNICIPALITY

--	--	--	--	--	--

Street and number _____ Telephone number _____

The R&D units shall write down **their address**, not the one of the institution in which it is incorporated in and operate.

III ACTIVITY

Write down the name and code according to the Classification of Activities, 2010

--	--	--	--	--

IV FORM OF OWNERSHIP (circle the corresponding number)

public 1
private 2
mixed 3
other 4

V SCIENTIFIC FIELD

Write down the name and code according to the Classification of scientific fields of research and development (annexed)

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1. FULL-TIME AND PART-TIME EMPLOYEES ENGAGED IN R&D ACTIVITIES, EXPRESSED IN THE NUMBER OF PHYSICAL PERSONS AND FULL-TIME EQUIVALENT, 2023

		Total number of employees engaged in R&D				Number of full-time employees engaged in R&D activities		Part-time employees engaged in R&D activities			
		Number of employees		Full-time equivalent				Number of employees		Full-time equivalent	
		All (5+7)	Women (6+8)	All (5+9)	Women (6+10)			All	Women	All	Women
a		1	2	3	4	5	6	7	8	9	10
01	Total (02 до 05)										
02	Researchers										
03	Assistant-researchers										
04	Technicians										
05	Other personnel										

The table should not contain the employees engaged in the service of protection and security, restaurants, maintenance and related activities (property guardians, gatekeepers, cleaning staff, baristas, etc.), even though their salaries are included in other current costs when expressing expenditure for R&D.

Columns 5 and 6 should contain full-time employees, i.e. persons who worked the whole year 90% and more of the working time in R&D.

Columns 7, 8, 9 and 10 should contain part-time employees (more than 10%, and less than 90% of the working time).

Data in columns 3, 4, 9 and 10 should be expressed with **one decimal**.

The manual for filling in data in columns 3, 4, 9 and 10 **about the full-time equivalent** (FTE)

Example: FTE

Part-time employees engaged in R&D (more than 10% and less than 90%)	Number of employees	Full-time equivalent (FTE)
--	---------------------	----------------------------

Total number of employees		8	= 2.7
3 persons working the whole year only part-time	(3 x 0.5)	3	= 1.5
2 persons working the whole year less than 20% of the working time	(2 x 0.2)	2	= 0.4
1 persons employed full-time for one half of the year	(1 x 0.5)	1	= 0.5
2 persons employed for eight months for only 25% of the working time	(2 x 0.67 x 0.25)	2	= 0.3

Comment: Employees engaged full-time in R&D activities correspond to the one unit of full-time equivalent (= 1 FTE).

2. EMPLOYEES ENGAGED IN R&D ACTIVITIES ON SERVICE CONTRACT (SC) OR AUTHOR CONTRACT (AC), EXPRESSED IN PHYSICAL NUMBER OF PERSONS AND FULL-TIME EQUIVALENT, 2023

		Engaged on SC or AC in R&D activities			
		Number of employees		Full-time equivalent	
		All	Women	All	Women
a		1	2	3	4
01	All (02 to 05)				
02	Researchers				
03	Assistant-researchers				
04	Technicians				
05	Other personnel				

FTE is to be expressed the same way as in Table 1.

IMPORTANT: all the persons engaged in R&D activities in their reporting unit are to be included, whether they are employed in another institutions (e.g. faculty, institute and other).

3. EMPLOYEES ENGAGED IN R&D ACTIVITIES, BY EDUCATIONAL ATTAINMENT, EXPRESSED IN NUMBER OF PHYSICAL PERSONS AND FULL-TIME EQUIVALENT, 2023

		Total number of employees		Educational attainment							
				Doctor's degree		Master's degree/specialisation		University education		Secondary and other education	
		All	Women	All	Women	All	Women	All	Women	All	Women
a		1	2	3	4	5	6	7	8	9	10
Employees engaged in R&D activities (number of physical number)											
01	Total (02 to 05)										
02	Researchers									X	X
03	Assistant-researchers										
04	Technicians										
05	Other personnel										
Employees engaged in R&D activities (full-time equivalent)											
06	Total (07 to 10)										
07	Researchers									X	X
08	Assistant-researchers										
09	Technicians										
10	Other personnel										

Data in columns 1 and 2 (rows 01 to 05) in Table 3 should be equal to the data in columns 1 and 2 in Table 1.

Data in columns 1 and 2 (rows 06 to 10) in Table 3 should be equal to the data in columns 3 and 4 in Table 1.

Column 1 is equal to the sum of columns 3, 5, 7 and 9, also, column 2 is equal to the sum of columns 4, 6, 8 and 10.

4. EMPLOYEES ENGAGED IN R&d ACTIVITIES ON SERVICE CONTRACT (SC) OR AUTHOR CONTRACT (AC), BY EDUCATIONAL ATTAINMENT, EXPRESSED IN NUMBER OF PHYSICAL PERSONS AND FULL-TIME EQUIVALENT, 2023

		Total number of employees		Educational attainment							
				Doctorate's degree		Master's degree/specialisation		University education		Secondary and other education	
		All	Women	All	Women	All	Women	All	Women	All	Women
a		1	2	3	4	5	6	7	8	9	10
Employees engaged in R&D activities on service contract or author contract (number of physical persons)											
01	Total (02 to 05)										
02	Researchers									X	X
03	Assistant-researchers										
04	Technicians										
05	Other personnel										
Employees engaged in R&D activities on service contract or author contract (full-time equivalent)											
06	Total (07 to 10)										
07	Researchers									X	X
08	Assistant-researchers										
09	Technicians										
10	Other personnel										

Data in columns 1 and 2 (rows 01 to 05) in Table 4 should be equal to the data in columns 1 and 2 in Table 2.

Data in columns 1 and 2 (rows 06 to 10) in Table 4 should be equal to the data in columns 3 and 4 in Table 2.

Column 1 should be equal to the sum of columns 3, 5, 7 and 9, also, column 2 should be equal to the sum of columns 4, 6, 8 and 10.

5. FULL-TIME AND PART-TIME EMPLOYEES ENGAGED IN R&D ACTIVITIES, BY AGE AND SEX, EXPRESSED IN NUMBER OF PHYSICAL PERSONS, 2023

		Researchers				Assistant-researchers				Technicians			
		Full-time employees		Part-time employees		Full-time employees		Part-time employees		Full-time employees		Part-time employees	
		All	Women	All	Women	All	Women	All	Women	All	Women	All	Women
a		1	2	3	4	5	6	7	8	9	10	11	12
01	Total (02 to 07)												
02	Aged under 25												
03	25–34												
04	35–44												
05	45–54												
06	55–64												
07	65 and more												

In table 5, employees employed full-time and part-time in R&D activities, shown in Table 1, are to be classified by age groups.

