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Research and development in the Republic of Serbia, 2019

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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 2019 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 i 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, 2020

the Director

Dr Miladin Kovačević

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METHODOLOGICAL EXPLANATIONS

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 first week of March. A unique questionnaire is used for all reporting units, which fill in the form IR in March 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 9061).

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 hold any research title; work directly with researchers in carrying out professional or technical works relative to R&D tasks (laboratory technicians, engineers and technicians of technical sciences, designers, librarians, information assistant, computer experts, language editors, etc.).
- **Administrators** carry out exclusively or predominantly organisational, clerical, legal, administrative or financial work (treasurer, secretaries, jurists, etc.).
- Other personnel carry out supporting activities in R&D organisations (employed in workshops, on agricultural land, couriers, switchboard operators, maintenance workers, drivers, suppliers, etc.).
- Excluded are personnel engaged in protection and security, restaurants, hygiene maintenance, and related activities (guards, desk clerks, charwomen, etc.).

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 Education, Science and Technological Development, 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", 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)
- Fields of Science and Technology Classification, OECD 2007, 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.

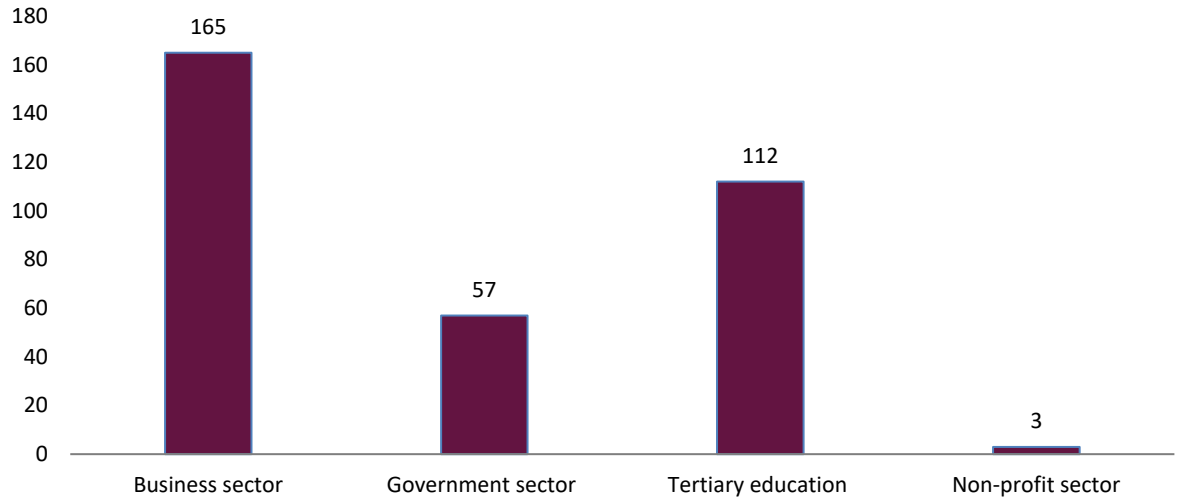
Symbols

-	= nil
…	= data not available
1)	= footnote
0	= data value under 0.5 of measurement unit

Research and development in the Republic of Serbia, 2019

1.1. R&D organizations by sectors and fields of science, 2019

	Total	Business sector	Government sector	Tertiary education	Non-profit sector
REPUBLIC OF SERBIA	**337**	**165**	**57**	**112**	**3**
Natural sciences	64	35	12	16	1
Engineering and technology	129	95	10	23	1
Medical and health sciences	25	13	3	9	-
Agricultural sciences	33	15	11	7	-
Social sciences	64	7	10	46	1
Humanities	22	-	11	11	-
Beogradski region	**209**	**98**	**50**	**59**	**2**
Natural sciences	45	21	12	12	-
Engineering and technology	68	52	6	9	1
Medical and health sciences	17	10	3	4	-
Agricultural sciences	21	9	8	4	-
Social sciences	40	6	10	23	1
Humanities	18	-	11	7	-
Region Vojvodine	**50**	**22**	**5**	**22**	**1**
Natural sciences	9	6	-	2	1
Engineering and technology	17	10	3	4	-
Medical and health sciences	5	2	-	3	-
Agricultural sciences	7	4	2	1	-
Social sciences	11	-	-	11	-
Humanities	1	-	-	1	-
Region Šumadije i Zapadne Srbije	**42**	**26**	**1**	**15**	**-**
Natural sciences	5	4	-	1	-
Engineering and technology	24	20	-	4	-
Medical and health sciences	1	-	-	1	-
Agricultural sciences	4	1	1	2	-
Social sciences	7	1	-	6	-
Humanities	1	-	-	1	-
Region Južne i Istočne Srbije	**36**	**19**	**1**	**16**	**-**
Natural sciences	5	4	-	1	-
Engineering and technology	20	13	1	6	-
Medical and health sciences	2	1	-	1	-
Agricultural sciences	1	1	-	-	-
Social sciences	6	-	-	6	-
Humanities	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, 2019

(head count)

	Total		Researchers		Assistant-researchers		Technicians		Other personnel	
	All	Women	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	**22972**	**11867**	**16399**	**8518**	**1847**	**934**	**3052**	**1614**	**1674**	**801**
Natural sciences	5664	3036	3968	2285	574	252	705	321	417	178
Engineering and technology	6142	2505	4335	1747	435	159	1007	426	365	173
Medical and health sciences	3239	1950	2768	1625	129	93	199	139	143	93
Agricultural sciences	2599	1315	1176	612	278	149	530	293	615	261
Social sciences	3471	1939	2671	1407	247	151	467	325	86	56
Humanities	1857	1122	1481	842	184	130	144	110	48	40
Business sector	**3221**	**1172**	**1483**	**580**	**699**	**244**	**579**	**204**	**460**	**144**
Natural sciences	1346	513	525	223	324	112	276	107	221	71
Engineering and technology	1562	510	885	310	265	71	243	66	169	63
Medical and health sciences	59	46	10	8	39	30	4	3	6	5
Agricultural sciences	201	68	27	13	57	25	53	25	64	5
Social sciences	53	35	36	26	14	6	3	3	-	-
Government sector	**5469**	**3056**	**3292**	**2008**	**305**	**164**	**1229**	**583**	**643**	**301**
Natural sciences	2052	1256	1619	1037	85	38	300	144	48	37
Engineering and technology	1124	538	424	231	77	41	493	201	130	65
Medical and health sciences	186	140	168	125	3	3	10	9	5	3
Agricultural sciences	1282	640	361	218	135	78	347	166	439	178
Social sciences	381	208	324	164	4	3	47	36	6	5
Humanities	444	274	396	233	1	1	32	27	15	13
Tertiary education	**14279**	**7636**	**11621**	**5927**	**843**	**526**	**1244**	**827**	**571**	**356**
Natural sciences	2266	1267	1824	1025	165	102	129	70	148	70
Engineering and technology	3456	1457	3026	1206	93	47	271	159	66	45
Medical and health sciences	2994	1764	2590	1492	87	60	185	127	132	85
Agricultural sciences	1116	607	788	381	86	46	130	102	112	78
Social sciences	3034	1693	2308	1214	229	142	417	286	80	51
Humanities	1413	848	1085	609	183	129	112	83	33	27
Non-profit sector	**3**	**3**	**3**	**3**	**-**	**-**	**-**	**-**	**-**	**-**
Social sciences	3	3	3	3	-	-	-	-	-	-
Beogradski region	**13445**	**6931**	**9474**	**4920**	**1203**	**612**	**1974**	**1002**	**794**	**397**
Natural sciences	3866	2137	2802	1629	385	182	506	247	173	79
Engineering and technology	3327	1240	2084	799	260	84	692	232	291	125
Medical and health sciences	1684	1025	1429	851	74	54	151	106	30	14
Agricultural sciences	1358	733	705	377	220	118	247	143	186	95
Social sciences	1971	1066	1449	715	129	73	318	227	75	51
Humanities	1239	730	1005	549	135	101	60	47	39	33
Business sector	**1976**	**745**	**989**	**400**	**485**	**165**	**304**	**107**	**198**	**73**
Natural sciences	574	246	226	104	201	73	107	55	40	14
Engineering and technology	1251	405	712	259	213	56	175	38	151	52
Medical and health sciences	46	34	10	8	29	20	2	1	5	5
Agricultural sciences	52	25	5	3	28	10	17	10	2	2
Social sciences	53	35	36	26	14	6	3	3	-	-
Government sector	**4320**	**2453**	**2915**	**1790**	**234**	**123**	**918**	**422**	**253**	**118**
Natural sciences	2052	1256	1619	1037	85	38	300	144	48	37
Engineering and technology	696	278	200	99	22	12	382	132	92	35
Medical and health sciences	186	140	168	125	3	3	10	9	5	3
Agricultural sciences	561	297	208	132	119	66	147	74	87	25
Social sciences	381	208	324	164	4	3	47	36	6	5
Humanities	444	274	396	233	1	1	32	27	15	13
Tertiary education	**7146**	**3730**	**5567**	**2727**	**484**	**324**	**752**	**473**	**343**	**206**
Natural sciences	1240	635	957	488	99	71	99	48	85	28
Engineering and technology	1380	557	1172	441	25	16	135	62	48	38
Medical and health sciences	1452	851	1251	718	42	31	139	96	20	6
Agricultural sciences	745	411	492	242	73	42	83	59	97	68
Social sciences	1534	820	1086	522	111	64	268	188	69	46
Humanities	795	456	609	316	134	100	28	20	24	20
Non-profit sector	**3**	**3**	**3**	**3**	**-**	**-**	**-**	**-**	**-**	**-**
Social sciences	3	3	3	3	-	-	-	-	-	-

2.1. Full-time and part-time employees engaged in R&D activities, by sectors, fields of science and sex, 2019
(head count) (continued)

	Total		Researchers		Assistant-researchers		Technicians		Other personnel	
	All	Women	All	Women	All	Women	All	Women	All	Women
Region Vojvodine	**5727**	**2952**	**3848**	**2021**	**372**	**184**	**699**	**387**	**808**	**360**
Natural sciences	1345	639	743	407	160	59	198	74	244	99
Engineering and technology	1438	672	1263	560	48	23	107	75	20	14
Medical and health sciences	838	528	697	422	10	10	18	17	113	79
Agricultural sciences	1101	507	372	183	46	23	258	137	425	164
Social sciences	942	566	738	430	99	65	101	69	4	2
Humanities	63	40	35	19	9	4	17	15	2	2
Business sector	**941**	**316**	**317**	**119**	**160**	**59**	**214**	**73**	**250**	**65**
Natural sciences	739	252	270	105	120	38	168	52	181	57
Engineering and technology	85	31	40	10	12	3	27	13	6	5
Medical and health sciences	13	12	-	-	10	10	2	2	1	-
Agricultural sciences	104	21	7	4	18	8	17	6	62	3
Government sector	**939**	**473**	**295**	**166**	**49**	**31**	**231**	**115**	**364**	**161**
Engineering and technology	243	146	162	94	34	20	33	23	14	9
Agricultural sciences	696	327	133	72	15	11	198	92	350	152
Tertiary education	**3847**	**2163**	**3236**	**1736**	**163**	**94**	**254**	**199**	**194**	**134**
Natural sciences	606	387	473	302	40	21	30	22	63	42
Engineering and technology	1110	495	1061	456	2	-	47	39	-	-
Medical and health sciences	825	516	697	422	-	-	16	15	112	79
Agricultural sciences	301	159	232	107	13	4	43	39	13	9
Social sciences	942	566	738	430	99	65	101	69	4	2
Humanities	63	40	35	19	9	4	17	15	2	2
Region Šumadije i Zapadne Srbije	**1506**	**818**	**1230**	**668**	**114**	**62**	**135**	**75**	**27**	**13**
Natural sciences	219	132	192	122	26	10	1	-	-	-
Engineering and technology	314	115	242	87	24	9	32	11	16	8
Medical and health sciences	363	202	298	163	35	23	30	16	-	-
Agricultural sciences	101	56	87	47	1	1	9	6	4	2
Social sciences	299	176	241	141	12	8	39	24	7	3
Humanities	210	137	170	108	16	11	24	18	-	-
Business sector	**117**	**37**	**54**	**15**	**21**	**7**	**36**	**13**	**6**	**2**
Natural sciences	3	1	2	1	-	-	1	-	-	-
Engineering and technology	108	33	49	13	21	7	32	11	6	2
Agricultural sciences	6	3	3	1	-	-	3	2	-	-
Government sector	**25**	**16**	**20**	**14**	**1**	**1**	**2**	**-**	**2**	**1**
Agricultural sciences	25	16	20	14	1	1	2	-	2	1
Tertiary education	**1364**	**765**	**1156**	**639**	**92**	**54**	**97**	**62**	**19**	**10**
Natural sciences	216	131	190	121	26	10	-	-	-	-
Engineering and technology	206	82	193	74	3	2	-	-	10	6
Medical and health sciences	363	202	298	163	35	23	30	16	-	-
Agricultural sciences	70	37	64	32	-	-	4	4	2	1
Social sciences	299	176	241	141	12	8	39	24	7	3
Humanities	210	137	170	108	16	11	24	18	-	-
Region Južne i Istočne Srbije	**2294**	**1166**	**1847**	**909**	**158**	**76**	**244**	**150**	**45**	**31**
Natural sciences	234	128	231	127	3	1	-	-	-	-
Engineering and technology	1063	478	746	301	103	43	176	108	38	26
Medical and health sciences	354	195	344	189	10	6	-	-	-	-
Agricultural sciences	39	19	12	5	11	7	16	7	-	-
Social sciences	259	131	243	121	7	5	9	5	-	-
Humanities	345	215	271	166	24	14	43	30	7	5
Business sector	**187**	**74**	**123**	**46**	**33**	**13**	**25**	**11**	**6**	**4**
Natural sciences	30	14	27	13	3	1	-	-	-	-
Engineering and technology	118	41	84	28	19	5	9	4	6	4
Agricultural sciences	39	19	12	5	11	7	16	7	-	-
Government sector	**185**	**114**	**62**	**38**	**21**	**9**	**78**	**46**	**24**	**21**
Engineering and technology	185	114	62	38	21	9	78	46	24	21
Tertiary education	**1922**	**978**	**1662**	**825**	**104**	**54**	**141**	**93**	**15**	**6**
Natural sciences	204	114	204	114	-	-	-	-	-	-
Engineering and technology	760	323	600	235	63	29	89	58	8	1
Medical and health sciences	354	195	344	189	10	6	-	-	-	-
Social sciences	259	131	243	121	7	5	9	5	-	-
Humanities	345	215	271	166	24	14	43	30	7	5
Region Kosovo i Metohija	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**

2.2. Full-time and part-time employees engaged in R&D activities by sectors, fields of sciences and sex, expressed in full-time equivalent, 2019