Data on researchers, assistant-researchers and technicians in row 01 of this table should correspond to the data in Table 1.

6. FULL-TIME AND PART-TIME RESEARCHERS, BY CITIZENSHIP AND SEX, EXPRESSED IN NUMBER OF PHYSICAL PERSONS

Citizenship (by geographical position of the country)		Total number of researchers in 2023		Researchers who came to Serbia in 2023		Researchers who went abroad in 2023		Planned number of researchers for 2024
		All	Women	All	Women	All	Women	
a		1	2	3	4	5	6	7
01	All (02 to 09)							
02	Serbia							
03	EU member countries							
04	Other European countries							
05	North America							
06	Central and South America							
07	Asia							
08	Africa							
09	Other							

In Table 6, **researchers** employed full-time and part-time are to be classified by citizenship (geographical position of the country).

In columns 3 and 4 all the researchers who came from abroad between 01/01/2023 and 31/12/2023, and worked in R&D more than 3 months are to be indicated.

In columns 5 and 6 all the researchers who left Serbia between 01/01/2023 and 31/12/2023 are to be indicated.

Data in row 01 in columns 1 and 2 of this table should **correspond to the data in Table 1 in columns 1 and 2:**

Researchers – All

Researchers – women

7. EXPENDITURE FOR R&D ACTIVITIES, 2023 (in thousands RSD)

Expenditure for R&D			Spent in 2023	Planned for 2024
a			1	2
01	Total expenditure for R&D (02+08+13)			
02	Current costs	All (03+05+06+07)		
03		Gross salaries and wages for all employees in R&D activities		
04		of which gross salaries and wages of researchers		
05		Social contributions borne by the employer (indirect and direct)		
06		Educational costs		
07		Other labour costs		
08		All (09+10+11+12)		
09		For payments based on service contracts and author contracts		
10		Purchase of services connected with R&D		
11		For material costs for R&D work (raw materials, equipment, energy)		
12		Other operating costs and expenses (administration costs and other)		
13	Investment costs	All (14+15+19+20)		
14		For land and buildings		
15		For machinery and equipment:		
16		Information and communication equipment		
17		Transport equipment		
18		Other machinery and equipment		
19		Investments into computer software		
20		Other intellectual property products (patents, licenses, studies, projects and other)		

Comment: The data in row 01 in Table 7 must be equal to the data in row 01 in Table 8.

8. SOURCES OF FUNDS SPENT ON R&D ACTIVITIES, 2023

Sources of funds			Amount in thousands of RSD
01	Funds spent for R&D by sources – total (02 to 20)		
02	Sources of funding from Serbia	Own funds of the reporting unit	
03		Budgetary funds dedicated for R&D	From the Ministry of Education, Science and Technological Development
04			From other ministries
05			General funds of the university/faculty
06		Funds for R&D from government funds, agencies and foundations	
07		Funds for R&D from local authorities' bodies	
08		Funds for R&D for business subjects	From other enterprises in the same group
09			From other enterprises outside the group
10		Funds from tertiary education institutions	
11		Funds for R&D from non-profit organisations	
12		Other funds for R&D from domestic sources	
13	Funds from abroad	Funds from enterprises in the same group	
14		Funds from other enterprises outside the group	
15		Funds for R&D from foreign governments	
16		Funds for R&D from universities and other tertiary education institutions	
17		Funds for R&D from non-profit organisations	
18		Funds for R&D from the European Commission	
19		Funds for R&D from international organisations	
20		Other foreign funds	

**9. NUMBER AND VALUE OF R&D WORKS (PROJECTS AND STUDIES), BY SCIENTIFIC FIELDS AND TYPES OF RESEARCH
(include also projects financed by own funds), 2023**

Scientific fields		Total		Types of research					
				Basic		Applied		Development	
		Number of works	Value	Number of works	Value	Number of works	Value	Number of works	Value
a		1	2	3	4	5	6	7	8
01	All (02 to 08)								
02	Natural sciences, mathematics								
03	Engineering and technology								
04	Social sciences								
05	Humanities and arts								
06	Medical sciences								
07	Agricultural and veterinary sciences								
08	Multidisciplinary sciences								

The data on spent funds "Value" in column 2 in row 01 should match the data in Table 7 in row 01 "Total expenditure for R&D", i.e. Table 8 in row 01 "Total".

For ongoing projects (not completed) indicate the value of finishing stages of works until the end of 2023.

To determine to which scientific field a research belongs, use the annexed classification.

The data for the value are to be shown in thousands of dinars.

10. FUNDS FOR THE PURCHASE OF R&D SERVICES, 2023 (in thousands of RSD)

a		1
01	Total expenditure for the purchase of R&D services from (02+08):	
02	Subjects in the country (03 to 07)	
03	Business subjects	
04	Government sector (public research institutions)	
05	Private research institutes/laboratories	
06	Universities and other tertiary education institutions	
07	Private non-profit organisations	
08	Subjects abroad (09 to 14)	
09	Business subjects	
10	Government sector (public research institutions)	
11	Private research institutes/laboratories	
12	Universities and other tertiary education institutions	
13	Private non-profit organisations	
14	International organisations	

Expenditure for the purchase of R&D services (extramural expenditure) are expenses for R&D performed on your behalf by third persons. Those expenses are the compensation for specific R&D work carried out separately by an enterprise/institution outside the reporting unit. The financing or expenses for external R&D works (i.e. R&D outside the statistical unit) are not to be included in the amount for intramural research - total, shown in Table 7.

The data are to be indicated in thousands of dinars.

on _____ 2024

Filled in by:

Responsible person:

(name and surname)

(name and surname)

Contact telephone:

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(exchange number is compulsory)

E-mail: _____

GENERAL DEFINITIONS AND EXPLANATIONS FOR FILLING IN THE FOR IR (R&D)

COVERAGE

This form serves to collect data on R&D activities carried out in Serbia in 2023: in business subjects (enterprises), technology transfer centres, innovation centres, business incubators and science parks; at faculties, universities, scientific institutes, as well as R&D institutions; in non-profit organisations/associations.

The status of of centre of excellence can be acquired by an institute, i.e. tertiary education institution or their organisational part, i.e. their organisational parts if they have achieved in a five-year period the highest and internationally recognised results in a specific scientific discipline based on which they have a developed international scientific, technical and technological cooperation.

An institute is a R&D organisation that carries out a R&D activity of general interest, under conditions stipulated by the law. An institute can be founded as an institution or as an enterprise. Depending on the type of research and activity, form of organisation and financing modality of its activity, an institute can perform the R&D activity as: scientific institute and R&D institute. As to the ownership structure, an institute can be: State-owned and private.

A scientific institute is an institution which principal activity is composed of basic researches and applied researches that serve to valorise the results of basic researches.

A R&D institute is an organisation which principal activity is composed of applied and development researches dedicated to meet the needs of direct users of research results.

All tertiary education institutions (faculties, academies of arts, universities), whether State-owned, private or mixed in terms of ownership.

R&D organisations that can be accredited for this activity are: institutes, faculties, integrated universities, centres of excellence and R&D organisations in the field of defense and Army of Serbia.

DEFINITIONS OF THE R&D ACTIVITY

The R&D activity is a systematic creative work performed in view of acquiring new knowledge, in order to raise the general civilisation level of society and to use this knowledge in all areas of social development.

The scientific activity is carried out through basic research, applied and development research and by training the personnel for R&D work.

- **BASIC RESEARCH** is a creative, systematic activity focused on acquiring new knowledge on the origin and causes of phenomena and facts, without any particular application or use in view. The results of a basic research are often formulated as general principles, theories or rules.
- **APPLIED RESEARCH** is undertaken whether to establish a possibility to use the results of a research, having in mind its practical application, or to find new methods or ways that facilitate the achievement of a particular objective section in advance. This survey starts from existing knowledge and examine it thoroughly in view of solving specific issues.
- **DEVELOPMENT RESEARCH** is a creative systematic activity based on the results of the basis and applied research, and practical knowledge directed towards introducing new materials, products, devices, processes and methods.

METHODOLOGICAL BASIS

Methodological basis for this survey are international standards set by OECD and published in the FRASCATI Manual, 2015. All international classifications that are in the Annex for filling in the Annual report about R&D activity are applied. Detailed explanations are available in the Manual for filling in the form.

Additional explanations and instructions can be found in the Statistical Office of the Republic of Serbia, Milana Rakica No 5, Belgrade, Department for the statistics of education, science and culture, telephone number: +381 11 2412922, extension 425.

ANNEX

For filling in the Annual Report on Research and Development – IR

ANNEX number 1

CLASSIFICATION OF SCIENTIFIC FIELDS OF RESEARCH AND DEVELOPMENT (FORD 2015)

1	Natural sciences
101	Mathematics (Pure mathematics, Applied mathematics; Statistics and probability)
102	Computer and information sciences (Computer sciences, information science and bioinformatics)
103	Physical sciences (Atomic, molecular and chemical physics; Nuclear physics; Fluids and plasma physics; Optics, Acoustics; Astronomy)
104	Chemical sciences (Organic chemistry; Inorganic and nuclear chemistry; Physical chemistry, Polymer science, Electrochemistry; Colloid chemistry; Analytical chemistry)
105	Earth and related environmental sciences (Geosciences; Mineralogy; Palaeontology; Geochemistry and geophysics; Physical geography; Geology; Volcanology; Environmental sciences; Meteorology and atmospheric sciences; climatic research; Oceanography, Hydrology)
106	Biological sciences (Biology, Microbiology; Virology; Biochemistry and molecular biology; Biochemical research methods; Biophysics; Genetics, reproductive biology; developmental biology; Botany; Zoology, Ornithology, Entomology; freshwater biology, limnology; Ecology; Biodiversity conservation; Biology: theoretical, mathematical, thermal, cryobiology, biological rhythm, Evolutionary biology; other biological topics)
107	Other natural sciences
2	Engineering and technology
201	Civil engineering (Civil engineering; Architecture engineering; Construction engineering, Municipal and structural engineering; Transport engineering)
202	Electrical engineering, electronic engineering and information engineering (Electrical and electronic engineering; Robotics and automatic control; Automation and control systems; Communication engineering and systems; telecommunications; Computer hardware and architecture)
203	Mechanical engineering (Mechanical engineering; Applied mechanics; Thermodynamics; Nuclear related engineering; Audio engineering, reliability analysis)
204	Chemical engineering (plants, products)
205	Materials engineering (Materials engineering; Ceramics; Coating and films; Composites including laminates, reinforced plastics, cermets, combined natural and synthetic fibre fabrics; filled composites; Paper and wood; textiles; including synthetic dyes, colours, biomaterial fibres)
206	Medical engineering (Medical engineering; Medical laboratory technology including laboratory samples analysis; diagnostic technologies)
207	Environmental engineering (Environmental and geological engineering, geotechnics; Petroleum engineering, Energy and fuels; Remote sensing; Mining and mineral processing; Marine engineering, sea vessels; Ocean engineering)
208	Environmental biotechnology (Environmental biotechnology; Bioremediation, diagnostic biotechnologies in environmental management; environmental biotechnology related ethics)
209	Industrial biotechnology (Industrial biotechnology; Bioprocessing technologies, biocatalysis, fermentation; bioproducts biomaterials, bioplastics, biofuels, bio-derived bulk and fine chemicals, bio-derived novel materials)
210	Nano-technology (Nano-materials; Nano-processes)
211	Other engineering and technology (Food and beverages; Other engineering and technologies)
3	Medical and health sciences
301	Basic medicine (Anatomy and morphology; Human genetics; Immunology; Neurosciences including psychophysiology; Pharmacology and pharmacy; Toxicology; Physiology including cytology; Pathology)
302	Clinical medicine (Andrology; Obstetrics and gynaecology; Paediatrics; Cardiac and Cardiovascular systems; Peripheral vascular disease; Hematology; Respiratory systems; Emergency medicine; Anaesthesiology; Orthopaedics; Surgery; Radiology, nuclear medicine and medical imaging; Transplantation; Dentistry, oral surgery and medicine; Dermatology and venereal diseases; Allergy; Rheumatology; Endocrinology including diabetes; Gastroenterology and hepatology; Urology and nephrology; Oncology; Ophthalmology; Otorhinolaryngology; Psychiatry; Clinical neurology; Geriatrics and gerontology; General and internal medicine; other clinical medicine subjects)
303	Health science (Health policy and services; Nursing; Nutrition, Dietetics; Public and environmental health; Tropical medicine; Parasitology; Infectious diseases; epidemiology; Occupational health; Sport and fitness sciences; Social biomedical sciences; Medical ethics; Substance abuse)
304	Medical biotechnology (Health-related biotechnology; Technologies involving the manipulation of cells, tissues, organs or the whole organism; Technologies involving identifying the functioning of DNA, proteins and enzymes and how they influence the onset of disease and maintenance of well being; Biomaterials as related to medical implants, devices, sensors; Medical biotechnology related ethics)
305	Other medical sciences (Forensic science and other medical sciences)