	Total		Researchers		Assistant-researchers		Technicians		Other personnel	
	All	Women	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	**20545,0**	**10626,1**	**14535,3**	**7578,6**	**1671,2**	**853,8**	**2743,8**	**1438,1**	**1594,7**	**755,6**
Natural sciences	5348,4	2889,5	3787,8	2204,3	537,0	233,3	618,0	277,3	405,6	174,6
Engineering and technology	5449,2	2198,7	3855,0	1548,5	360,6	135,7	907,3	367,3	326,3	147,2
Medical and health sciences	2416,1	1464,5	1993,8	1171,6	108,6	79,8	171,5	120,1	142,2	93,0
Agricultural sciences	2523,9	1292,8	1135,7	604,6	270,4	144,9	505,8	283,3	612,0	260,0
Social sciences	3016,8	1691,3	2338,8	1233,1	214,6	133,3	399,6	281,7	63,8	43,2
Humanities	1790,6	1089,3	1424,2	816,5	180,0	126,8	141,6	108,4	44,8	37,6
Business sector	**2940,0**	**1069,8**	**1401,1**	**554,1**	**596,4**	**213,4**	**503,0**	**165,8**	**439,5**	**136,5**
Natural sciences	1226,5	455,4	494,7	208,7	288,7	94,5	232,6	83,7	210,5	68,5
Engineering and technology	1419,7	472,6	836,7	299,8	206,3	61,8	217,7	53,0	159,0	58,0
Medical and health sciences	56,1	45,1	9,2	8,0	36,9	29,1	4,0	3,0	6,0	5,0
Agricultural sciences	186,0	62,5	25,5	12,1	50,8	22,3	45,7	23,1	64,0	5,0
Social sciences	51,7	34,2	35,0	25,5	13,7	5,7	3,0	3,0	-	-
Government sector	**5370,1**	**2999,1**	**3224,9**	**1971,7**	**298,3**	**157,4**	**1207,9**	**571,0**	**639,0**	**299,0**
Natural sciences	2036,0	1246,1	1603,0	1027,1	85,0	38,0	300,0	144,0	48,0	37,0
Engineering and technology	1108,2	527,4	415,1	227,2	71,1	35,2	493,0	201,0	129,0	64,0
Medical and health sciences	146,5	116,4	133,5	106,4	2,2	2,2	5,8	4,8	5,0	3,0
Agricultural sciences	1261,3	631,2	360,2	218,0	135,0	78,0	330,1	158,2	436,0	177,0
Social sciences	378,9	206,6	321,9	162,6	4,0	3,0	47,0	36,0	6,0	5,0
Humanities	439,2	271,4	391,2	230,4	1,0	1,0	32,0	27,0	15,0	13,0
Tertiary education	**12234,3**	**6556,6**	**9908,7**	**5052,2**	**776,5**	**483,0**	**1032,9**	**701,3**	**516,2**	**320,1**
Natural sciences	2085,9	1188,0	1690,1	968,5	163,3	100,8	85,4	49,6	147,1	69,1
Engineering and technology	2921,3	1198,7	2603,2	1021,5	83,2	38,7	196,6	113,3	38,3	25,2
Medical and health sciences	2213,5	1303,0	1851,1	1057,2	69,5	48,5	161,7	112,3	131,2	85,0
Agricultural sciences	1076,6	599,1	750,0	374,5	84,6	44,6	130,0	102,0	112,0	78,0
Social sciences	2585,6	1449,9	1981,3	1044,4	196,9	124,6	349,6	242,7	57,8	38,2
Humanities	1351,4	817,9	1033,0	586,1	179,0	125,8	109,6	81,4	29,8	24,6
Non-profit sector	**0,6**	**0,6**	**0,6**	**0,6**	**-**	**-**	**-**	**-**	**-**	**-**
Social sciences	0,6	0,6	0,6	0,6	-	-	-	-	-	-
Beogradski region	**12266,9**	**6344,8**	**8659,7**	**4518,7**	**1093,1**	**572,9**	**1776,3**	**892,4**	**737,8**	**360,8**
Natural sciences	3625,7	2031,2	2664,3	1571,2	362,2	171,5	429,0	211,3	170,2	77,2
Engineering and technology	3053,0	1127,1	1929,0	736,9	207,5	74,5	653,2	209,9	263,3	105,8
Medical and health sciences	1400,3	846,4	1160,6	684,1	72,0	53,2	138,5	95,1	29,2	14,0
Agricultural sciences	1307,9	722,5	666,2	370,5	216,9	115,7	238,8	141,3	186,0	95,0
Social sciences	1692,3	914,5	1276,3	626,7	103,5	60,2	259,2	189,4	53,3	38,2
Humanities	1187,7	703,1	963,3	529,3	131,0	97,8	57,6	45,4	35,8	30,6
Business sector	**1793,8**	**686,5**	**944,1**	**388,9**	**410,0**	**147,3**	**253,0**	**83,3**	**186,7**	**67,0**
Natural sciences	500,8	214,3	211,5	99,6	178,2	62,5	73,6	39,7	37,5	12,5
Engineering and technology	1150,3	380,8	683,4	252,8	164,0	50,0	160,7	30,5	142,2	47,5
Medical and health sciences	44,0	34,0	9,2	8,0	27,8	20,0	2,0	1,0	5,0	5,0
Agricultural sciences	47,0	23,2	5,0	3,0	26,3	9,1	13,7	9,1	2,0	2,0
Social sciences	51,7	34,2	35,0	25,5	13,7	5,7	3,0	3,0	-	-
Government sector	**4251,9**	**2414,7**	**2856,8**	**1757,5**	**233,2**	**122,2**	**908,9**	**417,0**	**253,0**	**118,0**
Natural sciences	2036,0	1246,1	1603,0	1027,1	85,0	38,0	300,0	144,0	48,0	37,0
Engineering and technology	696,0	278,0	200,0	99,0	22,0	12,0	382,0	132,0	92,0	35,0
Medical and health sciences	146,5	116,4	133,5	106,4	2,2	2,2	5,8	4,8	5,0	3,0
Agricultural sciences	555,3	296,2	207,2	132,0	119,0	66,0	142,1	73,2	87,0	25,0
Social sciences	378,9	206,6	321,9	162,6	4,0	3,0	47,0	36,0	6,0	5,0
Humanities	439,2	271,4	391,2	230,4	1,0	1,0	32,0	27,0	15,0	13,0
Tertiary education	**6220,6**	**3243,0**	**4858,2**	**2371,7**	**449,9**	**303,4**	**614,4**	**392,1**	**298,1**	**175,8**
Natural sciences	1088,9	570,8	849,8	444,5	99,0	71,0	55,4	27,6	84,7	27,7
Engineering and technology	1206,7	468,3	1045,6	385,1	21,5	12,5	110,5	47,4	29,1	23,3
Medical and health sciences	1209,8	696,0	1017,9	569,7	42,0	31,0	130,7	89,3	19,2	6,0
Agricultural sciences	705,6	403,1	454,0	235,5	71,6	40,6	83,0	59,0	97,0	68,0
Social sciences	1261,1	673,1	918,8	438,0	85,8	51,5	209,2	150,4	47,3	33,2
Humanities	748,5	431,7	572,1	298,9	130,0	96,8	25,6	18,4	20,8	17,6
Non-profit sector	**0,6**	**0,6**	**0,6**	**0,6**	**-**	**-**	**-**	**-**	**-**	**-**
Social sciences	0,6	0,6	0,6	0,6	-	-	-	-	-	-

2.2. Full-time and part-time employees engaged in R&D activities by sectors, fields of sciences and sex, expressed in full-time equivalent, 2019 (continued)

	Total		Researchers		Assistant-researchers		Technicians		Other personnel	
	All	Women	All	Women	All	Women	All	Women	All	Women
Region Vojvodine	**5006,4**	**2547,2**	**3231,5**	**1682,9**	**339,9**	**161,7**	**640,8**	**346,2**	**794,2**	**356,4**
Natural sciences	1279,8	604,1	709,6	389,9	146,8	50,8	188,0	66,0	235,4	97,4
Engineering and technology	1266,6	579,6	1125,1	495,4	41,4	16,5	81,8	54,7	18,3	13,0
Medical and health sciences	517,1	335,5	377,0	230,4	9,1	9,1	18,0	17,0	113,0	79,0
Agricultural sciences	1076,0	495,3	370,5	182,1	41,5	21,2	242,0	129,0	422,0	163,0
Social sciences	804,4	493,2	614,8	366,6	92,1	60,1	94,0	64,5	3,5	2,0
Humanities	62,5	39,5	34,5	18,5	9,0	4,0	17,0	15,0	2,0	2,0
Business sector	**883,9**	**287,2**	**301,4**	**110,6**	**141,9**	**48,6**	**199,3**	**64,0**	**241,3**	**64,0**
Natural sciences	696,5	228,5	257,5	97,5	108,0	31,0	158,0	44,0	173,0	56,0
Engineering and technology	81,3	30,3	38,4	10,0	11,3	2,3	26,3	13,0	5,3	5,0
Medical and health sciences	12,1	11,1	-	-	9,1	9,1	2,0	2,0	1,0	-
Agricultural sciences	94,0	17,3	5,5	3,1	13,5	6,2	13,0	5,0	62,0	3,0
Government sector	**908,2**	**454,4**	**286,1**	**162,2**	**43,1**	**25,2**	**219,0**	**108,0**	**360,0**	**159,0**
Engineering and technology	227,2	135,4	153,1	90,2	28,1	14,2	33,0	23,0	13,0	8,0
Agricultural sciences	681,0	319,0	133,0	72,0	15,0	11,0	186,0	85,0	347,0	151,0
Tertiary education	**3214,3**	**1805,6**	**2644,0**	**1410,1**	**154,9**	**87,9**	**222,5**	**174,2**	**192,9**	**133,4**
Natural sciences	583,3	375,6	452,1	292,4	38,8	19,8	30,0	22,0	62,4	41,4
Engineering and technology	958,1	413,9	933,6	395,2	2,0	-	22,5	18,7	-	-
Medical and health sciences	505,0	324,4	377,0	230,4	-	-	16,0	15,0	112,0	79,0
Agricultural sciences	301,0	159,0	232,0	107,0	13,0	4,0	43,0	39,0	13,0	9,0
Social sciences	804,4	493,2	614,8	366,6	92,1	60,1	94,0	64,5	3,5	2,0
Humanities	62,5	39,5	34,5	18,5	9,0	4,0	17,0	15,0	2,0	2,0
Region Šumadije i Zapadne Srbije	**1147,4**	**649,4**	**932,8**	**532,8**	**86,5**	**47,5**	**108,1**	**60,3**	**20,0**	**8,8**
Natural sciences	212,9	128,8	186,4	118,8	25,5	10,0	1,0	-	-	-
Engineering and technology	197,4	72,0	152,2	56,7	14,5	6,0	21,7	5,5	9,0	3,8
Medical and health sciences	145,5	88,3	113,0	68,8	17,5	11,5	15,0	8,0	-	-
Agricultural sciences	101,0	56,0	87,0	47,0	1,0	1,0	9,0	6,0	4,0	2,0
Social sciences	286,9	168,8	230,5	135,0	12,0	8,0	37,4	22,8	7,0	3,0
Humanities	203,7	135,5	163,7	106,5	16,0	11,0	24,0	18,0	-	-
Business sector	**83,7**	**25,7**	**40,0**	**11,7**	**12,0**	**4,5**	**25,7**	**7,5**	**6,0**	**2,0**
Natural sciences	3,0	1,0	2,0	1,0	-	-	1,0	-	-	-
Engineering and technology	74,7	21,7	35,0	9,7	12,0	4,5	21,7	5,5	6,0	2,0
Agricultural sciences	6,0	3,0	3,0	1,0	-	-	3,0	2,0	-	-
Government sector	**25,0**	**16,0**	**20,0**	**14,0**	**1,0**	**1,0**	**2,0**	**-**	**2,0**	**1,0**
Agricultural sciences	25,0	16,0	20,0	14,0	1,0	1,0	2,0	-	2,0	1,0
Tertiary education	**1038,7**	**607,7**	**872,8**	**507,1**	**73,5**	**42,0**	**80,4**	**52,8**	**12,0**	**5,8**
Natural sciences	209,9	127,8	184,4	117,8	25,5	10,0	-	-	-	-
Engineering and technology	122,7	50,3	117,2	47,0	2,5	1,5	-	-	3,0	1,8
Medical and health sciences	145,5	88,3	113,0	68,8	17,5	11,5	15,0	8,0	-	-
Agricultural sciences	70,0	37,0	64,0	32,0	-	-	4,0	4,0	2,0	1,0
Social sciences	286,9	168,8	230,5	135,0	12,0	8,0	37,4	22,8	7,0	3,0
Humanities	203,7	135,5	163,7	106,5	16,0	11,0	24,0	18,0	-	-
Region Južne i Istočne Srbije	**2124,3**	**1084,7**	**1711,3**	**844,2**	**151,7**	**71,7**	**218,6**	**139,2**	**42,7**	**29,6**
Natural sciences	230,0	125,4	227,5	124,4	2,5	1,0	-	-	-	-
Engineering and technology	932,2	420,0	648,7	259,5	97,2	38,7	150,6	97,2	35,7	24,6
Medical and health sciences	353,2	194,3	343,2	188,3	10,0	6,0	-	-	-	-
Agricultural sciences	39,0	19,0	12,0	5,0	11,0	7,0	16,0	7,0	-	-
Social sciences	233,2	114,8	217,2	104,8	7,0	5,0	9,0	5,0	-	-
Humanities	336,7	211,2	262,7	162,2	24,0	14,0	43,0	30,0	7,0	5,0
Business sector	**178,6**	**70,4**	**115,6**	**42,9**	**32,5**	**13,0**	**25,0**	**11,0**	**5,5**	**3,5**
Natural sciences	26,2	11,6	23,7	10,6	2,5	1,0	-	-	-	-
Engineering and technology	113,4	39,8	79,9	27,3	19,0	5,0	9,0	4,0	5,5	3,5
Agricultural sciences	39,0	19,0	12,0	5,0	11,0	7,0	16,0	7,0	-	-
Government sector	**185,0**	**114,0**	**62,0**	**38,0**	**21,0**	**9,0**	**78,0**	**46,0**	**24,0**	**21,0**
Engineering and technology	185,0	114,0	62,0	38,0	21,0	9,0	78,0	46,0	24,0	21,0
Tertiary education	**1760,7**	**900,3**	**1533,7**	**763,3**	**98,2**	**49,7**	**115,6**	**82,2**	**13,2**	**5,1**
Natural sciences	203,8	113,8	203,8	113,8	-	-	-	-	-	-
Engineering and technology	633,8	266,2	506,8	194,2	57,2	24,7	63,6	47,2	6,2	0,1
Medical and health sciences	353,2	194,3	343,2	188,3	10,0	6,0	-	-	-	-
Social sciences	233,2	114,8	217,2	104,8	7,0	5,0	9,0	5,0	-	-
Humanities	336,7	211,2	262,7	162,2	24,0	14,0	43,0	30,0	7,0	5,0
Region Kosovo i Metohija	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**

3.1. Full-time and part-time researchers, by academic titles, sectors, field of science and sex, 2019 (head count)

	Full-time and part-time reasearchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	**16399**	**8518**	**11145**	**5690**	**3136**	**1739**	**2118**	**1089**
Natural sciences	3968	2285	2552	1416	848	525	568	344
Engineering and technology	4335	1747	2641	1057	993	472	701	218
Medical and health sciences	2768	1625	1882	1091	489	289	397	245
Agricultural sciences	1176	612	961	507	122	58	93	47
Social sciences	2671	1407	2136	1046	389	245	146	116
Humanities	1481	842	973	573	295	150	213	119
Business sector	**1483**	**580**	**391**	**166**	**373**	**165**	**719**	**249**
Natural sciences	525	223	130	44	139	54	256	125
Computer and information sciences	119	31	44	8	38	9	37	14
Chemical sciences	60	38	18	11	19	12	23	15
Earth and related environmental sciences	49	18	23	7	17	6	9	5
Other natural sciences	297	136	45	18	65	27	187	91
Engineering and technology	885	310	220	98	221	104	444	108
Civil engineering	5	2	-	-	1	-	4	2
Electrical engineering, electronic engineering and information engineering	341	107	86	30	81	38	174	39
Mechanical engineering	178	27	49	17	48	7	81	3
Chemical engineering	57	29	16	8	20	11	21	10
Materials engineering	7	3	1	-	3	2	3	1
Medical engineering	29	8	12	3	9	3	8	2
Environmental engineering	4	1	-	-	2	1	2	-
Environmental biotechnology	1	1	-	-	-	-	1	1
Other technologies and engineering	263	132	56	40	57	42	150	50
Medical and health sciences	10	8	2	1	1	1	7	6
Clinical medicine	3	2	2	1	1	1	-	-
Other medical sciences	7	6	-	-	-	-	7	6
Agricultural sciences	27	13	19	10	6	1	2	2
Veterinary sciences	1	-	-	-	1	-	-	-
Agricultural biotechnology	26	13	19	10	5	1	2	2
Social sciences	36	26	20	13	6	5	10	8
Economics and business	16	8	11	5	4	3	1	-
Other social sciences	20	18	9	8	2	2	9	8
Government sector	**3292**	**2008**	**2383**	**1429**	**774**	**490**	**135**	**89**
Natural sciences	1619	1037	1161	715	398	280	60	42
Mathematics	278	170	207	122	71	48	-	-
Physical sciences	664	372	474	253	171	103	19	16
Earth and related environmental sciences	13	-	7	-	6	-	-	-
Biological sciences	449	366	327	262	84	81	38	23
Other natural sciences	215	129	146	78	66	48	3	3
Engineering and technology	424	231	288	154	107	65	29	12
Civil engineering	30	21	21	14	9	7	-	-
Electrical engineering, electronic engineering and information engineering	46	16	29	11	6	1	11	4
Materials engineering	45	24	31	15	12	8	2	1
Environmental biotechnology	123	75	107	64	16	11	-	-
Industrial biotechnology	34	19	27	15	5	4	2	-
Other technologies and engineering	146	76	73	35	59	34	14	7
Medical and health sciences	168	125	113	87	47	31	8	7
Basic medicine	82	59	54	42	28	17	-	-
Other medical sciences	86	66	59	45	19	14	8	7
Agricultural sciences	361	218	290	181	51	22	20	15
Animal and dairy science	29	13	16	13	13	-	-	-
Veterinary sciences	19	11	17	9	2	2	-	-
Agricultural biotechnology	262	157	211	126	31	16	20	15
Other agricultural sciences	51	37	46	33	5	4	-	-
Social sciences	324	164	242	116	72	42	10	6
Psychology	69	34	54	25	15	9	-	-
Economics and business	58	36	41	23	17	13	-	-
Sociology	38	14	26	9	12	5	-	-
Law	48	23	34	17	13	5	1	1
Political science	87	37	67	25	11	7	9	5
Other social sciences	24	20	20	17	4	3	-	-

3.1. Full-time and part-time researchers, by academic titles, sectors, field of science and sex, 2019
(head count) (continued)

	Full-time and part-time reasearchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Humanities	396	233	289	176	99	50	8	7
History and archeology	208	91	155	70	53	21	-	-
Languages and literature	113	83	78	57	27	19	8	7
Art (art, history of arts, performing arts, music)	20	16	12	10	8	6	-	-
Other humanities	55	43	44	39	11	4	-	-
Tertiary education	**11621**	**5927**	**8370**	**4094**	**1987**	**1082**	**1264**	**751**
Natural sciences	1824	1025	1261	657	311	191	252	177
Mathematics	986	585	611	346	132	68	243	171
Computer and information sciences	223	99	189	80	27	15	7	4
Physical sciences	84	30	68	21	16	9	-	-
Chemical sciences	164	94	120	60	44	34	-	-
Earth and related environmental sciences	159	80	117	56	40	22	2	2
Biological sciences	208	137	156	94	52	43	-	-
Engineering and technology	3026	1206	2133	805	665	303	228	98
Civil engineering	364	160	254	107	51	14	59	39
Electrical engineering, electronic engineering and information engineering	1283	442	852	252	377	172	54	18
Mechanical engineering	472	122	328	76	78	23	66	23
Chemical engineering	202	129	185	116	16	12	1	1
Environmental engineering	206	81	141	60	53	16	12	5
Other technologies and engineering	499	272	373	194	90	66	36	12
Medical and health sciences	2590	1492	1767	1003	441	257	382	232
Basic medicine	1545	828	1281	682	111	61	153	85
Other medical sciences	1045	664	486	321	330	196	229	147
Agricultural sciences	788	381	652	316	65	35	71	30
Agriculture, forestry and fishery	413	202	314	155	58	29	41	18
Veterinary sciences	117	55	100	50	-	-	17	5
Agricultural biotechnology	17	6	16	5	1	1	-	-
Other agricultural sciences	241	118	222	106	6	5	13	7
Social sciences	2308	1214	1873	916	309	196	126	102
Psychology	82	47	57	23	-	-	25	24
Economics and business	665	331	562	262	87	59	16	10
Educational sciences	382	243	313	184	25	18	44	41
Law	458	186	396	146	38	24	24	16
Political science	156	71	110	50	44	20	2	1
Media and communications	28	18	28	18	-	-	-	-
Other social sciences	537	318	407	233	115	75	15	10
Humanities	1085	609	684	397	196	100	205	112
Languages and literature	405	264	258	174	36	16	111	74
Phylosophy, ethics and religion	473	234	327	157	93	52	53	25
Art (art, history of arts, performing arts, music)	179	91	72	47	66	31	41	13
Other humanities	28	20	27	19	1	1	-	-
Non-profit sector	**3**	**3**	**1**	**1**	**2**	**2**	**-**	**-**
Social sciences	3	3	1	1	2	2	-	-
Law	3	3	1	1	2	2	-	-
Beogradski region	**9474**	**4920**	**6826**	**3532**	**1692**	**936**	**956**	**452**
Natural sciences	2802	1629	1939	1075	710	458	153	96
Engineering and technology	2084	799	1228	500	412	172	444	127
Medical and health sciences	1429	851	1184	698	151	86	94	67
Agricultural sciences	705	377	599	326	54	21	52	30
Social sciences	1449	715	1172	542	202	115	75	58
Humanities	1005	549	704	391	163	84	138	74
Business sector	**989**	**400**	**295**	**140**	**248**	**118**	**446**	**142**
Natural sciences	226	104	82	34	71	30	73	40
Computer and information sciences	21	5	2	-	7	3	12	2
Chemical sciences	54	34	18	11	17	10	19	13
Earth and related environmental sciences	45	17	23	7	13	5	9	5
Other natural sciences	106	48	39	16	34	12	33	20

3.1. Full-time and part-time researchers, by academic titles, sectors, field of science and sex, 2019
(head count) (continued)

	Full-time and part-time reasearchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Engineering and technology	712	259	189	90	168	82	355	87
Civil engineering	4	1	-	-	1	-	3	1
Electrical engineering, electronic engineering and information engineering	230	74	68	25	52	26	110	23
Mechanical engineering	173	27	49	17	48	7	76	3
Chemical engineering	43	25	16	8	11	7	16	10
Environmental biotechnology	1	1	-	-	-	-	1	1
Other technologies and engineering	261	131	56	40	56	42	149	49
Medical and health sciences	10	8	2	1	1	1	7	6
Clinical medicine	3	2	2	1	1	1	-	-
Other medical sciences	7	6	-	-	-	-	7	6
Agricultural sciences	5	3	2	2	2	-	1	1
Veterinary sciences	1	-	-	-	1	-	-	-
Agricultural biotechnology	4	3	2	2	1	-	1	1
Social sciences	36	26	20	13	6	5	10	8
Economics and business	16	8	11	5	4	3	1	-
Other social sciences	20	18	9	8	2	2	9	8
Government sector	**2915**	**1790**	**2122**	**1279**	**671**	**429**	**122**	**82**
Natural sciences	1619	1037	1161	715	398	280	60	42
Mathematics	278	170	207	122	71	48	-	-
Physical sciences	664	372	474	253	171	103	19	16
Earth and related environmental sciences	13	-	7	-	6	-	-	-
Biological sciences	449	366	327	262	84	81	38	23
Other natural sciences	215	129	146	78	66	48	3	3
Engineering and technology	200	99	151	74	32	20	17	5
Civil engineering	30	21	21	14	9	7	-	-
Electrical engineering, electronic engineering and information engineering	46	16	29	11	6	1	11	4
Materials engineering	45	24	31	15	12	8	2	1
Environmental biotechnology	34	19	34	19	-	-	-	-
Industrial biotechnology	34	19	27	15	5	4	2	-
Other technologies and engineering	11	-	9	-	-	-	2	-
Medical and health sciences	168	125	113	87	47	31	8	7
Basic medicine	82	59	54	42	28	17	-	-
Other medical sciences	86	66	59	45	19	14	8	7
Agricultural sciences	208	132	166	111	23	6	19	15
Animal and dairy science	29	13	16	13	13	-	-	-
Veterinary sciences	19	11	17	9	2	2	-	-
Agricultural biotechnology	129	85	104	68	6	2	19	15
Other agricultural sciences	31	23	29	21	2	2	-	-
Social sciences	324	164	242	116	72	42	10	6
Psychology	69	34	54	25	15	9	-	-
Economics and business	58	36	41	23	17	13	-	-
Sociology	38	14	26	9	12	5	-	-
Law	48	23	34	17	13	5	1	1
Political science	87	37	67	25	11	7	9	5
Other social sciences	24	20	20	17	4	3	-	-
Humanities	396	233	289	176	99	50	8	7
History and archeology	208	91	155	70	53	21	-	-
Languages and literature	113	83	78	57	27	19	8	7
Art (art, history of arts, performing arts, music)	20	16	12	10	8	6	-	-
Other humanities	55	43	44	39	11	4	-	-
Tertiary education	**5567**	**2727**	**4408**	**2112**	**771**	**387**	**388**	**228**
Natural sciences	957	488	696	326	241	148	20	14
Mathematics	162	67	81	30	70	29	11	8
Computer and information sciences	223	99	189	80	27	15	7	4
Physical sciences	84	30	68	21	16	9	-	-
Chemical sciences	164	94	120	60	44	34	-	-
Earth and related environmental sciences	116	61	82	41	32	18	2	2
Biological sciences	208	137	156	94	52	43	-	-

3.1. Full-time and part-time researchers, by academic titles, sectors, field of science and sex, 2019
(head count) (continued)

	Full-time and part-time reasearchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Engineering and technology	1172	441	888	336	212	70	72	35
Civil engineering	221	95	156	67	43	12	22	16
Electrical engineering, electronic engineering and information engineering	227	61	170	40	28	12	29	9
Mechanical engineering	251	58	178	36	73	22	-	-
Chemical engineering	140	95	137	92	3	3	-	-
Environmental engineering	155	58	102	42	53	16	-	-
Other technologies and engineering	178	74	145	59	12	5	21	10
Medical and health sciences	1251	718	1069	610	103	54	79	54
Basic medicine	903	476	793	419	98	51	12	6
Other medical sciences	348	242	276	191	5	3	67	48
Agricultural sciences	492	242	431	213	29	15	32	14
Agriculture, forestry and fishery	117	63	93	52	22	9	2	2
Veterinary sciences	117	55	100	50	-	-	17	5
Agricultural biotechnology	17	6	16	5	1	1	-	-
Other agricultural sciences	241	118	222	106	6	5	13	7
Social sciences	1086	522	909	412	122	66	55	44
Economics and business	357	165	302	135	50	27	5	3
Educational sciences	226	138	195	111	3	1	28	26
Law	277	116	238	88	22	17	17	11
Political science	156	71	110	50	44	20	2	1
Media and communications	28	18	28	18	-	-	-	-
Other social sciences	42	14	36	10	3	1	3	3
Humanities	609	316	415	215	64	34	130	67
Languages and literature	235	156	172	113	3	3	60	40
Phylosophy, ethics and religion	303	119	203	74	49	22	51	23
Art (art, history of arts, performing arts, music)	43	21	13	9	11	8	19	4
Other humanities	28	20	27	19	1	1	-	-
Non-profit sector	**3**	**3**	**1**	**1**	**2**	**2**	**-**	**-**
Social sciences	3	3	1	1	2	2	-	-
Law	3	3	1	1	2	2	-	-
Region Vojvodine	**3848**	**2021**	**2265**	**1131**	**981**	**546**	**602**	**344**
Natural sciences	743	407	368	205	59	20	316	182
Engineering and technology	1263	560	812	326	409	222	42	12
Medical and health sciences	697	422	210	130	325	193	162	99
Agricultural sciences	372	183	285	143	52	27	35	13
Social sciences	738	430	563	310	128	82	47	38
Humanities	35	19	27	17	8	2	-	-
Business sector	**317**	**119**	**53**	**14**	**56**	**17**	**208**	**88**
Natural sciences	270	105	47	10	46	13	177	82
Computer and information sciences	92	23	41	8	30	5	21	10
Chemical sciences	6	4	-	-	2	2	4	2
Earth and related environmental sciences	4	1	-	-	4	1	-	-
Other natural sciences	168	77	6	2	10	5	152	70
Engineering and technology	40	10	1	-	8	4	31	6
Electrical engineering, electronic engineering and information engineering	34	8	-	-	6	2	28	6
Mechanical engineering	2	-	-	-	-	-	2	-
Materials engineering	4	2	1	-	2	2	1	-
Agricultural sciences	7	4	5	4	2	-	-	-
Agricultural biotechnology	7	4	5	4	2	-	-	-
Government sector	**295**	**166**	**221**	**122**	**71**	**43**	**3**	**1**
Engineering and technology	162	94	114	64	46	29	2	1
Environmental biotechnology	89	56	73	45	16	11	-	-
Other technologies and engineering	73	38	41	19	30	18	2	1
Agricultural sciences	133	72	107	58	25	14	1	-
Agricultural biotechnology	133	72	107	58	25	14	1	-
Tertiary education	**3236**	**1736**	**1991**	**995**	**854**	**486**	**391**	**255**
Natural sciences	473	302	321	195	13	7	139	100
Mathematics	430	283	286	180	5	3	139	100
Earth and related environmental sciences	43	19	35	15	8	4	-	-

3.1. Full-time and part-time researchers, by academic titles, sectors, field of science and sex, 2019
(head count) (continued)

	Full-time and part-time reasearchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Engineering and technology	1061	456	697	262	355	189	9	5
Civil engineering	41	17	32	12	-	-	9	5
Electrical engineering, electronic engineering and information engineering	819	300	518	159	301	141	-	-
Other technologies and engineering	201	139	147	91	54	48	-	-
Medical and health sciences	697	422	210	130	325	193	162	99
Other medical sciences	697	422	210	130	325	193	162	99
Agricultural sciences	232	107	173	81	25	13	34	13
Agriculture, forestry and fishery	232	107	173	81	25	13	34	13
Social sciences	738	430	563	310	128	82	47	38
Psychology	82	47	57	23	-	-	25	24
Economics and business	90	41	79	34	3	3	8	4
Educational sciences	99	64	75	43	18	15	6	6
Law	75	31	60	25	13	5	2	1
Other social sciences	392	247	292	185	94	59	6	3
Humanities	35	19	27	17	8	2	-	-
Art (art, history of arts, performing arts, music)	35	19	27	17	8	2	-	-
Region Šumadije i Zapadne Srbije	**1230**	**668**	**765**	**395**	**144**	**87**	**321**	**186**
Natural sciences	192	122	96	57	1	1	95	64
Engineering and technology	242	87	138	45	37	17	67	25
Medical and health sciences	298	163	193	102	13	10	92	51
Agricultural sciences	87	47	67	34	14	9	6	4
Social sciences	241	141	185	96	46	37	10	8
Humanities	170	108	86	61	33	13	51	34
Business sector	**54**	**15**	**14**	**3**	**20**	**7**	**20**	**5**
Natural sciences	2	1	-	-	-	-	2	1
Other natural sciences	2	1	-	-	-	-	2	1
Engineering and technology	49	13	12	3	20	7	17	3
Civil engineering	1	1	-	-	-	-	1	1
Electrical engineering, electronic engineering and information engineering	3	-	-	-	1	-	2	-
Mechanical engineering	3	-	-	-	-	-	3	-
Chemical engineering	14	4	-	-	9	4	5	-
Materials engineering	3	1	-	-	1	-	2	1
Medical engineering	24	7	12	3	8	3	4	1
Other technologies and engineering	1	-	-	-	1	-	-	-
Agricultural sciences	3	1	2	-	-	-	1	1
Agricultural biotechnology	3	1	2	-	-	-	1	1
Government sector	**20**	**14**	**17**	**12**	**3**	**2**	**-**	**-**
Agricultural sciences	20	14	17	12	3	2	-	-
Other agricultural sciences	20	14	17	12	3	2	-	-
Tertiary education	**1156**	**639**	**734**	**380**	**121**	**78**	**301**	**181**
Natural sciences	190	121	96	57	1	1	93	63
Mathematics	190	121	96	57	1	1	93	63
Engineering and technology	193	74	126	42	17	10	50	22
Electrical engineering, electronic engineering and information engineering	50	21	35	11	10	8	5	2
Mechanical engineering	117	41	72	22	5	1	40	18
Other technologies and engineering	26	12	19	9	2	1	5	2
Medical and health sciences	298	163	193	102	13	10	92	51
Basic medicine	298	163	193	102	13	10	92	51
Agricultural sciences	64	32	48	22	11	7	5	3
Agriculture, forestry and fishery	64	32	48	22	11	7	5	3
Social sciences	241	141	185	96	46	37	10	8
Economics and business	132	71	100	44	31	26	1	1
Educational sciences	19	14	18	14	1	-	-	-
Law	36	15	30	10	3	2	3	3
Other social sciences	54	41	37	28	11	9	6	4
Humanities	170	108	86	61	33	13	51	34
Languages and literature	170	108	86	61	33	13	51	34