4	Agricultural and veterinary sciences
401	Agricultural sciences, forestry and fisheries (Agriculture; Forestry; Fishery; Soil science; Horticulture, viticulture; Agronomy, plant breeding and plant protection)
402	Animal and dairy science (Animal and dairy science; Husbandry; Pets)
403	Veterinary science
404	Agricultural biotechnology (Agricultural biotechnology and food biotechnology; GM technology crops and livestock, livestock cloning, marker assisted selection, diagnostics - DNA chips and biosensing devices for the early/accurate detection of diseases; biomass feedstock production technologies, biopharming; agricultural biotechnology related ethics)
405	Other agricultural science
5	Social sciences
501	Psychology (Psychology including human - machine relations; Psychology, special, including therapy for learning, speech, hearing, visual and other physical and mental disabilities)
502	Economics and business (Economics, Econometrics; Industrial relations; Business and Management)
503	Educational science (General education including training, pedagogy, didactics; Special education for gifted persons and those with learning disabilities)
504	Sociology (Sociology; Demography; Anthropology, ethnology; Social topics - Gender studies, Social issues, Family studies, Social work)
505	Law (Law, criminology, penology)
506	Political science (Political science; public administration; organisation theory)
507	Social and economic geography (Environmental sciences - social aspects; Cultural and economic geography; Urban studies - Planning and development; Transport planning and social aspects of transport)
508	Media and communications (Journalism; Information science - social aspects; Library science; Media and socio-cultural communication)
509	Other social sciences (Social sciences interdisciplinary; Other social sciences)
6	Humanities and arts
601	History and archeology (History - history of science and technology to be 603, history of specific sciences to be under the respective headings; Archaeology)
602	Language and literature (General language studies; Specific languages; General literature studies; Literary theory; Linguistics)
603	Philosophy, ethics and religion (Philosophy, History and philosophy of science and technology; Ethics, except ethics related to specific subfields; Theology; Religious studies)
604	Arts: arts, history of arts, performing arts, music (Arts, Art history; Architectural design; Performing arts studies: Musicology, Theater science, Dramaturgy; Folklore studies; Studies on Film, Radio and Television)
605	Other humanities

Source: FORD – Fields of Science and Technology, OECD – 2015

ANNEX number 2

CLASSIFICATION OF ACTIVITIES – 2010 REVIEW OF THE SECTIONS AND DIVISIONS OF THE CLASSIFICATION OF ACTIVITIES

CODE	DESCRIPTION OF SECTIONS/DIVISIONS
A	AGRICULTURE, FORESTRY AND FISHING
01	Crop and animal production, hunting and related service activities
02	Forestry and tree felling
03	Fishing and aquaculture
B	MINING AND QUARRYING
05	Mining of coal and lignite
06	Extraction of crude petroleum and natural gas
07	Mining of metal ores
08	Other mining and quarrying
09	Mining support service activities
C	MANUFACTURING
10	Manufacture of food products
11	Manufacture of beverages
12	Manufacture of tobacco products
13	Manufacture of textiles
14	Manufacture of wearing apparel
15	Manufacture of leather and related products
16	Manufacture of wood and of products of wood, except furniture; manufacture of articles of straw and plaiting materials
17	Manufacture of paper and paper products
18	Printing and reproduction of recorded media
19	Manufacture of coke and refined petroleum products
20	Manufacture of chemicals and chemical products
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
22	Manufacture of rubber and plastic products
23	Manufacture of other non-metallic mineral products
24	Manufacture of basic metals
25	Manufacture of fabricated metal products, except machinery and equipment
26	Manufacture of computer, electronic and optical products
27	Manufacture of electrical equipment
28	Manufacture of machinery and equipment, n.e.c.
29	Manufacture of motor vehicles, trailers and semi-trailers
30	Manufacture of other transport equipment
31	Manufacture of furniture
32	Other manufacturing
33	Repair and installation of machinery and equipment
D	ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY
35	Electricity, gas, steam and air conditioning supply
E	WATER SUPPLY; SEWERAGE, WASTE MANGEMENT AND REMEDIATION ACTIVITIES
36	Water collection, treatment and supply
37	Sewerage
38	Water collection, treatment and disposal activities; material recovery
39	Remediation activities and other waste management services
F	CONSTRUCTION
41	Construction of buildings
42	Civil engineering
43	Specialised construction activities
G	WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTORCYCLES
45	Wholesale and retail trade and repair of motor vehicles and motorcycles
46	Wholesale trade, except of motor vehicles and motorcycles
47	Retail trade, except of motor vehicles and motorcycles
H	TRANSPORTATION AND STORAGE
49	Land transport and transport via pipelines
50	Water transport

CODE	DESCRIPTION OF SECTIONS/DIVISIONS
51	Air transport
52	Wharehousing and support activities for transportation
53	Postal and courier activities
I	ACCOMMODATION AND FOOD SERVICE ACTIVITIES
55	Accommodation
56	Food and beverage service activities
J	INFORMATION AND COMMUNICATION
58	Publishing activities
59	Motion picture, video and television programme, production, sound recording and music publishing activities
60	Programming and broadcasting
61	Telecommunications
62	Computer programming, consultancy and related activities
63	Information service activities
K	FINANCIAL AND INSURANCE ACTIVITIES
64	Financial service activities, except insurance and pension funding
65	Insurance, reinsurance and pension funding, except compulsory social insurance
66	Activities auxiliary to financial services and insurance activities
L	REAL ESTATE ACTIVITIES
68	Real estate activities
M	PROFESSIONAL, SCIENTIFIC, INNOVATION AND TECHNICAL ACTIVITIES
69	Legal and accounting activities
70	Activities of head offices; management consultancy activities
71	Architectural and engineering activities; technical testing and analysis
72	Scientific and development
73	Advertising and market research
74	Other professional, scientific and technical activities
75	Veterinary activities
N	ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES
77	Rental and leasing activities
78	Employment activities
79	Travel agency, tour operator and other reservation service and related activities
80	Security and investigation activities
81	Services to buildings and landscape activities
82	Office administrative, office support and other business support activities
O	STATE ADMINISTRATION AND DEFENSE; COMPULSORY SOCIAL SECURITY
84	Public administration and defense; compulsory social insurance
P	EDUCATION
85	Education
Q	HUMAN HEALTH AND SOCIAL WORK ACTIVITIES
86	Human health activities
87	Residential care activities
88	Social work activities without accommodation
R	ART; ENTERTAINMENT AND RECREATION
90	Creative, arts and entertainment activities
91	Libraries, archives, museums and other cultural activities
92	Gambling and betting activities
93	Sports activities, amusement and recreation activities
S	OTHER SERVICE ACTIVITIES
94	Activities of membership organisations
95	Repair of computers and personal and household goods
96	Other personal service activities
T	ACTIVITIES OF HOUSEHOLDS AS EMPLOYERS; UNDIFFERENTIATED GOODS AND SERVICE – PRODUCING ACTIVITIES OF HOUSEHOLDS FOR WON USE
97	Activities of households as employers of personnel
98	Undifferentiated goods – and services – producing activities of households for own use
U	ACTIVITIES OF EXTRATERRITORIAL ORGANIZATIONS AND BODIES
99	Activities of extraterritorial organizations and activities



Republic of Serbia
Statistical Office of the Republic of Serbia

MANUAL

for filling in the “Annual Report on R&D” for: business subjects and centres of excellence, faculties, scientific and R&D institutes and non-profit organisations/associations.