3.1. Full-time and part-time researchers, by academic titles, sectors, field of science and sex, 2019 (head count) (continued)

	Full-time and part-time reasearchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Region Južne i Istočne Srbije	**1847**	**909**	**1289**	**632**	**319**	**170**	**239**	**107**
Natural sciences	231	127	149	79	78	46	4	2
Engineering and technology	746	301	463	186	135	61	148	54
Medical and health sciences	344	189	295	161	-	-	49	28
Agricultural sciences	12	5	10	4	2	1	-	-
Social sciences	243	121	216	98	13	11	14	12
Humanities	271	166	156	104	91	51	24	11
Business sector	**123**	**46**	**29**	**9**	**49**	**23**	**45**	**14**
Natural sciences	27	13	1	-	22	11	4	2
Computer and information sciences	6	3	1	-	1	1	4	2
Other natural sciences	21	10	-	-	21	10	-	-
Engineering and technology	84	28	18	5	25	11	41	12
Electrical engineering, electronic engineering and information engineering	74	25	18	5	22	10	34	10
Medical engineering	5	1	-	-	1	-	4	1
Environmental engineering	4	1	-	-	2	1	2	-
Other technologies and engineering	1	1	-	-	-	-	1	1
Agricultural sciences	12	5	10	4	2	1	-	-
Agricultural biotechnology	12	5	10	4	2	1	-	-
Government sector	**62**	**38**	**23**	**16**	**29**	**16**	**10**	**6**
Engineering and technology	62	38	23	16	29	16	10	6
Other technologies and engineering	62	38	23	16	29	16	10	6
Tertiary education	**1662**	**825**	**1237**	**607**	**241**	**131**	**184**	**87**
Natural sciences	204	114	148	79	56	35	-	-
Mathematics	204	114	148	79	56	35	-	-
Engineering and technology	600	235	422	165	81	34	97	36
Civil engineering	102	48	66	28	8	2	28	18
Electrical engineering, electronic engineering and information engineering	187	60	129	42	38	11	20	7
Mechanical engineering	104	23	78	18	-	-	26	5
Chemical engineering	62	34	48	24	13	9	1	1
Environmental engineering	51	23	39	18	-	-	12	5
Other technologies and engineering	94	47	62	35	22	12	10	-
Medical and health sciences	344	189	295	161	-	-	49	28
Basic medicine	344	189	295	161	-	-	49	28
Social sciences	243	121	216	98	13	11	14	12
Economics and business	86	54	81	49	3	3	2	2
Educational sciences	38	27	25	16	3	2	10	9
Law	70	24	68	23	-	-	2	1
Other social sciences	49	16	42	10	7	6	-	-
Humanities	271	166	156	104	91	51	24	11
Phylosophy, ethics and religion	170	115	124	83	44	30	2	2
Art (art, history of arts, performing arts, music)	101	51	32	21	47	21	22	9
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, 2019

	Full-time and part-time reasearchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	**14535,3**	**7578,6**	**9901,7**	**5087,9**	**2773,0**	**1537,9**	**1860,6**	**952,8**
Natural sciences	3787,8	2204,3	2419,8	1361,1	817,1	511,4	550,9	331,8
Engineering and technology	3855,0	1548,5	2285,8	920,6	922,1	428,8	647,1	199,1
Medical and health sciences	1993,8	1171,6	1463,8	834,5	281,5	174,9	248,5	162,2
Agricultural sciences	1135,7	604,6	923,3	499,6	121,4	58,0	91,0	47,0
Social sciences	2338,8	1233,1	1860,0	913,8	351,9	222,4	126,9	96,9
Humanities	1424,2	816,5	949,0	558,3	279,0	142,4	196,2	115,8
Business sector	**1401,1**	**554,1**	**364,3**	**158,5**	**351,5**	**156,7**	**685,3**	**238,9**
Natural sciences	494,7	208,7	118,4	40,2	128,8	50,4	247,5	118,1
Computer and information sciences	106,3	25,0	39,2	6,0	34,1	9,0	33,0	10,0
Chemical sciences	57,5	36,5	18,0	11,0	19,0	12,0	20,5	13,5
Earth and related environmental sciences	38,0	13,9	16,7	5,2	14,0	4,8	7,3	3,9
Other natural sciences	292,9	133,3	44,5	18,0	61,7	24,6	186,7	90,7
Engineering and technology	836,7	299,8	207,6	95,7	210,3	99,3	418,8	104,8
Civil engineering	4,3	2,0	-	-	0,3	-	4,0	2,0
Electrical engineering, electronic engineering and information engineering	319,3	103,1	75,6	27,9	78,2	37,0	165,5	38,2
Mechanical engineering	173,5	27,0	48,2	17,0	48,0	7,0	77,3	3,0
Chemical engineering	54,5	29,0	16,0	8,0	20,0	11,0	18,5	10,0
Materials engineering	5,8	2,6	1,0	-	2,6	2,0	2,2	0,6
Medical engineering	20,9	5,1	11,3	2,8	4,7	1,1	4,9	1,2
Environmental engineering	4,0	1,0	-	-	2,0	1,0	2,0	-
Environmental biotechnology	1,0	1,0	-	-	-	-	1,0	1,0
Other technologies and engineering	253,4	129,0	55,5	40,0	54,5	40,2	143,4	48,8
Medical and health sciences	9,2	8,0	1,2	1,0	1,0	1,0	7,0	6,0
Clinical medicine	2,2	2,0	1,2	1,0	1,0	1,0	-	-
Other medical sciences	7,0	6,0	-	-	-	-	7,0	6,0
Agricultural sciences	25,5	12,1	18,1	9,1	5,4	1,0	2,0	2,0
Veterinary sciences	1,0	-	-	-	1,0	-	-	-
Agricultural biotechnology	24,5	12,1	18,1	9,1	4,4	1,0	2,0	2,0
Social sciences	35,0	25,5	19,0	12,5	6,0	5,0	10,0	8,0
Economics and business	15,0	7,5	10,0	4,5	4,0	3,0	1,0	-
Other social sciences	20,0	18,0	9,0	8,0	2,0	2,0	9,0	8,0
Government sector	**3224,9**	**1971,7**	**2338,5**	**1405,2**	**751,9**	**477,9**	**134,5**	**88,6**
Natural sciences	1603,0	1027,1	1147,9	707,9	395,6	277,6	59,5	41,6
Mathematics	272,8	167,2	201,8	119,2	71,0	48,0	-	-
Physical sciences	662,8	371,5	473,2	252,7	170,7	102,8	18,9	16,0
Earth and related environmental sciences	13,0	-	7,0	-	6,0	-	-	-
Biological sciences	444,1	361,1	323,7	258,7	82,8	79,8	37,6	22,6
Other natural sciences	210,3	127,3	142,2	77,3	65,1	47,0	3,0	3,0
Engineering and technology	415,1	227,2	282,7	152,1	103,4	63,1	29,0	12,0
Civil engineering	30,0	21,0	21,0	14,0	9,0	7,0	-	-
Electrical engineering, electronic engineering and information engineering	46,0	16,0	29,0	11,0	6,0	1,0	11,0	4,0
Materials engineering	45,0	24,0	31,0	15,0	12,0	8,0	2,0	1,0
Environmental biotechnology	122,7	75,0	106,7	64,0	16,0	11,0	-	-
Industrial biotechnology	34,0	19,0	27,0	15,0	5,0	4,0	2,0	-
Other technologies and engineering	137,4	72,2	68,0	33,1	55,4	32,1	14,0	7,0
Medical and health sciences	133,5	106,4	93,0	75,0	32,5	24,4	8,0	7,0
Basic medicine	57,1	46,0	41,2	34,8	15,9	11,2	-	-
Other medical sciences	76,4	60,4	51,8	40,2	16,6	13,2	8,0	7,0
Agricultural sciences	360,2	218,0	289,2	181,0	51,0	22,0	20,0	15,0
Animal and dairy science	29,0	13,0	16,0	13,0	13,0	-	-	-
Veterinary sciences	19,0	11,0	17,0	9,0	2,0	2,0	-	-
Agricultural biotechnology	261,2	157,0	210,2	126,0	31,0	16,0	20,0	15,0
Other agricultural sciences	51,0	37,0	46,0	33,0	5,0	4,0	-	-
Social sciences	321,9	162,6	240,6	115,3	71,3	41,3	10,0	6,0
Psychology	69,0	34,0	54,0	25,0	15,0	9,0	-	-
Economics and business	58,0	36,0	41,0	23,0	17,0	13,0	-	-
Sociology	37,3	13,3	26,0	9,0	11,3	4,3	-	-
Law	47,3	23,0	33,3	17,0	13,0	5,0	1,0	1,0
Political science	86,3	36,3	66,3	24,3	11,0	7,0	9,0	5,0
Other social sciences	24,0	20,0	20,0	17,0	4,0	3,0	-	-

3.2. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, expressed in full-time equivalent, 2019 (continued)

	Full-time and part-time reasearchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Humanities	391,2	230,4	285,1	173,9	98,1	49,5	8,0	7,0
History and archeology	206,0	89,8	153,5	69,3	52,5	20,5	-	-
Languages and literature	110,6	82,0	76,0	56,0	26,6	19,0	8,0	7,0
Art (art, history of arts, performing arts, music)	20,0	16,0	12,0	10,0	8,0	6,0	-	-
Other humanities	54,6	42,6	43,6	38,6	11,0	4,0	-	-
Tertiary education	**9908,7**	**5052,2**	**7198,7**	**3524,0**	**1669,2**	**902,9**	**1040,8**	**625,3**
Natural sciences	1690,1	968,5	1153,5	613,0	292,7	183,4	243,9	172,1
Mathematics	971,2	577,8	606,3	344,3	128,2	66,4	236,7	167,1
Computer and information sciences	209,6	94,8	177,4	75,8	26,0	15,0	6,2	4,0
Physical sciences	49,0	19,5	33,0	10,5	16,0	9,0	-	-
Chemical sciences	164,0	94,0	120,0	60,0	44,0	34,0	-	-
Earth and related environmental sciences	89,8	46,4	62,3	29,4	26,5	16,0	1,0	1,0
Biological sciences	206,5	136,0	154,5	93,0	52,0	43,0	-	-
Engineering and technology	2603,2	1021,5	1795,5	672,8	608,4	266,4	199,3	82,3
Civil engineering	298,8	131,3	206,6	87,4	45,1	12,6	47,1	31,3
Electrical engineering, electronic engineering and information engineering	1189,4	425,8	781,8	242,3	353,6	165,5	54,0	18,0
Mechanical engineering	415,3	103,1	278,0	60,6	78,0	23,0	59,3	19,5
Chemical engineering	127,5	85,7	111,1	73,3	16,0	12,0	0,4	0,4
Environmental engineering	180,5	69,5	121,5	51,0	53,0	16,0	6,0	2,5
Other technologies and engineering	391,7	206,1	296,5	158,2	62,7	37,3	32,5	10,6
Medical and health sciences	1851,1	1057,2	1369,6	758,5	248,0	149,5	233,5	149,2
Basic medicine	1218,5	663,2	1045,3	560,5	77,0	45,2	96,2	57,5
Other medical sciences	632,6	394,0	324,3	198,0	171,0	104,3	137,3	91,7
Agricultural sciences	750,0	374,5	616,0	309,5	65,0	35,0	69,0	30,0
Agriculture, forestry and fishery	413,0	202,0	314,0	155,0	58,0	29,0	41,0	18,0
Veterinary sciences	79,8	48,5	64,8	43,5	-	-	15,0	5,0
Agricultural biotechnology	17,0	6,0	16,0	5,0	1,0	1,0	-	-
Other agricultural sciences	240,2	118,0	221,2	106,0	6,0	5,0	13,0	7,0
Social sciences	1981,3	1044,4	1600,2	785,8	274,2	175,7	106,9	82,9
Psychology	41,5	24,0	28,5	12,5	-	-	13,0	11,5
Economics and business	553,0	282,0	467,6	225,1	69,4	46,9	16,0	10,0
Educational sciences	286,8	179,6	231,2	130,8	18,4	14,1	37,2	34,7
Law	394,1	160,3	342,5	124,4	27,9	20,2	23,7	15,7
Political science	153,5	70,5	107,5	49,5	44,0	20,0	2,0	1,0
Media and communications	19,4	12,5	19,4	12,5	-	-	-	-
Other social sciences	533,0	315,5	403,5	231,0	114,5	74,5	15,0	10,0
Humanities	1033,0	586,1	663,9	384,4	180,9	92,9	188,2	108,8
Languages and literature	397,8	262,5	256,1	173,5	30,7	15,0	111,0	74,0
Phylosophy, ethics and religion	460,2	224,1	320,0	151,6	87,2	47,5	53,0	25,0
Art (art, history of arts, performing arts, music)	147,0	79,5	60,8	40,3	62,0	29,4	24,2	9,8
Other humanities	28,0	20,0	27,0	19,0	1,0	1,0	-	-
Non-profit sector	**0,6**	**0,6**	**0,2**	**0,2**	**0,4**	**0,4**	**-**	**-**
Social sciences	0,6	0,6	0,2	0,2	0,4	0,4	-	-
Law	0,6	0,6	0,2	0,2	0,4	0,4	-	-
Beogradski region	**8659,7**	**4518,7**	**6166,9**	**3197,5**	**1589,4**	**885,9**	**903,4**	**435,3**
Natural sciences	2664,3	1571,2	1824,4	1027,6	691,2	450,4	148,7	93,2
Engineering and technology	1929,0	736,9	1102,3	446,4	398,1	165,5	428,6	125,0
Medical and health sciences	1160,6	684,1	973,0	556,9	109,0	68,6	78,6	58,6
Agricultural sciences	666,2	370,5	562,2	319,5	54,0	21,0	50,0	30,0
Social sciences	1276,3	626,7	1016,8	466,0	184,8	103,0	74,7	57,7
Humanities	963,3	529,3	688,2	381,1	152,3	77,4	122,8	70,8
Business sector	**944,1**	**388,9**	**276,1**	**136,3**	**239,4**	**114,0**	**428,6**	**138,6**
Natural sciences	211,5	99,6	73,4	32,2	67,1	28,8	71,0	38,6
Computer and information sciences	18,3	5,0	0,2	-	6,1	3,0	12,0	2,0
Chemical sciences	54,0	34,0	18,0	11,0	17,0	10,0	19,0	13,0
Earth and related environmental sciences	34,0	12,9	16,7	5,2	10,0	3,8	7,3	3,9
Other natural sciences	105,2	47,7	38,5	16,0	34,0	12,0	32,7	19,7

3.2. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, expressed in full-time equivalent, 2019 (continued)

	Full-time and part-time reasearchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Engineering and technology	683,4	252,8	180,5	88,6	163,3	79,2	339,6	85,0
Civil engineering	3,3	1,0	-	-	0,3	-	3,0	1,0
Electrical engineering, electronic engineering and information engineering	215,0	70,8	60,8	23,6	50,5	25,0	103,7	22,2
Mechanical engineering	169,7	27,0	48,2	17,0	48,0	7,0	73,5	3,0
Chemical engineering	43,0	25,0	16,0	8,0	11,0	7,0	16,0	10,0
Environmental biotechnology	1,0	1,0	-	-	-	-	1,0	1,0
Other technologies and engineering	251,4	128,0	55,5	40,0	53,5	40,2	142,4	47,8
Medical and health sciences	9,2	8,0	1,2	1,0	1,0	1,0	7,0	6,0
Clinical medicine	2,2	2,0	1,2	1,0	1,0	1,0	-	-
Other medical sciences	7,0	6,0	-	-	-	-	7,0	6,0
Agricultural sciences	5,0	3,0	2,0	2,0	2,0	-	1,0	1,0
Veterinary sciences	1,0	-	-	-	1,0	-	-	-
Agricultural biotechnology	4,0	3,0	2,0	2,0	1,0	-	1,0	1,0
Social sciences	35,0	25,5	19,0	12,5	6,0	5,0	10,0	8,0
Economics and business	15,0	7,5	10,0	4,5	4,0	3,0	1,0	-
Other social sciences	20,0	18,0	9,0	8,0	2,0	2,0	9,0	8,0
Government sector	**2856,8**	**1757,5**	**2082,8**	**1257,1**	**652,5**	**418,8**	**121,5**	**81,6**
Natural sciences	1603,0	1027,1	1147,9	707,9	395,6	277,6	59,5	41,6
Mathematics	272,8	167,2	201,8	119,2	71,0	48,0	-	-
Physical sciences	662,8	371,5	473,2	252,7	170,7	102,8	18,9	16,0
Earth and related environmental sciences	13,0	-	7,0	-	6,0	-	-	-
Biological sciences	444,1	361,1	323,7	258,7	82,8	79,8	37,6	22,6
Other natural sciences	210,3	127,3	142,2	77,3	65,1	47,0	3,0	3,0
Engineering and technology	200,0	99,0	151,0	74,0	32,0	20,0	17,0	5,0
Civil engineering	30,0	21,0	21,0	14,0	9,0	7,0	-	-
Electrical engineering, electronic engineering and information engineering	46,0	16,0	29,0	11,0	6,0	1,0	11,0	4,0
Materials engineering	45,0	24,0	31,0	15,0	12,0	8,0	2,0	1,0
Environmental biotechnology	34,0	19,0	34,0	19,0	-	-	-	-
Industrial biotechnology	34,0	19,0	27,0	15,0	5,0	4,0	2,0	-
Other technologies and engineering	11,0	-	9,0	-	-	-	2,0	-
Medical and health sciences	133,5	106,4	93,0	75,0	32,5	24,4	8,0	7,0
Basic medicine	57,1	46,0	41,2	34,8	15,9	11,2	-	-
Other medical sciences	76,4	60,4	51,8	40,2	16,6	13,2	8,0	7,0
Agricultural sciences	207,2	132,0	165,2	111,0	23,0	6,0	19,0	15,0
Animal and dairy science	29,0	13,0	16,0	13,0	13,0	-	-	-
Veterinary sciences	19,0	11,0	17,0	9,0	2,0	2,0	-	-
Agricultural biotechnology	128,2	85,0	103,2	68,0	6,0	2,0	19,0	15,0
Other agricultural sciences	31,0	23,0	29,0	21,0	2,0	2,0	-	-
Social sciences	321,9	162,6	240,6	115,3	71,3	41,3	10,0	6,0
Psychology	69,0	34,0	54,0	25,0	15,0	9,0	-	-
Economics and business	58,0	36,0	41,0	23,0	17,0	13,0	-	-
Sociology	37,3	13,3	26,0	9,0	11,3	4,3	-	-
Law	47,3	23,0	33,3	17,0	13,0	5,0	1,0	1,0
Political science	86,3	36,3	66,3	24,3	11,0	7,0	9,0	5,0
Other social sciences	24,0	20,0	20,0	17,0	4,0	3,0	-	-
Humanities	391,2	230,4	285,1	173,9	98,1	49,5	8,0	7,0
History and archeology	206,0	89,8	153,5	69,3	52,5	20,5	-	-
Languages and literature	110,6	82,0	76,0	56,0	26,6	19,0	8,0	7,0
Art (art, history of arts, performing arts, music)	20,0	16,0	12,0	10,0	8,0	6,0	-	-
Other humanities	54,6	42,6	43,6	38,6	11,0	4,0	-	-
Tertiary education	**4858,2**	**2371,7**	**3807,8**	**1803,9**	**697,1**	**352,7**	**353,3**	**215,1**
Natural sciences	849,8	444,5	603,1	287,5	228,5	144,0	18,2	13,0
Mathematics	159,0	66,5	80,0	29,5	68,0	29,0	11,0	8,0
Computer and information sciences	209,6	94,8	177,4	75,8	26,0	15,0	6,2	4,0
Physical sciences	49,0	19,5	33,0	10,5	16,0	9,0	-	-
Chemical sciences	164,0	94,0	120,0	60,0	44,0	34,0	-	-
Earth and related environmental sciences	61,7	33,7	38,2	18,7	22,5	14,0	1,0	1,0
Biological sciences	206,5	136,0	154,5	93,0	52,0	43,0	-	-

3.2. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, expressed in full-time equivalent, 2019 (continued)

	Full-time and part-time reasearchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Engineering and technology	1045,6	385,1	770,8	283,8	202,8	66,3	72,0	35,0
Civil engineering	219,5	95,0	154,8	67,0	42,7	12,0	22,0	16,0
Electrical engineering, electronic engineering and information engineering	191,3	54,6	139,7	35,3	22,6	10,3	29,0	9,0
Mechanical engineering	251,0	58,0	178,0	36,0	73,0	22,0	-	-
Chemical engineering	67,1	52,3	64,1	49,3	3,0	3,0	-	-
Environmental engineering	155,0	58,0	102,0	42,0	53,0	16,0	-	-
Other technologies and engineering	161,7	67,2	132,2	54,2	8,5	3,0	21,0	10,0
Medical and health sciences	1017,9	569,7	878,8	480,9	75,5	43,2	63,6	45,6
Basic medicine	762,3	406,1	679,8	359,9	70,5	40,2	12,0	6,0
Other medical sciences	255,6	163,6	199,0	121,0	5,0	3,0	51,6	39,6
Agricultural sciences	454,0	235,5	395,0	206,5	29,0	15,0	30,0	14,0
Agriculture, forestry and fishery	117,0	63,0	93,0	52,0	22,0	9,0	2,0	2,0
Veterinary sciences	79,8	48,5	64,8	43,5	-	-	15,0	5,0
Agricultural biotechnology	17,0	6,0	16,0	5,0	1,0	1,0	-	-
Other agricultural sciences	240,2	118,0	221,2	106,0	6,0	5,0	13,0	7,0
Social sciences	918,8	438,0	757,0	338,0	107,1	56,3	54,7	43,7
Economics and business	255,1	120,1	213,8	99,3	36,3	17,8	5,0	3,0
Educational sciences	184,9	108,4	154,9	81,7	2,3	1,0	27,7	25,7
Law	265,4	112,5	226,9	85,0	21,5	16,5	17,0	11,0
Political science	153,5	70,5	107,5	49,5	44,0	20,0	2,0	1,0
Media and communications	19,4	12,5	19,4	12,5	-	-	-	-
Other social sciences	40,5	14,0	34,5	10,0	3,0	1,0	3,0	3,0
Humanities	572,1	298,9	403,1	207,2	54,2	27,9	114,8	63,8
Languages and literature	234,1	156,0	171,1	113,0	3,0	3,0	60,0	40,0
Phylosophy, ethics and religion	290,2	109,1	196,0	68,6	43,2	17,5	51,0	23,0
Art (art, history of arts, performing arts, music)	19,8	13,8	9,0	6,6	7,0	6,4	3,8	0,8
Other humanities	28,0	20,0	27,0	19,0	1,0	1,0	-	-
Non-profit sector	**0,6**	**0,6**	**0,2**	**0,2**	**0,4**	**0,4**	**-**	**-**
Social sciences	0,6	0,6	0,2	0,2	0,4	0,4	-	-
Law	0,6	0,6	0,2	0,2	0,4	0,4	-	-
Region Vojvodine	**3231,5**	**1682,9**	**1974,4**	**994,9**	**755,7**	**412,9**	**501,4**	**275,1**
Natural sciences	709,6	389,9	352,6	198,7	51,0	17,2	306,0	174,0
Engineering and technology	1125,1	495,4	719,7	294,1	364,2	189,3	41,2	12,0
Medical and health sciences	377,0	230,4	125,3	77,0	166,0	101,3	85,7	52,1
Agricultural sciences	370,5	182,1	284,1	142,1	51,4	27,0	35,0	13,0
Social sciences	614,8	366,6	466,2	266,5	115,1	76,1	33,5	24,0
Humanities	34,5	18,5	26,5	16,5	8,0	2,0	-	-
Business sector	**301,4**	**110,6**	**49,1**	**11,1**	**51,6**	**17,0**	**200,7**	**82,5**
Natural sciences	257,5	97,5	44,0	8,0	43,0	13,0	170,5	76,5
Computer and information sciences	82,0	17,0	38,0	6,0	27,0	5,0	17,0	6,0
Chemical sciences	3,5	2,5	-	-	2,0	2,0	1,5	0,5
Earth and related environmental sciences	4,0	1,0	-	-	4,0	1,0	-	-
Other natural sciences	168,0	77,0	6,0	2,0	10,0	5,0	152,0	70,0
Engineering and technology	38,4	10,0	1,0	-	7,2	4,0	30,2	6,0
Electrical engineering, electronic engineering and information engineering	32,4	8,0	-	-	5,2	2,0	27,2	6,0
Mechanical engineering	2,0	-	-	-	-	-	2,0	-
Materials engineering	4,0	2,0	1,0	-	2,0	2,0	1,0	-
Agricultural sciences	5,5	3,1	4,1	3,1	1,4	-	-	-
Agricultural biotechnology	5,5	3,1	4,1	3,1	1,4	-	-	-
Government sector	**286,1**	**162,2**	**215,7**	**120,1**	**67,4**	**41,1**	**3,0**	**1,0**
Engineering and technology	153,1	90,2	108,7	62,1	42,4	27,1	2,0	1,0
Environmental biotechnology	88,7	56,0	72,7	45,0	16,0	11,0	-	-
Other technologies and engineering	64,4	34,2	36,0	17,1	26,4	16,1	2,0	1,0
Agricultural sciences	133,0	72,0	107,0	58,0	25,0	14,0	1,0	-
Agricultural biotechnology	133,0	72,0	107,0	58,0	25,0	14,0	1,0	-
Tertiary education	**2644,0**	**1410,1**	**1709,6**	**863,7**	**636,7**	**354,8**	**297,7**	**191,6**
Natural sciences	452,1	292,4	308,6	190,7	8,0	4,2	135,5	97,5
Mathematics	424,0	279,7	284,5	180,0	4,0	2,2	135,5	97,5
Earth and related environmental sciences	28,1	12,7	24,1	10,7	4,0	2,0	-	-

3.2. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, expressed in full-time equivalent, 2019 (continued)

	Full-time and part-time reasearchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Engineering and technology	933,6	395,2	610,0	232,0	314,6	158,2	9,0	5,0
Civil engineering	41,0	17,0	32,0	12,0	-	-	9,0	5,0
Electrical engineering, electronic engineering and information engineering	763,0	290,2	480,0	154,0	283,0	136,2	-	-
Other technologies and engineering	129,6	88,0	98,0	66,0	31,6	22,0	-	-
Medical and health sciences	377,0	230,4	125,3	77,0	166,0	101,3	85,7	52,1
Other medical sciences	377,0	230,4	125,3	77,0	166,0	101,3	85,7	52,1
Agricultural sciences	232,0	107,0	173,0	81,0	25,0	13,0	34,0	13,0
Agriculture, forestry and fishery	232,0	107,0	173,0	81,0	25,0	13,0	34,0	13,0
Social sciences	614,8	366,6	466,2	266,5	115,1	76,1	33,5	24,0
Psychology	41,5	24,0	28,5	12,5	-	-	13,0	11,5
Economics and business	85,9	39,9	75,4	33,4	2,5	2,5	8,0	4,0
Educational sciences	63,9	43,7	45,8	27,1	13,6	12,1	4,5	4,5
Law	33,5	14,0	26,5	10,5	5,0	2,5	2,0	1,0
Other social sciences	390,0	245,0	290,0	183,0	94,0	59,0	6,0	3,0
Humanities	34,5	18,5	26,5	16,5	8,0	2,0	-	-
Art (art, history of arts, performing arts, music)	34,5	18,5	26,5	16,5	8,0	2,0	-	-
Region Šumadije i Zapadne Srbije	**932,8**	**532,8**	**570,7**	**308,2**	**119,3**	**73,9**	**242,8**	**150,7**
Natural sciences	186,4	118,8	94,0	56,0	0,2	0,2	92,2	62,6
Engineering and technology	152,2	56,7	73,1	23,4	30,4	14,4	48,7	18,9
Medical and health sciences	113,0	68,8	71,3	40,3	6,5	5,0	35,2	23,5
Agricultural sciences	87,0	47,0	67,0	34,0	14,0	9,0	6,0	4,0
Social sciences	230,5	135,0	180,3	94,0	40,5	33,3	9,7	7,7
Humanities	163,7	106,5	85,0	60,5	27,7	12,0	51,0	34,0
Business sector	**40,0**	**11,7**	**13,3**	**2,8**	**14,8**	**5,1**	**11,9**	**3,8**
Natural sciences	2,0	1,0	-	-	-	-	2,0	1,0
Other natural sciences	2,0	1,0	-	-	-	-	2,0	1,0
Engineering and technology	35,0	9,7	11,3	2,8	14,8	5,1	8,9	1,8
Civil engineering	1,0	1,0	-	-	-	-	1,0	1,0
Electrical engineering, electronic engineering and information engineering	2,0	-	-	-	0,5	-	1,5	-
Mechanical engineering	1,8	-	-	-	-	-	1,8	-
Chemical engineering	11,5	4,0	-	-	9,0	4,0	2,5	-
Materials engineering	1,8	0,6	-	-	0,6	-	1,2	0,6
Medical engineering	15,9	4,1	11,3	2,8	3,7	1,1	0,9	0,2
Other technologies and engineering	1,0	-	-	-	1,0	-	-	-
Agricultural sciences	3,0	1,0	2,0	-	-	-	1,0	1,0
Agricultural biotechnology	3,0	1,0	2,0	-	-	-	1,0	1,0
Government sector	**20,0**	**14,0**	**17,0**	**12,0**	**3,0**	**2,0**	**-**	**-**
Agricultural sciences	20,0	14,0	17,0	12,0	3,0	2,0	-	-
Other agricultural sciences	20,0	14,0	17,0	12,0	3,0	2,0	-	-
Tertiary education	**872,8**	**507,1**	**540,4**	**293,4**	**101,5**	**66,8**	**230,9**	**146,9**
Natural sciences	184,4	117,8	94,0	56,0	0,2	0,2	90,2	61,6
Mathematics	184,4	117,8	94,0	56,0	0,2	0,2	90,2	61,6
Engineering and technology	117,2	47,0	61,8	20,6	15,6	9,3	39,8	17,1
Electrical engineering, electronic engineering and information engineering	49,0	21,0	34,0	11,0	10,0	8,0	5,0	2,0
Mechanical engineering	60,3	22,1	22,0	6,6	5,0	1,0	33,3	14,5
Other technologies and engineering	7,9	3,9	5,8	3,0	0,6	0,3	1,5	0,6
Medical and health sciences	113,0	68,8	71,3	40,3	6,5	5,0	35,2	23,5
Basic medicine	113,0	68,8	71,3	40,3	6,5	5,0	35,2	23,5
Agricultural sciences	64,0	32,0	48,0	22,0	11,0	7,0	5,0	3,0
Agriculture, forestry and fishery	64,0	32,0	48,0	22,0	11,0	7,0	5,0	3,0
Social sciences	230,5	135,0	180,3	94,0	40,5	33,3	9,7	7,7
Economics and business	127,2	68,6	98,6	44,0	27,6	23,6	1,0	1,0
Educational sciences	19,0	14,0	18,0	14,0	1,0	-	-	-
Law	30,8	11,9	26,7	8,0	1,4	1,2	2,7	2,7
Other social sciences	53,5	40,5	37,0	28,0	10,5	8,5	6,0	4,0
Humanities	163,7	106,5	85,0	60,5	27,7	12,0	51,0	34,0
Languages and literature	163,7	106,5	85,0	60,5	27,7	12,0	51,0	34,0

3.2. Full-time and part-time researchers, by academic titles, sectors, fields of science and sex, expressed in full-time equivalent, 2019 (continued)