(Form: IR).

Belgrade, March 2024

Manual

The objective of this manual is to facilitate the filling in of the questionnaire and to raise the quality of this task. The questionnaires are to be completed for all institutions and/or units where there are at least one researcher, scientist or engineer with full-time equivalent (FTE annually) working on a research and development.

The manual gradually explains every part of the questionnaire and, through examples, shows how to fill in the questionnaire correctly.

A tertiary education institution belonging to university (as a reporting unit) is taken as an example of correct completion of the questionnaire. The data shown in the mentioned examples in the manual are random and are to be used only as a trial.

The questionnaire refers to the measurement of entry in R&D: R&D personnel and R&D expenditures. R&D personnel are to be classified by educational attainment, titles, age and sex, expressed as the real number of persons and full-time equivalent (FTE). R&D expenditures show mainly so-called intramural expenditures, i.e. R&D expenditures within the reporting unit or sector to which the unit belongs to. They include current expenditures and capital investments in order to obtain data on who finances and who performs R&D. Scientific works, projects and studies presented as a R&D result.

The first page of the questionnaire /R&D form

The first page of the R&D questionnaire contains data on the title, registration number, address, activity, ownership form and scientific field of the reporting unit. The main difference of the R&D activity and activities other than R&D is the presence or absence of novelty or innovation elements to a greater extent. If an activity introduces considerable improvement in technical characteristics, components, materials and software, user's orientation or other functional characteristics, i.e. uses a new or considerably improved product, process or service as well as new organisational methods in business and labour organisation, it should be obligatorily included in this survey.

The code of the corresponding activity is to be copied down from the annexed Classification of Activities, 2010, which is to be transmitted to the reporting unit together with the R&D questionnaire/form. Also, the annexed Classification of Scientific Fields of Research and Development is to be used to write down the scientific field.

The coverage excludes activities that do not fall into R&D survey:

- routine tests and analyses of all forms, whether serving for the control of materials, components or products or being focused on their quality and quantity (tests and analysis that are part of a R&D process should be however included);
- market research, operating research, work studies, costs analysis, management activities, etc;
- experimental production where product improvement is not the primary goal;
- design costs aiming at monitoring fashion trends and activities of art modeling;
- legal and administrative operations relative to the application and registration of patents, operations relative to the sale of patents and licenses, experimental activities carried out only for the purpose of patent registration.

Table number 1

The first table to be filled in is on the second page of the questionnaire under number 1, entitled: *“Full-time or part-time employees engaged in R&D activities, expressed in number of physical persons and full-time equivalent in the reference year.”*

		Total number of employees engaged in R&D activities				Number of full-time employees engaged in R&D activities		Part-time employees engaged in R&D activities			
		Number of employees		Full-time equivalent				Number of employees		Full-time equivalent	
		Total (5+7)	Women (6+8)	Total (5+9)	Women (6+10)	Total	Women	Total	Women	Total	Women
a		1	2	3	4	5	6	7	8	9	10
01	Total (02 to 05)	54	29	32,5	18,5	11	8	43	21	21,5	10,5
02	Researchers	52	28	31,5	18,0	11	8	41	20	20,5	10,0
03	Assistant-researchers	2	1	1,0	0,5			2	1	1,0	0,5
04	Technicians										
05	Other staff										

Table 1 should cover the total number of employees engaged in R&D activities, who work full-time or part-time on those activities, by title, sex, number of physical persons and full-time equivalent (FTE).

The number of employees engaged in R&D activities should be indicated in the table, as the sum of full-time and part-times employees.

The real amount of time spent on R&D activities to full-time equivalent is to be indicated under part-time employees. The unit of measurement for the given data is the full-time equivalent (FTE). The abbreviation FTE will be used in the manual for full-time equivalent.

Concretely, our example shows that there are 43 employees who do not spend full-time on R&D activities (the data is in column 7 in table 1) but only 21.5 FTE. This means that their real contribution to R&D activities is 21.5 full-time employees engaged in R&D activities.

Full-time equivalent (FTE) is a unit of measurement of employees, which allows to compare the employees even though they work a different number of hours within the working week/year.

A full-time employee is counted as one (1) full-time equivalent or part-time $FTE = 1$. An employee who does not work full-time obtains a proportional value relative to the hours she/he has worked. For example: an employee not working full-time but 20 hours per week has a FTE value of 0.5 because full-time is 40 working hours per week. Mathematically: $20 : 40 = 0,5$.

The data related to full-time equivalent, in columns 3, 4, 9 and 10, are to be indicated in decimal numbers with one decimal.

Also, on the page of the R&D form containing Table 1 there is an additional instruction for entering data in columns 3, 4, 9 and 10 on full-time equivalent.

In the mentioned example for filling the table, there are 54 employees being engaged in R&D activities. Of 54 persons, 29 are women. The full-time equivalent for the total number of employees is 32,5, of which FTE for female employees is 18,5.

Row 02 refers to employees holding the title researchers. In our example, of 52 persons employed as researchers, 28 are women. The full-time equivalent for this category is 31.5 FTE, of which the female population is 18 FTE.

Row 03 refers to employees holding the title assistant-researchers. In our example there are two employees, of which one is a woman. The example shows that both persons are working part-time on R&D activities because the data about them is indicated in columns 7 and 8 where persons who work part-time on R&D activities are indicated. The FTE for both persons is 1, of which 0.5 FTE is for the female person. The two assistant-researchers are working only part-time in the year on R&D activities.

At the end of Table 1, the values in categories “*Researchers*”, “*Assistant-researchers*”, “*Technical staff*” and “*Other staff*” are to be added up after having filled in Table 1. As there is no data in the other categories, except for “*Researchers*” row (02) and “*Assistant-researchers*” row (03), the values of the mentioned items are to be added up to obtain the sum in the first row (01) “*Total*”: 54 employees, of which 29 are women, who have a full-time equivalent FTE of 32.5, and of which the FTE for women is 18.5.