	Full-time and part-time reasearchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Region Južne i Istočne Srbije	**1711,3**	**844,2**	**1189,7**	**587,3**	**308,6**	**165,2**	**213,0**	**91,7**
Natural sciences	227,5	124,4	148,8	78,8	74,7	43,6	4,0	2,0
Engineering and technology	648,7	259,5	390,7	156,7	129,4	59,6	128,6	43,2
Medical and health sciences	343,2	188,3	294,2	160,3	-	-	49,0	28,0
Agricultural sciences	12,0	5,0	10,0	4,0	2,0	1,0	-	-
Social sciences	217,2	104,8	196,7	87,3	11,5	10,0	9,0	7,5
Humanities	262,7	162,2	149,3	100,2	91,0	51,0	22,4	11,0
Business sector	**115,6**	**42,9**	**25,8**	**8,3**	**45,7**	**20,6**	**44,1**	**14,0**
Natural sciences	23,7	10,6	1,0	-	18,7	8,6	4,0	2,0
Computer and information sciences	6,0	3,0	1,0	-	1,0	1,0	4,0	2,0
Other natural sciences	17,7	7,6	-	-	17,7	7,6	-	-
Engineering and technology	79,9	27,3	14,8	4,3	25,0	11,0	40,1	12,0
Electrical engineering, electronic engineering and information engineering	69,9	24,3	14,8	4,3	22,0	10,0	33,1	10,0
Medical engineering	5,0	1,0	-	-	1,0	-	4,0	1,0
Environmental engineering	4,0	1,0	-	-	2,0	1,0	2,0	-
Other technologies and engineering	1,0	1,0	-	-	-	-	1,0	1,0
Agricultural sciences	12,0	5,0	10,0	4,0	2,0	1,0	-	-
Agricultural biotechnology	12,0	5,0	10,0	4,0	2,0	1,0	-	-
Government sector	**62,0**	**38,0**	**23,0**	**16,0**	**29,0**	**16,0**	**10,0**	**6,0**
Engineering and technology	62,0	38,0	23,0	16,0	29,0	16,0	10,0	6,0
Other technologies and engineering	62,0	38,0	23,0	16,0	29,0	16,0	10,0	6,0
Tertiary education	**1533,7**	**763,3**	**1140,9**	**563,0**	**233,9**	**128,6**	**158,9**	**71,7**
Natural sciences	203,8	113,8	147,8	78,8	56,0	35,0	-	-
Mathematics	203,8	113,8	147,8	78,8	56,0	35,0	-	-
Engineering and technology	506,8	194,2	352,9	136,4	75,4	32,6	78,5	25,2
Civil engineering	38,3	19,3	19,8	8,4	2,4	0,6	16,1	10,3
Electrical engineering, electronic engineering and information engineering	186,1	60,0	128,1	42,0	38,0	11,0	20,0	7,0
Mechanical engineering	104,0	23,0	78,0	18,0	-	-	26,0	5,0
Chemical engineering	60,4	33,4	47,0	24,0	13,0	9,0	0,4	0,4
Environmental engineering	25,5	11,5	19,5	9,0	-	-	6,0	2,5
Other technologies and engineering	92,5	47,0	60,5	35,0	22,0	12,0	10,0	-
Medical and health sciences	343,2	188,3	294,2	160,3	-	-	49,0	28,0
Basic medicine	343,2	188,3	294,2	160,3	-	-	49,0	28,0
Social sciences	217,2	104,8	196,7	87,3	11,5	10,0	9,0	7,5
Economics and business	84,8	53,4	79,8	48,4	3,0	3,0	2,0	2,0
Educational sciences	19,0	13,5	12,5	8,0	1,5	1,0	5,0	4,5
Law	64,4	21,9	62,4	20,9	-	-	2,0	1,0
Other social sciences	49,0	16,0	42,0	10,0	7,0	6,0	-	-
Humanities	262,7	162,2	149,3	100,2	91,0	51,0	22,4	11,0
Phylosophy, ethics and religion	170,0	115,0	124,0	83,0	44,0	30,0	2,0	2,0
Art (art, history of arts, performing arts, music)	92,7	47,2	25,3	17,2	47,0	21,0	20,4	9,0
Region Kosovo i Metohija	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**

4.1. Full-time and part-time researchers and assistant-researchers, by age and sex, 2019

	Researchers				Assistant-researchers			
	Full-time		Part-time		Full-time		Part-time	
	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	**13411**	**6992**	**2988**	**1526**	**1559**	**801**	**288**	**133**
Under 25	220	113	67	25	38	25	3	1
25–34	3491	1869	457	254	388	200	108	50
35–44	3767	2122	837	439	517	256	65	28
45–54	3285	1743	846	456	371	197	53	26
55–64	2346	1048	694	331	217	109	44	25
65 and over	302	97	87	21	28	14	15	3
Business sector	**1321**	**532**	**162**	**48**	**533**	**194**	**166**	**50**
Under 25	19	6	13	7	14	8	2	-
25–34	517	220	33	13	129	46	62	22
35–44	368	178	47	13	194	66	33	8
45–54	245	89	29	10	110	45	26	6
55–64	138	38	21	3	73	28	30	12
65 and over	34	1	19	2	13	1	13	2
Government sector	**3176**	**1943**	**116**	**65**	**292**	**152**	**13**	**12**
Under 25	14	8	3	1	1	-	-	-
25–34	771	499	26	18	27	8	9	8
35–44	1078	696	23	8	90	52	3	3
45–54	820	519	34	20	107	54	-	-
55–64	457	209	27	17	64	36	1	1
65 and over	36	12	3	1	3	2	-	-
Tertiary education	**8914**	**4517**	**2707**	**1410**	**734**	**455**	**109**	**71**
Under 25	187	99	51	17	23	17	1	1
25–34	2203	1150	397	222	232	146	37	20
35–44	2321	1248	766	417	233	138	29	17
45–54	2220	1135	783	426	154	98	27	20
55–64	1751	801	645	310	80	45	13	12
65 and over	232	84	65	18	12	11	2	1
Non-profit sector	**-**	**-**	**3**	**3**	**-**	**-**	**-**	**-**
25–34	-	-	1	1	-	-	-	-
35–44	-	-	1	1	-	-	-	-
55–64	-	-	1	1	-	-	-	-
Beogradski region	**8236**	**4304**	**1238**	**616**	**1041**	**555**	**162**	**57**
Under 25	125	55	15	8	21	14	2	1
25–34	2006	1135	144	77	214	105	66	23
35–44	2313	1291	331	157	349	194	32	10
45–54	2095	1131	358	191	270	148	30	11
55–64	1510	629	340	170	161	82	20	10
65 and over	187	63	50	13	26	12	12	2
Business sector	**898**	**380**	**91**	**20**	**371**	**138**	**114**	**27**
Under 25	13	6	-	-	8	4	1	-
25–34	350	158	6	2	66	20	37	9
35–44	276	139	37	10	132	53	26	4
45–54	127	47	19	4	92	37	22	5
55–64	101	29	13	2	61	24	17	7
65 and over	31	1	16	2	12	-	11	2
Government sector	**2817**	**1733**	**98**	**57**	**233**	**122**	**1**	**1**
Under 25	11	6	-	-	1	-	-	-
25–34	672	438	20	13	16	5	-	-
35–44	953	623	19	8	76	43	-	-
45–54	725	463	30	19	86	45	-	-
55–64	422	191	26	16	51	27	1	1
65 and over	34	12	3	1	3	2	-	-
Tertiary education	**4521**	**2191**	**1046**	**536**	**437**	**295**	**47**	**29**
Under 25	101	43	15	8	12	10	1	1
25–34	984	539	117	61	132	80	29	14
35–44	1084	529	274	138	141	98	6	6
45–54	1243	621	309	168	92	66	8	6
55–64	987	409	300	151	49	31	2	2
65 and over	122	50	31	10	11	10	1	-

4.1. Full-time and part-time researchers and assistant-researchers, by age and sex, 2019 (continued)

	Researchers				Assistant-researchers			
	Full-time		Part-time		Full-time		Part-time	
	All	Women	All	Women	All	Women	All	Women
Non-profit sector	**-**	**-**	**3**	**3**	**-**	**-**	**-**	**-**
25–34	-	-	1	1	-	-	-	-
35–44	-	-	1	1	-	-	-	-
55–64	-	-	1	1	-	-	-	-
Region Vojvodine	**2797**	**1444**	**1051**	**577**	**307**	**143**	**65**	**41**
Under 25	57	32	46	16	6	3	-	-
25–34	922	421	150	87	114	58	33	20
35–44	815	488	319	183	121	46	13	10
45–54	570	294	307	177	52	28	4	2
55–64	373	189	213	109	14	8	15	9
65 and over	60	20	16	5	-	-	-	-
Business sector	**287**	**101**	**30**	**18**	**121**	**39**	**39**	**20**
Under 25	6	-	9	7	5	3	-	-
25–34	104	32	8	3	58	24	24	12
35–44	67	31	3	1	52	8	3	3
45–54	85	31	7	6	4	3	1	-
55–64	25	7	2	1	2	1	11	5
65 and over	-	-	1	-	-	-	-	-
Government sector	**277**	**158**	**18**	**8**	**37**	**20**	**12**	**11**
Under 25	2	1	3	1	-	-	-	-
25–34	75	48	6	5	11	3	9	8
35–44	109	63	4	-	13	9	3	3
45–54	66	35	4	1	9	5	-	-
55–64	24	11	1	1	4	3	-	-
65 and over	1	-	-	-	-	-	-	-
Tertiary education	**2233**	**1185**	**1003**	**551**	**149**	**84**	**14**	**10**
Under 25	49	31	34	8	1	-	-	-
25–34	743	341	136	79	45	31	-	-
35–44	639	394	312	182	56	29	7	4
45–54	419	228	296	170	39	20	3	2
55–64	324	171	210	107	8	4	4	4
65 and over	59	20	15	5	-	-	-	-
Region Šumadije i Zapadne Srbije	**759**	**443**	**471**	**225**	**65**	**35**	**49**	**27**
Under 25	23	17	6	1	-	-	1	-
25–34	214	130	125	72	25	17	9	7
35–44	202	113	122	61	18	8	15	4
45–54	177	107	120	59	9	3	13	9
55–64	132	72	87	30	12	6	9	6
65 and over	11	4	11	2	1	1	2	1
Business sector	**28**	**9**	**26**	**6**	**9**	**4**	**12**	**3**
Under 25	-	-	4	-	-	-	1	-
25–34	12	5	11	5	2	1	1	1
35–44	6	2	2	1	1	1	4	1
45–54	6	1	2	-	4	2	3	1
55–64	4	1	5	-	2	-	2	-
65 and over	-	-	2	-	-	-	1	-
Government sector	**20**	**14**	**-**	**-**	**1**	**1**	**-**	**-**
25–34	3	2	-	-	-	-	-	-
35–44	6	4	-	-	-	-	-	-
45–54	9	6	-	-	-	-	-	-
55–64	2	2	-	-	1	1	-	-
Tertiary education	**711**	**420**	**445**	**219**	**55**	**30**	**37**	**24**
Under 25	23	17	2	1	-	-	-	-
25–34	199	123	114	67	23	16	8	6
35–44	190	107	120	60	17	7	11	3
45–54	162	100	118	59	5	1	10	8
55–64	126	69	82	30	9	5	7	6
65 and over	11	4	9	2	1	1	1	1

4.1. Full-time and part-time researchers and assistant-researchers, by age and sex, 2019 (continued)

	Researchers				Assistant-researchers			
	Full-time		Part-time		Full-time		Part-time	
	All	Women	All	Women	All	Women	All	Women
Region Južne i Istočne Srbije	**1619**	**801**	**228**	**108**	**146**	**68**	**12**	**8**
Under 25	15	9	-	-	11	8	-	-
25–34	349	183	38	18	35	20	-	-
35–44	437	230	65	38	29	8	5	4
45–54	443	211	61	29	40	18	6	4
55–64	331	158	54	22	30	13	-	-
65 and over	44	10	10	1	1	1	1	-
Business sector	**108**	**42**	**15**	**4**	**32**	**13**	**1**	**-**
Under 25	-	-	-	-	1	1	-	-
25–34	51	25	8	3	3	1	-	-
35–44	19	6	5	1	9	4	-	-
45–54	27	10	1	-	10	3	-	-
55–64	8	1	1	-	8	3	-	-
65 and over	3	-	-	-	1	1	1	-
Government sector	**62**	**38**	**-**	**-**	**21**	**9**	**-**	**-**
Under 25	1	1	-	-	-	-	-	-
25–34	21	11	-	-	-	-	-	-
35–44	10	6	-	-	1	-	-	-
45–54	20	15	-	-	12	4	-	-
55–64	9	5	-	-	8	5	-	-
65 and over	1	-	-	-	-	-	-	-
Tertiary education	**1449**	**721**	**213**	**104**	**93**	**46**	**11**	**8**
Under 25	14	8	-	-	10	7	-	-
25–34	277	147	30	15	32	19	-	-
35–44	408	218	60	37	19	4	5	4
45–54	396	186	60	29	18	11	6	4
55–64	314	152	53	22	14	5	-	-
65 and over	40	10	10	1	-	-	-	-
Region Kosovo i Metohija	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**

5.1. Full-time and part-time assistant-researchers, by academic titles, sectors, fields of science and sex, 2019

(head count)

	Full-time and part-time assistant-researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	**1847**	**934**	**210**	**101**	**424**	**196**	**1213**	**637**
Natural sciences	574	252	77	20	139	55	358	177
Engineering and technology	435	159	45	21	106	34	284	104
Medical and health sciences	129	93	9	8	14	8	106	77
Agricultural sciences	278	149	16	11	45	23	217	115
Social sciences	247	151	52	32	64	35	131	84
Humanities	184	130	11	9	56	41	117	80
Business sector	**699**	**244**	**100**	**33**	**147**	**38**	**452**	**173**
Natural sciences	324	112	58	14	84	23	182	75
Engineering and technology	265	71	29	13	48	5	188	53
Medical and health sciences	39	30	4	3	8	5	27	22
Agricultural sciences	57	25	4	1	4	3	49	21
Social sciences	14	6	5	2	3	2	6	2
Government sector	**305**	**164**	**26**	**13**	**68**	**35**	**211**	**116**
Natural sciences	85	38	13	4	12	7	60	27
Engineering and technology	77	41	4	1	32	16	41	24
Medical and health sciences	3	3	1	1	1	1	1	1
Agricultural sciences	135	78	7	6	22	10	106	62
Social sciences	4	3	1	1	1	1	2	1
Humanities	1	1	-	-	-	-	1	1
Tertiary education	**843**	**526**	**84**	**55**	**209**	**123**	**550**	**348**
Natural sciences	165	102	6	2	43	25	116	75
Engineering and technology	93	47	12	7	26	13	55	27
Medical and health sciences	87	60	4	4	5	2	78	54
Agricultural sciences	86	46	5	4	19	10	62	32
Social sciences	229	142	46	29	60	32	123	81
Humanities	183	129	11	9	56	41	116	79
Beogradski region	**1203**	**612**	**134**	**76**	**302**	**142**	**767**	**394**
Natural sciences	385	182	22	9	110	47	253	126
Engineering and technology	260	84	34	15	64	20	162	49
Medical and health sciences	74	54	5	4	10	6	59	44
Agricultural sciences	220	118	15	10	34	17	171	91
Social sciences	129	73	47	29	55	28	27	16
Humanities	135	101	11	9	29	24	95	68
Business sector	**485**	**165**	**41**	**19**	**106**	**27**	**338**	**119**
Natural sciences	201	73	3	3	56	16	142	54
Engineering and technology	213	56	28	13	40	5	145	38
Medical and health sciences	29	20	1	-	6	3	22	17
Agricultural sciences	28	10	4	1	1	1	23	8
Social sciences	14	6	5	2	3	2	6	2
Government sector	**234**	**123**	**24**	**11**	**34**	**19**	**176**	**93**
Natural sciences	85	38	13	4	12	7	60	27
Engineering and technology	22	12	3	-	6	4	13	8
Medical and health sciences	3	3	1	1	1	1	1	1
Agricultural sciences	119	66	6	5	14	6	99	55
Social sciences	4	3	1	1	1	1	2	1
Humanities	1	1	-	-	-	-	1	1
Tertiary education	**484**	**324**	**69**	**46**	**162**	**96**	**253**	**182**
Natural sciences	99	71	6	2	42	24	51	45
Engineering and technology	25	16	3	2	18	11	4	3
Medical and health sciences	42	31	3	3	3	2	36	26
Agricultural sciences	73	42	5	4	19	10	49	28
Social sciences	111	64	41	26	51	25	19	13
Humanities	134	100	11	9	29	24	94	67
Region Vojvodine	**372**	**184**	**57**	**15**	**71**	**27**	**244**	**142**
Natural sciences	160	59	52	10	29	8	79	41
Engineering and technology	48	23	1	1	27	10	20	12
Medical and health sciences	10	10	3	3	2	2	5	5
Agricultural sciences	46	23	1	1	9	4	36	18
Social sciences	99	65	-	-	4	3	95	62
Humanities	9	4	-	-	-	-	9	4