Also, the sum of columns 5 and 7 should correspond to the data from column 1, and the sum of columns 6 and 8 to the data from column 2.

To better understand this table, explanations from the Frascati Manual are indicated, which is the international standard produced by OECD (Organization for Economic Cooperation and Development) and which serves as the methodological basis for the survey on R&D.

A researcher is a person with at least tertiary educational attainment, i.e. having at least completed undergraduate academic studies and who is engaged in R&D work, and holding the title pursuant to the law.

Assistant-researchers do not have R&D knowledge, they cooperate directly with researchers by performing professional activities concerning R&D duties, but are not holders of the R&D project (laboratory technicians, librarians, IT specialists, lectors, etc.).

Technicians are persons whose main duties require technical knowledge and experience in one or more areas in engineering, natural, social sciences and humanities. They perform within R&D scientific and technical duties that include the application of concepts and operational methods, and the use of R&D equipment, usually under researcher’s supervision.

Other personnel (auxiliary) includes the employees who carry out all activities **contributing directly to performing R&D**, which are not conducted by researchers or technicians and professional personnel. These activities include secretary and other administrative work, management of materials or equipment required for the implementation of the R&D project, such as planning, information and financial support, legal services, assistance in assembling, maintaining, repairing scientific equipment and instruments. Managers and administrators are also included here and are mainly engaged in financial and personnel issues and general administration if their activities are directly connected with R&D projects (treasurers, recorders, secretaries, jurists, etc.). Also, other personnel dealing with ancillary activities in R&D organisations includes employees in workshops, on agricultural land, couriers, switchboard operators, employees engaged in the maintenance of buildings, equipment and rolling stock, suppliers, etc.

It excludes the employees engaged in protection and security service or canteen employees, cleaning staff and related personnel (building concierge, doormen, cleaning ladies, coffee makers, etc.) even though their salaries and wages are included in other current costs when measuring R&D expenditure.

There are three stages to value R&D personnel:

- Identification of the type of personnel that should be valued,

- Establishing their number,
- Establishing their activity in FTE.

One FTE researcher can be presented as researcher/year. Therefore, the persons who spend 30% of their time on R&D and the rest on other activities (teachers, university administration....) should be counted as 0.3 FTE. Similarly, if a FTE worker is employed in a R&D institution for a six-month period, this will be counted as 0.5 FTE. Considering that the length of a working day varies from one sector to another, as well as from one institution to another, it is impossible to express FTE in researcher/hours.

In practice, all those who participate with more than 90% of their time should be counted as 1 FTE, while those who are engaged less than 10% should be excluded from the valuation.

Table 2

Table 2 entitled “Persons engaged in R&D activities on the basis of a service contract (SC) or author contract (AC), expressed in number of physical persons and full-time equivalent, in the reference year”, should contain the number of employed persons who are involved in R&D activities based on a service contract or author contract by titles/occupations.

		Employees based on SC and AC in R&D			
		Number of employees		Full-time equivalent	
		All	Women	All	Women
<i>a</i>		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
01	All (02 до 05)	1	1	0,3	0,3
02	Researchers	1	1	0,3	0,3
03	Assistant-researchers				
04	Technicians				
05	Other personnel				

Our example shows one employee who was engaged as *researcher* on service contract and was actually involved in R&D activities during 85 working days. It is worth knowing that one calendar year has on average 252 working days, when calculating FTE. The aforesaid is used to determine the full-time equivalent:

$$85 : 252 = 0,34.$$

As FTE is expressed with one decimal, the obtained quotient 0.34 is rounded to 0.3, which is at the same time the FTE - the value of the work of the employee performed in R&D.

It is very important to include all the persons engaged in R&D activities in their reporting units, whether those persons are employed in some other institutions or not (e.g. faculties, institutes, etc.).

Table 3

Table 3 entitled: *"Employees engaged in R&D activities, by educational attainment, expressed in physical number of persons and full-time equivalent, in the reference year"*, should be filled in with the total number of employees and their FTE, by title and educational attainment. Read the comments below Table 3 in the R&D questionnaire, reading:

- The data in columns 1 and 2 (rows 01 to 05) in Table 3 should correspond to the data in columns 1 and 2 in Table 1;
- The data in columns 1 and 2 (rows 06 to 10) in Table 3 should correspond to the data in columns 3 and 4 in Table 1;
- Column 1 equals the sum of columns 3, 5, 7 and 9, and column 2 equals the sum of columns 4, 6, 8 and 10.

		Total		Educational attainment							
				Doctor's degree		Master's degree/ specialisation		University education		Secondary and other education	
		All	Women	All	Women	All	Women	All	Women	All	Women
<i>a</i>		1	2	3	4	5	6	7	8	9	10
Employees engaged in R&D activities (number of physical persons)											
01	Total (02 to 05)	54	29	36	18	4	2	14	9		
02	Researchers	52	28	34	17	4	2	14	9	X	X
03	Assistant-researchers	2	1	2	1						
04	Technicians										
05	Other personnel										
Employees engaged in R&D activities (full-time equivalent)											
06	Total (07 do 10)	32,5	18,5	21,5	11,0	4,0	2,0	7,0	5,5		
07	Researchers	31,5	18,0	20,5	10,5	4,0	2,0	7,0	5,5	X	X
08	Assistant-researchers	1,0	0,5	1,0	0,5						
09	Technicians										
10	Other personnel										

By following the mentioned comments, when filling in the table one should first copy down the total number of employees and "women" from columns 1 and 2 in Table 1 into columns 1 and 2 (rows 01 to 05) of Table 3. After having copied down the total number of employees, 54 in column 1 and of women, 29 in column 2 of Table 3, the number of employees, holding the titles researchers and assistant-researchers, is to be copied from the same columns of Table 1 to Table 3. The given example shows that there are 52 researchers, of which 28 women, and 2 assistant-researchers, of which 1 woman. Afterwards, the number of employees - Total and by categories is to be broken down into selected educational attainment.

To fill in the second part of the table referring to the full-time equivalent, one should first copy from columns 3 and 4 of Table 1 the indicated FTE values into columns 1 and 2 (rows 06 to 10) of Table 3. Once the total FTE values of 32.5 in column 1 and 18.5 in column 2 of Table 3 are copied, the values for the titles researchers and assistant-researchers are to be copied from the same columns of Table 1 into Table 3. The data for researchers are 31.5 and 18 FTE, and 1 and 0.5 FTE for assistant-researchers. Afterwards, these values are to be broken down into selected educational attainment.