5.1. Full-time and part-time assistant-researchers, by academic titles, sectors, fields of science and sex, 2019
(head count) (continued)

	Full-time and part-time assistant-researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Business sector	**160**	**59**	**55**	**13**	**36**	**10**	**69**	**36**
Natural sciences	120	38	52	10	28	7	40	21
Engineering and technology	12	3	-	-	4	-	8	3
Medical and health sciences	10	10	3	3	2	2	5	5
Agricultural sciences	18	8	-	-	2	1	16	7
Government sector	**49**	**31**	**2**	**2**	**29**	**13**	**18**	**16**
Engineering and technology	34	20	1	1	22	10	11	9
Agricultural sciences	15	11	1	1	7	3	7	7
Tertiary education	**163**	**94**	**-**	**-**	**6**	**4**	**157**	**90**
Natural sciences	40	21	-	-	1	1	39	20
Engineering and technology	2	-	-	-	1	-	1	-
Agricultural sciences	13	4	-	-	-	-	13	4
Social sciences	99	65	-	-	4	3	95	62
Humanities	9	4	-	-	-	-	9	4
Region Šumadije i Zapadne Srbije	**114**	**62**	**5**	**4**	**15**	**8**	**94**	**50**
Natural sciences	26	10	-	-	-	-	26	10
Engineering and technology	24	9	1	-	3	-	20	9
Medical and health sciences	35	23	1	1	2	-	32	22
Agricultural sciences	1	1	-	-	1	1	-	-
Social sciences	12	8	3	3	3	2	6	3
Humanities	16	11	-	-	6	5	10	6
Business sector	**21**	**7**	**1**	**-**	**2**	**-**	**18**	**7**
Engineering and technology	21	7	1	-	2	-	18	7
Government sector	**1**	**1**	**-**	**-**	**1**	**1**	**-**	**-**
Agricultural sciences	1	1	-	-	1	1	-	-
Tertiary education	**92**	**54**	**4**	**4**	**12**	**7**	**76**	**43**
Natural sciences	26	10	-	-	-	-	26	10
Engineering and technology	3	2	-	-	1	-	2	2
Medical and health sciences	35	23	1	1	2	-	32	22
Social sciences	12	8	3	3	3	2	6	3
Humanities	16	11	-	-	6	5	10	6
Region Južne i Istočne Srbije	**158**	**76**	**14**	**6**	**36**	**19**	**108**	**51**
Natural sciences	3	1	3	1	-	-	-	-
Engineering and technology	103	43	9	5	12	4	82	34
Medical and health sciences	10	6	-	-	-	-	10	6
Agricultural sciences	11	7	-	-	1	1	10	6
Social sciences	7	5	2	-	2	2	3	3
Humanities	24	14	-	-	21	12	3	2
Business sector	**33**	**13**	**3**	**1**	**3**	**1**	**27**	**11**
Natural sciences	3	1	3	1	-	-	-	-
Engineering and technology	19	5	-	-	2	-	17	5
Agricultural sciences	11	7	-	-	1	1	10	6
Government sector	**21**	**9**	**-**	**-**	**4**	**2**	**17**	**7**
Engineering and technology	21	9	-	-	4	2	17	7
Tertiary education	**104**	**54**	**11**	**5**	**29**	**16**	**64**	**33**
Engineering and technology	63	29	9	5	6	2	48	22
Medical and health sciences	10	6	-	-	-	-	10	6
Social sciences	7	5	2	-	2	2	3	3
Humanities	24	14	-	-	21	12	3	2
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, 2019

	Full-time and part-time assistant-researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
REPUBLIC OF SERBIA	**1671,2**	**853,8**	**191,5**	**89,8**	**381,8**	**174,9**	**1097,9**	**589,1**
Natural sciences	537,0	233,3	65,8	14,3	136,5	53,5	334,7	165,5
Engineering and technology	360,6	135,7	42,3	19,3	91,9	27,4	226,4	89,0
Medical and health sciences	108,6	79,8	7,0	6,0	12,5	8,0	89,1	65,8
Agricultural sciences	270,4	144,9	15,3	10,3	45,0	23,0	210,1	111,6
Social sciences	214,6	133,3	50,1	30,9	40,7	22,8	123,8	79,6
Humanities	180,0	126,8	11,0	9,0	55,2	40,2	113,8	77,6
Business sector	**596,4**	**213,4**	**87,1**	**26,6**	**136,0**	**36,0**	**373,3**	**150,8**
Natural sciences	288,7	94,5	46,8	8,3	82,0	22,0	159,9	64,2
Engineering and technology	206,3	61,8	28,0	13,0	39,8	4,3	138,5	44,5
Medical and health sciences	36,9	29,1	3,3	2,3	7,5	5,0	26,1	21,8
Agricultural sciences	50,8	22,3	4,0	1,0	4,0	3,0	42,8	18,3
Social sciences	13,7	5,7	5,0	2,0	2,7	1,7	6,0	2,0
Government sector	**298,3**	**157,4**	**24,5**	**11,5**	**65,4**	**32,4**	**208,4**	**113,5**
Natural sciences	85,0	38,0	13,0	4,0	12,0	7,0	60,0	27,0
Engineering and technology	71,1	35,2	3,3	0,3	29,4	13,4	38,4	21,5
Medical and health sciences	2,2	2,2	0,2	0,2	1,0	1,0	1,0	1,0
Agricultural sciences	135,0	78,0	7,0	6,0	22,0	10,0	106,0	62,0
Social sciences	4,0	3,0	1,0	1,0	1,0	1,0	2,0	1,0
Humanities	1,0	1,0	-	-	-	-	1,0	1,0
Tertiary education	**776,5**	**483,0**	**79,9**	**51,7**	**180,4**	**106,5**	**516,2**	**324,8**
Natural sciences	163,3	100,8	6,0	2,0	42,5	24,5	114,8	74,3
Engineering and technology	83,2	38,7	11,0	6,0	22,7	9,7	49,5	23,0
Medical and health sciences	69,5	48,5	3,5	3,5	4,0	2,0	62,0	43,0
Agricultural sciences	84,6	44,6	4,3	3,3	19,0	10,0	61,3	31,3
Social sciences	196,9	124,6	44,1	27,9	37,0	20,1	115,8	76,6
Humanities	179,0	125,8	11,0	9,0	55,2	40,2	112,8	76,6
Beogradski region	**1093,1**	**572,9**	**129,4**	**72,7**	**268,9**	**126,9**	**694,8**	**373,3**
Natural sciences	362,2	171,5	21,3	8,3	108,0	46,0	232,9	117,2
Engineering and technology	207,5	74,5	33,5	15,0	54,6	16,5	119,4	43,0
Medical and health sciences	72,0	53,2	4,2	3,2	9,5	6,0	58,3	44,0
Agricultural sciences	216,9	115,7	14,3	9,3	34,0	17,0	168,6	89,4
Social sciences	103,5	60,2	45,1	27,9	34,6	18,2	23,8	14,1
Humanities	131,0	97,8	11,0	9,0	28,2	23,2	91,8	65,6
Business sector	**410,0**	**147,3**	**39,8**	**18,3**	**96,6**	**25,0**	**273,6**	**104,0**
Natural sciences	178,2	62,5	2,3	2,3	54,0	15,0	121,9	45,2
Engineering and technology	164,0	50,0	27,5	13,0	33,4	4,3	103,1	32,7
Medical and health sciences	27,8	20,0	1,0	-	5,5	3,0	21,3	17,0
Agricultural sciences	26,3	9,1	4,0	1,0	1,0	1,0	21,3	7,1
Social sciences	13,7	5,7	5,0	2,0	2,7	1,7	6,0	2,0
Government sector	**233,2**	**122,2**	**23,2**	**10,2**	**34,0**	**19,0**	**176,0**	**93,0**
Natural sciences	85,0	38,0	13,0	4,0	12,0	7,0	60,0	27,0
Engineering and technology	22,0	12,0	3,0	-	6,0	4,0	13,0	8,0
Medical and health sciences	2,2	2,2	0,2	0,2	1,0	1,0	1,0	1,0
Agricultural sciences	119,0	66,0	6,0	5,0	14,0	6,0	99,0	55,0
Social sciences	4,0	3,0	1,0	1,0	1,0	1,0	2,0	1,0
Humanities	1,0	1,0	-	-	-	-	1,0	1,0
Tertiary education	**449,9**	**303,4**	**66,4**	**44,2**	**138,3**	**82,9**	**245,2**	**176,3**
Natural sciences	99,0	71,0	6,0	2,0	42,0	24,0	51,0	45,0
Engineering and technology	21,5	12,5	3,0	2,0	15,2	8,2	3,3	2,3
Medical and health sciences	42,0	31,0	3,0	3,0	3,0	2,0	36,0	26,0
Agricultural sciences	71,6	40,6	4,3	3,3	19,0	10,0	48,3	27,3
Social sciences	85,8	51,5	39,1	24,9	30,9	15,5	15,8	11,1
Humanities	130,0	96,8	11,0	9,0	28,2	23,2	90,8	64,6
Region Vojvodine	**339,9**	**161,7**	**45,6**	**8,6**	**65,0**	**21,5**	**229,3**	**131,6**
Natural sciences	146,8	50,8	42,0	5,0	28,5	7,5	76,3	38,3
Engineering and technology	41,4	16,5	0,3	0,3	24,4	7,4	16,7	8,8
Medical and health sciences	9,1	9,1	2,3	2,3	2,0	2,0	4,8	4,8
Agricultural sciences	41,5	21,2	1,0	1,0	9,0	4,0	31,5	16,2
Social sciences	92,1	60,1	-	-	1,1	0,6	91,0	59,5
Humanities	9,0	4,0	-	-	-	-	9,0	4,0

5.2. Full-time and part-time assistant-researchers, by academic titles, sectors, fields of science, expressed in full-time equivalent, 2019 (continued)

	Full-time and part-time assistant-researchers							
	Total		Doctors of science		Master's degree/specialisation		University degree	
	All	Women	All	Women	All	Women	All	Women
Business sector	**141,9**	**48,6**	**44,3**	**7,3**	**36,0**	**10,0**	**61,6**	**31,3**
Natural sciences	108,0	31,0	42,0	5,0	28,0	7,0	38,0	19,0
Engineering and technology	11,3	2,3	-	-	4,0	-	7,3	2,3
Medical and health sciences	9,1	9,1	2,3	2,3	2,0	2,0	4,8	4,8
Agricultural sciences	13,5	6,2	-	-	2,0	1,0	11,5	5,2
Government sector	**43,1**	**25,2**	**1,3**	**1,3**	**26,4**	**10,4**	**15,4**	**13,5**
Engineering and technology	28,1	14,2	0,3	0,3	19,4	7,4	8,4	6,5
Agricultural sciences	15,0	11,0	1,0	1,0	7,0	3,0	7,0	7,0
Tertiary education	**154,9**	**87,9**	**-**	**-**	**2,6**	**1,1**	**152,3**	**86,8**
Natural sciences	38,8	19,8	-	-	0,5	0,5	38,3	19,3
Engineering and technology	2,0	-	-	-	1,0	-	1,0	-
Agricultural sciences	13,0	4,0	-	-	-	-	13,0	4,0
Social sciences	92,1	60,1	-	-	1,1	0,6	91,0	59,5
Humanities	9,0	4,0	-	-	-	-	9,0	4,0
Region Šumadije i Zapadne Srbije	**86,5**	**47,5**	**4,0**	**3,5**	**12,4**	**8,0**	**70,1**	**36,0**
Natural sciences	25,5	10,0	-	-	-	-	25,5	10,0
Engineering and technology	14,5	6,0	0,5	-	1,4	-	12,6	6,0
Medical and health sciences	17,5	11,5	0,5	0,5	1,0	-	16,0	11,0
Agricultural sciences	1,0	1,0	-	-	1,0	1,0	-	-
Social sciences	12,0	8,0	3,0	3,0	3,0	2,0	6,0	3,0
Humanities	16,0	11,0	-	-	6,0	5,0	10,0	6,0
Business sector	**12,0**	**4,5**	**0,5**	**-**	**0,4**	**-**	**11,1**	**4,5**
Engineering and technology	12,0	4,5	0,5	-	0,4	-	11,1	4,5
Government sector	**1,0**	**1,0**	**-**	**-**	**1,0**	**1,0**	**-**	**-**
Agricultural sciences	1,0	1,0	-	-	1,0	1,0	-	-
Tertiary education	**73,5**	**42,0**	**3,5**	**3,5**	**11,0**	**7,0**	**59,0**	**31,5**
Natural sciences	25,5	10,0	-	-	-	-	25,5	10,0
Engineering and technology	2,5	1,5	-	-	1,0	-	1,5	1,5
Medical and health sciences	17,5	11,5	0,5	0,5	1,0	-	16,0	11,0
Social sciences	12,0	8,0	3,0	3,0	3,0	2,0	6,0	3,0
Humanities	16,0	11,0	-	-	6,0	5,0	10,0	6,0
Region Južne i Istočne Srbije	**151,7**	**71,7**	**12,5**	**5,0**	**35,5**	**18,5**	**103,7**	**48,2**
Natural sciences	2,5	1,0	2,5	1,0	-	-	-	-
Engineering and technology	97,2	38,7	8,0	4,0	11,5	3,5	77,7	31,2
Medical and health sciences	10,0	6,0	-	-	-	-	10,0	6,0
Agricultural sciences	11,0	7,0	-	-	1,0	1,0	10,0	6,0
Social sciences	7,0	5,0	2,0	-	2,0	2,0	3,0	3,0
Humanities	24,0	14,0	-	-	21,0	12,0	3,0	2,0
Business sector	**32,5**	**13,0**	**2,5**	**1,0**	**3,0**	**1,0**	**27,0**	**11,0**
Natural sciences	2,5	1,0	2,5	1,0	-	-	-	-
Engineering and technology	19,0	5,0	-	-	2,0	-	17,0	5,0
Agricultural sciences	11,0	7,0	-	-	1,0	1,0	10,0	6,0
Government sector	**21,0**	**9,0**	**-**	**-**	**4,0**	**2,0**	**17,0**	**7,0**
Engineering and technology	21,0	9,0	-	-	4,0	2,0	17,0	7,0
Tertiary education	**98,2**	**49,7**	**10,0**	**4,0**	**28,5**	**15,5**	**59,7**	**30,2**
Engineering and technology	57,2	24,7	8,0	4,0	5,5	1,5	43,7	19,2
Medical and health sciences	10,0	6,0	-	-	-	-	10,0	6,0
Social sciences	7,0	5,0	2,0	-	2,0	2,0	3,0	3,0
Humanities	24,0	14,0	-	-	21,0	12,0	3,0	2,0
Region Kosovo i Metohija	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**