Table 4

Table 4, entitled “*Employees engaged in R&D activities, based on service contract (SC) or author contract (AC), by educational attainment, expressed in number of physical persons and full-time equivalent, in the reference year*“, should be filled in with the total number of employees being engaged based on the mentioned contracts, by title and educational attainment, and with their FTE.

	Total		Educational attainment							
			Doctor's degree		Master's degree/specialisation		University education		Secondary and other education	
	All	Women	All	Women	All	Women	All	Women	All	Women
a	1	2	3	4	5	6	7	8	9	10
Employees engaged in R&D activities based on service contract or author contract (number of physical persons)										
01 Total (02 to 05)	1	1	1	1						
02 Researchers	1	1	1	1					X	X
03 Assistant-researchers										
04 Technicians										
05 Other personnel										
Employees engaged in R&D activities based on service contract or author contract (full-time equivalent)										
06 Total (07 to 10)	0,3	0,3	0,3	0,3						
07 Researchers	0,3	0,3	0,3	0,3					X	X
08 Assistant-researchers										
09 Technicians										
10 Other personnel										

The given example shows that there is one employee, a woman, engaged in R&D activities based on a service contract. The person is a researcher and holds a doctor's degree. Table 2 shows that this person has 0.3 FTE relative to full-time so that the value of 0.3 FTE is to be copied into the corresponding places in Table 4.

The value 0.3 can be the result of work, where the researcher works 2.5 hours per day on R&D activities, or 12 hours per week or about 30% of the working time on annual level.

The data in columns 1 and 2 (rows 01 to 05) in Table 4 should equal the data in columns 1 and 2 of Table 2.

The data in columns 1 and 2 (rows 06 to 10) in Table 4 should equal the data in columns 3 and 4 of Table 2.

Column 1 equals the sum of columns 3, 5, 7 and 9, and column 2 equals the sum of columns 4, 6, 8 and 10.

Table 5

Table 5, entitled “*Full-time and part-time employees engaged in R&D activities, by age and sex, expressed in number of physical persons, in the reference year*”, should be filled in with the number of employees engaged in R&D activities classified by title and age group.

		Researchers				Assistant-researcher				Technicians			
		Full-time employees		Part-time employees		Full-time employees		Part-time employees		Full-time employees		Part-time employees	
		All	Women	All	Women	All	Women	All	Women	All	Women	All	Women
<i>a</i>		1	2	3	4	5	6	7	8	9	10	11	12
01	Total (02 to 07)	11	8	41	20			2	1				
02	Less than 25 years old	1	1										
03	25 – 34	8	6	13	5								
04	35 – 44			12	8			1	1				
05	45 – 54	1	1	7	2								
06	55 – 64			9	5			1					
07	65 and over	1											

In Table 5 the columns refer to the categories of employees by title, and within these categories by sub-category: *full-time and part-time employees*. The rows refer to age groups, where one should indicate employees by age group in the given intervals. At the end, each row should be added up in the column for all the indicated titles in order to obtain “*Total (02 to 07)*” under ordinal number 01.

The data in this table should match the data indicated in Table 1:

Full-time employees:

- Researchers: row 02, columns: 05, 06
- Assistant-researchers: row 03, columns: 05, 06
- Technicians: row 04, columns: 05, 06

Part-time employees:

- Researchers: row 02, columns: 07, 08
- Assistant-researchers: row 03, columns: 07, 08
- Technicians: row 04, columns: 07, 08

Table 6

Table 6, entitled: “*Full-time and part-time researchers, by citizenship and sex, expressed in number of physical persons*”, should be filled in with the number of researchers by citizenship (geographical location of the country). It is important that this table contain **the number of researchers**, not the total number of employees. These data are particularly important to monitor **researchers’ mobility**.

Citizenship (by geographical location of the country)		Total number of researchers in 20__.		Researchers who came to Serbia in 20__		Researchers who went abroad in 20__		Planned number of researchers for 20__
		All	Women	All	Women	All	Women	
<i>a</i>		1	2	3	4	5	6	7
01	All (02 до 09)	52	28	1	1			55
02	Serbia	52	28					
03	EU member countries							
04	Other European countries							
05	North America							
06	Central and South America							
07	Asia							
08	Africa							
09	Other							

Columns 3 and 4 contain all the researchers who came from abroad during the reference year and worked in R&D more than 3 months.

Columns 5 and 6 contain all the researchers who left Serbia during the reference year.

The data in row 01 in columns 1 and 2 of this table should **correspond to the data in Table 1 in columns 1 and 2**:

Researchers – all and researchers – women (row 02).

Table 7

In Table 7, entitled “Expenditures for R&D activities in the reference year (in thousands of RSD)”, one should indicate all financial funds spent for R&D activity in the reference year, as well as total planned funds for the next year.

Expenditures for R&D				Spent in 20__	Planned for 20__
<i>a</i>				<i>1</i>	<i>2</i>
01	Total expenditures for R&D (02+08+13)			39307	
02	Current costs	Labour costs and employees' remunerations	All (03+05+06+07)	32785	
03			Gross salaries and wages for all R&D employees	32785	
04			Of which gross salaries and wages of researchers	31690	
05			Social contributions borne by the employer (indirect and direct)		
06			Educational costs		
07			Other labour costs		
08		Other current costs	All (09+10+11+12)	5989	
09			For payments on the basis of service contract and author contract	2369	
10			Purchase of R&D related services	609	
11			For material costs for R&D (raw materials, materials, energy)	1100	
12			Other operating costs and expenses (administration costs, etc.)	1911	
13		Investment costs	All (14+15+19+20)	533	
14			For land and buildings		
15			For machinery and equipment:	533	
16			Information and communication equipment	150	
17			Transport equipment	175	
18			Other machinery and equipment	208	
19			Investment in software		
20			Other intellectual property products (patents, licenses, studies, projects, etc.)		

The table is designed so to have spent funds grouped into two main categories: one represents current costs and the other one investment costs. Current costs have an additional sub-category entitled “*Labour costs and employees' remunerations*”, and “*Other current costs*”. The given categories and sub-categories are further classified into cost classes. The sub-category “of which *Gross salaries and wages for researchers*” is not included in the sum “all” (row 02) because it represents gross salaries and wages of all employees in R&D activity.

Labour costs of R&D personnel represent the largest item in current costs. *Other current costs* include non-capital investments in materials, equipment and services for R&D during a year. Additional costs and costs of administration personnel are counted in this group of costs, but costs of activities other than R&D should be deducted from them. Personnel costs include also costs for social and pension funds for R&D personnel. Costs of indirect services are also included, whether originating from the same reporting unit or not (warehousing costs, repair and maintenance of premises, printing of reports, etc.).

Investment costs are total annual costs of real estates for R&D for the reporting unit. They are to be completely indicated for the period in which they occurred and do not contain depreciation elements. They are composed of: costs for land and buildings, as well as of costs for machinery and equipment. The costs for land and buildings: land refers only to the land that is necessary for R&D (land for exploration, for laboratories and pilot installations) and for buildings intended for improvements, modifications and repairs. The share of these costs is difficult to establish so estimation is to be used. The sub-category “*Information and communication equipment*”, “*Transport equipment*” and “*Other machinery and equipment*” under Investment costs are not to be counted in the sum of investment costs (all, row 13) because they represent a part of total investments in machinery and equipment.

The given example shows the purpose of spent resources through data that are to be indicated in corresponding cost classes. Funds are to be indicated in **thousands of dinars**.

The planned funds are to be entered only in the total amount, without breakdown by categories.

Table 8

Table 8, entitled, “*Sources of funds spent on R&D activities in the reference year*”, should be filled in with the sources of financing R&D work.

Sources of funds			Amount in thousands of RSD
<i>a</i>			<i>1</i>
01	Funds spent for R&D by sources - total (02 to 20)		39307
02	Financing sources from Serbia	Own funds of the reporting units	
03		Budgetary funds for R&D	From the Ministry of Education, Science and Technological Development
04			From other ministries
05			General funds of universities/faculties
06		Funds for R&D from government funds, agencies and foundations	
07		Funds for R&D from local authorities	
08		Funds for R&D from business subjects	From other enterprises in the same group
09			From other enterprises outside the group
10		Funds from tertiary education institutions	
11		Funds for R&D from non-profit organisations	
12		Other funds for R&D from domestic sources	
13	Financial funds from abroad	Funds from enterprises in the same group	
14		Funds from other enterprises outside the group	
15		Funds from R&D from foreign governments	
16		Funds for R&D from universities and other tertiary education institutions	
17		Funds for R&D from non-profit organisations	
18		Funds for R&D from the European Commission	
19		Funds for R&D from international organisations	
20		Other foreign funds	

The data in row 01 should equal the data in row 01, column 1 in Table 7 (*Total expenditures for R&D*). The mentioned amounts should be indicated in **thousands of dinars**.

The sources are divided into two categories: the first category refers to domestic sources, and the second one to sources of financing from abroad.

This category includes a sub-category of financing sources. In domestic sources (from the Republic of Serbia), several sources are proposed (ministries, funds, agencies) grouped under the title *"Budgetary funds for R&D"* and *"Funds for R&D from business subjects"*. Row number 02 refers to funds from own sources spent for R&D activity.

The given example shows funds for R&D originating from the Ministry of Education, Science and Technological Development and to a smaller extent from local authorities, funds from other enterprises outside the group, as well as from other foreign funds.

Table 9

Table 9, entitled *"Number and value of R&D works (projects and studies), by fields of science and types of research (include also projects financed by own funds), in the reference year"*, should be filled in with the number of research work by fields of science and types of research, as well as amount of funds spent on R&D, distributed by type of research and fields of science.

Fields of science		Total		Type of researches					
				Basic		Applied		Experimental	
		Number of works	Value	Number of works	Value	Number of Works	Value	Number of Works	Value
a		1	2	3	4	5	6	7	8
01	All (02 to 08)	7	39307	5	37739			2	1568
02	Natural sciences, mathematics	7	39307	5	37739			2	1568
03	Engineering and technology								
04	Social sciences								
05	Humanities and arts								
06	Medical sciences								
07	Agricultural and veterinary sciences								
08	Multidisciplinary sciences								

For ongoing projects (non-finished), indicate the value of finalised stages until the end of the reference year. It is worth mentioning that the data in column 2 *"Value"*, in row 01 should match the data in row 01 in Table 7 *"Total expenditures for R&D"*. Also, it should be identical to the data indicated in row 01 in Table 8 *"Funds spent for R&D by sources – total"*.

The data for the value are to be indicated in **thousands of dinars**.

We stress out that for every indicated number of researches (works), one should indicate their value in thousands of dinars.

In our example there are 7 works and all of them belong to the field of science: natural sciences, mathematics, or which 5 belong to basic researches and 2 to experimental ones. Also, Table 9 shows that total funds were invested in natural sciences, mathematics. A minor amount of funds was invested in experimental researches, and more than 95% of funds in basic researches.

Use the classification in the Annex to establish to which field of science a research belongs to.

- **BASIC** research is a creative, systematic activity focused on acquiring new knowledge on the origin and causes of phenomena and facts, without any particular application or use in view. The results of a basic research are often formulated as general principles, theories or rules.

- **APPLIED** research is undertaken whether to establish a possibility to use the results of a research, having in mind its practical application, or to find new methods or ways that facilitate the achievement of a particular objective set in advance. This survey starts from existing knowledge and examines it thoroughly in view of solving specific issues.

- **EXPERIMENTAL (DEVELOPMENT)** research is a creative systematic activity based on the results of the basic and applied research, and practical knowledge directed towards introducing new materials, products, devices, processes and methods.

Table 10

In Table 10, entitled *“Expenditures for the purchase of R&D related services in the reference year (in thousands of RSD)”*, one should indicate the expenses for R&D performed for you by third persons.

a		1
01	Total expenditures for the purchase of R&D services from (02+08):	10580
02	Subjects in the country (03 to 07)	10580
03	Business subjects	
04	Government sector (public research institutions)	10580
05	Private research institutes/laboratories	
06	University and other tertiary education institutions	
07	Private non-profit organizations	
08	Subjects abroad (09 to 14)	
09	Business subjects	
10	Government sector (public research institutions)	
11	Private research institutes/laboratories	
12	University and other tertiary education institutions	
13	Private non-profit organizations	
14	International organizations	

Expenses for the purchase of R&D services (extramural expenditures) are compensations for R&D work performed separately by an enterprise/institution outside your reporting unit. Financing or expenditures for extramural R&D works (i.e. R&D outside a statistical unit) is not to be included in the amount of extramural R&D - total, which is presented in Table 7.

The data are to be shown in **thousands of dinars**.

In the given example the reporting unit in the reference period purchased R&D services from the government sector (public research institutions) in the country.

At the end of the questionnaire, the date when the questionnaire was filled in should be entered, as well as the name and surname of the person who did it, contact telephone number or e-mail, as well as the name and surname of the reporting unit manager.

For more explanations please contact the Statistical Office of the Republic of Serbia in Belgrade at 011 2412 922, extension 425.

Annexe: - Classification of fields of science

- Classification of activities CA_2010

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