6.1. Engaged on the basis of work on contract or author contract (head count), 2019

	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	**2794**	**1439**	**2106**	**1128**	**273**	**135**	**415**	**176**
Natural sciences	1165	651	939	539	63	33	163	79
Engineering and technology	494	117	259	67	75	17	160	33
Medical and health sciences	377	257	331	219	9	7	37	31
Agricultural sciences	33	18	26	12	4	3	3	3
Social sciences	488	260	351	167	111	70	26	23
Humanities	237	136	200	124	11	5	26	7
Business sector	**946**	**521**	**720**	**440**	**57**	**19**	**169**	**62**
Natural sciences	408	259	358	237	17	6	33	16
Engineering and technology	207	31	85	14	23	2	99	15
Medical and health sciences	321	226	275	188	9	7	37	31
Agricultural sciences	4	3	1	1	3	2	-	-
Social sciences	6	2	1	-	5	2	-	-
Government sector	**462**	**249**	**264**	**156**	**103**	**54**	**95**	**39**
Natural sciences	182	94	122	67	4	4	56	23
Engineering and technology	67	21	11	5	51	15	5	1
Medical and health sciences	12	7	12	7	-	-	-	-
Agricultural sciences	10	7	6	3	1	1	3	3
Social sciences	98	73	45	34	46	33	7	6
Humanities	93	47	68	40	1	1	24	6
Tertiary education	**1380**	**666**	**1122**	**532**	**107**	**59**	**151**	**75**
Natural sciences	569	295	459	235	36	20	74	40
Engineering and technology	220	65	163	48	1	-	56	17
Medical and health sciences	44	24	44	24	-	-	-	-
Agricultural sciences	19	8	19	8	-	-	-	-
Social sciences	384	185	305	133	60	35	19	17
Humanities	144	89	132	84	10	4	2	1
Non-profit sector	**6**	**3**	**-**	**-**	**6**	**3**	**-**	**-**
Natural sciences	6	3	-	-	6	3	-	-
Beogradski region	**1953**	**1045**	**1432**	**800**	**151**	**94**	**370**	**151**
Natural sciences	820	467	655	378	22	16	143	73
Engineering and technology	233	43	70	13	12	-	151	30
Medical and health sciences	323	215	293	193	9	7	21	15
Agricultural sciences	8	6	2	1	3	2	3	3
Social sciences	387	210	267	123	94	64	26	23
Humanities	182	104	145	92	11	5	26	7
Business sector	**833**	**470**	**668**	**417**	**33**	**13**	**132**	**40**
Natural sciences	363	247	344	233	5	3	14	11
Engineering and technology	173	23	64	9	12	-	97	14
Medical and health sciences	289	197	259	175	9	7	21	15
Agricultural sciences	2	1	-	-	2	1	-	-
Social sciences	6	2	1	-	5	2	-	-
Government sector	**397**	**230**	**255**	**153**	**52**	**39**	**90**	**38**
Natural sciences	182	94	122	67	4	4	56	23
Engineering and technology	6	4	6	4	-	-	-	-
Medical and health sciences	12	7	12	7	-	-	-	-
Agricultural sciences	6	5	2	1	1	1	3	3
Social sciences	98	73	45	34	46	33	7	6
Humanities	93	47	68	40	1	1	24	6
Tertiary education	**723**	**345**	**509**	**230**	**66**	**42**	**148**	**73**
Natural sciences	275	126	189	78	13	9	73	39
Engineering and technology	54	16	-	-	-	-	54	16
Medical and health sciences	22	11	22	11	-	-	-	-
Social sciences	283	135	221	89	43	29	19	17
Humanities	89	57	77	52	10	4	2	1
Region Vojvodine	**574**	**292**	**440**	**241**	**93**	**28**	**41**	**23**
Natural sciences	300	160	257	148	23	6	20	6
Engineering and technology	101	35	44	19	52	15	5	1
Medical and health sciences	54	42	38	26	-	-	16	16
Agricultural sciences	24	11	23	10	1	1	-	-
Social sciences	95	44	78	38	17	6	-	-

6.1. Engaged on the basis of work on contract or author contract (head count), 2019 (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
Business sector	**77**	**42**	**30**	**17**	**12**	**4**	**35**	**21**
Natural sciences	44	12	14	4	11	3	19	5
Medical and health sciences	32	29	16	13	-	-	16	16
Agricultural sciences	1	1	-	-	1	1	-	-
Government sector	**64**	**19**	**8**	**3**	**51**	**15**	**5**	**1**
Engineering and technology	60	17	4	1	51	15	5	1
Agricultural sciences	4	2	4	2	-	-	-	-
Tertiary education	**427**	**228**	**402**	**221**	**24**	**6**	**1**	**1**
Natural sciences	250	145	243	144	6	-	1	1
Engineering and technology	41	18	40	18	1	-	-	-
Medical and health sciences	22	13	22	13	-	-	-	-
Agricultural sciences	19	8	19	8	-	-	-	-
Social sciences	95	44	78	38	17	6	-	-
Non-profit sector	**6**	**3**	**-**	**-**	**6**	**3**	**-**	**-**
Natural sciences	6	3	-	-	6	3	-	-
Region Šumadije i Zapadne Srbije	**158**	**75**	**134**	**62**	**23**	**12**	**1**	**1**
Natural sciences	44	24	27	13	17	11	-	-
Engineering and technology	53	13	46	11	6	1	1	1
Social sciences	6	6	6	6	-	-	-	-
Humanities	55	32	55	32	-	-	-	-
Business sector	**21**	**6**	**14**	**4**	**6**	**1**	**1**	**1**
Engineering and technology	21	6	14	4	6	1	1	1
Tertiary education	**137**	**69**	**120**	**58**	**17**	**11**	**-**	**-**
Natural sciences	44	24	27	13	17	11	-	-
Engineering and technology	32	7	32	7	-	-	-	-
Social sciences	6	6	6	6	-	-	-	-
Humanities	55	32	55	32	-	-	-	-
Region Južne i Istočne Srbije	**109**	**27**	**100**	**25**	**6**	**1**	**3**	**1**
Natural sciences	1	-	-	-	1	-	-	-
Engineering and technology	107	26	99	24	5	1	3	1
Agricultural sciences	1	1	1	1	-	-	-	-
Business sector	**15**	**3**	**8**	**2**	**6**	**1**	**1**	**-**
Natural sciences	1	-	-	-	1	-	-	-
Engineering and technology	13	2	7	1	5	1	1	-
Agricultural sciences	1	1	1	1	-	-	-	-
Government sector	**1**	**-**	**1**	**-**	**-**	**-**	**-**	**-**
Engineering and technology	1	-	1	-	-	-	-	-
Tertiary education	**93**	**24**	**91**	**23**	**-**	**-**	**2**	**1**
Engineering and technology	93	24	91	23	-	-	2	1
Region Kosovo i Metohija	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**

6.2. Engaged on the basis of work on contract or author contract, expressed in full-time equivalent, 2019

	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	**1626,4**	**764,9**	**1212,9**	**593,6**	**142,0**	**75,5**	**271,5**	**95,8**
Natural sciences	762,6	405,6	606,6	333,9	48,5	25,4	107,5	46,3
Engineering and technology	373,3	82,4	221,3	56,9	23,9	4,3	128,1	21,2
Medical and health sciences	98,3	61,7	86,9	52,7	5,0	3,8	6,4	5,2
Agricultural sciences	28,2	15,3	23,1	11,2	3,5	2,5	1,6	1,6
Social sciences	257,6	131,5	178,5	75,3	58,2	37,8	20,9	18,4
Humanities	106,4	68,4	96,5	63,6	2,9	1,7	7,0	3,1
Business sector	**347,7**	**133,9**	**208,9**	**103,1**	**35,4**	**11,6**	**103,4**	**19,2**
Natural sciences	144,4	76,2	106,5	62,6	14,0	4,6	23,9	9,0
Engineering and technology	135,9	11,8	50,4	6,0	12,4	0,8	73,1	5,0
Medical and health sciences	61,4	42,5	50,0	33,5	5,0	3,8	6,4	5,2
Agricultural sciences	4,0	3,0	1,0	1,0	3,0	2,0	-	-
Social sciences	2,0	0,4	1,0	-	1,0	0,4	-	-
Government sector	**229,9**	**125,1**	**140,2**	**80,3**	**30,0**	**19,4**	**59,7**	**25,4**
Natural sciences	150,6	76,8	102,1	57,7	1,5	1,5	47,0	17,6
Engineering and technology	21,4	7,7	10,1	4,1	10,5	3,5	0,8	0,1
Medical and health sciences	2,4	1,4	2,4	1,4	-	-	-	-
Agricultural sciences	5,2	4,3	3,1	2,2	0,5	0,5	1,6	1,6
Social sciences	34,2	26,7	13,1	9,7	17,4	13,8	3,7	3,2
Humanities	16,1	8,2	9,4	5,2	0,1	0,1	6,6	2,9
Tertiary education	**1048,2**	**505,6**	**863,8**	**410,2**	**76,0**	**44,2**	**108,4**	**51,2**
Natural sciences	467,0	252,3	398,0	213,6	32,4	19,0	36,6	19,7
Engineering and technology	216,0	62,9	160,8	46,8	1,0	-	54,2	16,1
Medical and health sciences	34,5	17,8	34,5	17,8	-	-	-	-
Agricultural sciences	19,0	8,0	19,0	8,0	-	-	-	-
Social sciences	221,4	104,4	164,4	65,6	39,8	23,6	17,2	15,2
Humanities	90,3	60,2	87,1	58,4	2,8	1,6	0,4	0,2
Non-profit sector	**0,6**	**0,3**	**-**	**-**	**0,6**	**0,3**	**-**	**-**
Natural sciences	0,6	0,3	-	-	0,6	0,3	-	-
Beogradski region	**1012,7**	**481,5**	**675,0**	**337,9**	**90,0**	**56,3**	**247,7**	**87,3**
Natural sciences	433,4	226,3	329,4	173,9	16,5	12,1	87,5	40,3
Engineering and technology	186,1	29,7	51,2	8,8	8,4	-	126,5	20,9
Medical and health sciences	74,4	46,9	65,2	40,1	5,0	3,8	4,2	3,0
Agricultural sciences	5,5	4,1	1,4	1,0	2,5	1,5	1,6	1,6
Social sciences	223,4	115,7	147,8	60,1	54,7	37,2	20,9	18,4
Humanities	89,9	58,8	80,0	54,0	2,9	1,7	7,0	3,1
Business sector	**288,1**	**115,1**	**188,1**	**96,4**	**18,4**	**6,8**	**81,6**	**11,9**
Natural sciences	99,4	64,2	92,5	58,6	2,0	1,6	4,9	4,0
Engineering and technology	126,1	9,7	45,2	4,8	8,4	-	72,5	4,9
Medical and health sciences	58,6	39,8	49,4	33,0	5,0	3,8	4,2	3,0
Agricultural sciences	2,0	1,0	-	-	2,0	1,0	-	-
Social sciences	2,0	0,4	1,0	-	1,0	0,4	-	-
Government sector	**212,8**	**120,2**	**134,4**	**79,0**	**19,5**	**15,9**	**58,9**	**25,3**
Natural sciences	150,6	76,8	102,1	57,7	1,5	1,5	47,0	17,6
Engineering and technology	6,0	4,0	6,0	4,0	-	-	-	-
Medical and health sciences	2,4	1,4	2,4	1,4	-	-	-	-
Agricultural sciences	3,5	3,1	1,4	1,0	0,5	0,5	1,6	1,6
Social sciences	34,2	26,7	13,1	9,7	17,4	13,8	3,7	3,2
Humanities	16,1	8,2	9,4	5,2	0,1	0,1	6,6	2,9
Tertiary education	**511,8**	**246,2**	**352,5**	**162,5**	**52,1**	**33,6**	**107,2**	**50,1**
Natural sciences	183,4	85,3	134,8	57,6	13,0	9,0	35,6	18,7
Engineering and technology	54,0	16,0	-	-	-	-	54,0	16,0
Medical and health sciences	13,4	5,7	13,4	5,7	-	-	-	-
Social sciences	187,2	88,6	133,7	50,4	36,3	23,0	17,2	15,2
Humanities	73,8	50,6	70,6	48,8	2,8	1,6	0,4	0,2
Region Vojvodine	**428,0**	**218,0**	**371,4**	**201,3**	**33,6**	**8,4**	**23,0**	**8,3**
Natural sciences	294,6	157,3	257,0	148,0	17,6	3,3	20,0	6,0
Engineering and technology	55,4	21,7	43,1	18,1	11,5	3,5	0,8	0,1
Medical and health sciences	23,9	14,8	21,7	12,6	-	-	2,2	2,2
Agricultural sciences	21,7	10,2	20,7	9,2	1,0	1,0	-	-
Social sciences	32,4	14,0	28,9	13,4	3,5	0,6	-	-

6.2. Engaged on the basis of work on contract or author contract, expressed in full-time equivalent, 2019 (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
Business sector	**47,8**	**15,7**	**14,6**	**4,5**	**12,0**	**4,0**	**21,2**	**7,2**
Natural sciences	44,0	12,0	14,0	4,0	11,0	3,0	19,0	5,0
Medical and health sciences	2,8	2,7	0,6	0,5	-	-	2,2	2,2
Agricultural sciences	1,0	1,0	-	-	1,0	1,0	-	-
Government sector	**16,1**	**4,9**	**4,8**	**1,3**	**10,5**	**3,5**	**0,8**	**0,1**
Engineering and technology	14,4	3,7	3,1	0,1	10,5	3,5	0,8	0,1
Agricultural sciences	1,7	1,2	1,7	1,2	-	-	-	-
Tertiary education	**363,5**	**197,1**	**352,0**	**195,5**	**10,5**	**0,6**	**1,0**	**1,0**
Natural sciences	250,0	145,0	243,0	144,0	6,0	-	1,0	1,0
Engineering and technology	41,0	18,0	40,0	18,0	1,0	-	-	-
Medical and health sciences	21,1	12,1	21,1	12,1	-	-	-	-
Agricultural sciences	19,0	8,0	19,0	8,0	-	-	-	-
Social sciences	32,4	14,0	28,9	13,4	3,5	0,6	-	-
Non-profit sector	**0,6**	**0,3**	**-**	**-**	**0,6**	**0,3**	**-**	**-**
Natural sciences	0,6	0,3	-	-	0,6	0,3	-	-
Region Šumadije i Zapadne Srbije	**89,1**	**41,0**	**73,3**	**30,6**	**15,7**	**10,3**	**0,1**	**0,1**
Natural sciences	33,6	22,0	20,2	12,0	13,4	10,0	-	-
Engineering and technology	37,2	7,6	34,8	7,2	2,3	0,3	0,1	0,1
Social sciences	1,8	1,8	1,8	1,8	-	-	-	-
Humanities	16,5	9,6	16,5	9,6	-	-	-	-
Business sector	**5,9**	**1,3**	**3,5**	**0,9**	**2,3**	**0,3**	**0,1**	**0,1**
Engineering and technology	5,9	1,3	3,5	0,9	2,3	0,3	0,1	0,1
Tertiary education	**83,2**	**39,7**	**69,8**	**29,7**	**13,4**	**10,0**	**-**	**-**
Natural sciences	33,6	22,0	20,2	12,0	13,4	10,0	-	-
Engineering and technology	31,3	6,3	31,3	6,3	-	-	-	-
Social sciences	1,8	1,8	1,8	1,8	-	-	-	-
Humanities	16,5	9,6	16,5	9,6	-	-	-	-
Region Južne i Istočne Srbije	**96,6**	**24,4**	**93,2**	**23,8**	**2,7**	**0,5**	**0,7**	**0,1**
Natural sciences	1,0	-	-	-	1,0	-	-	-
Engineering and technology	94,6	23,4	92,2	22,8	1,7	0,5	0,7	0,1
Agricultural sciences	1,0	1,0	1,0	1,0	-	-	-	-
Business sector	**5,9**	**1,8**	**2,7**	**1,3**	**2,7**	**0,5**	**0,5**	**-**
Natural sciences	1,0	-	-	-	1,0	-	-	-
Engineering and technology	3,9	0,8	1,7	0,3	1,7	0,5	0,5	-
Agricultural sciences	1,0	1,0	1,0	1,0	-	-	-	-
Government sector	**1,0**	**-**	**1,0**	**-**	**-**	**-**	**-**	**-**
Engineering and technology	1,0	-	1,0	-	-	-	-	-
Tertiary education	**89,7**	**22,6**	**89,5**	**22,5**	**-**	**-**	**0,2**	**0,1**
Engineering and technology	89,7	22,6	89,5	22,5	-	-	0,2	0,1
Region Kosovo i Metohija	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**

7.1. Research works (projects and studies), by sectors and territories, 2019

	Research works (projects and studies), by sectors and territory, 2019							
	Number of works				Value of scientific works, thous. RSD			
	Total	Basic	Applied	Development	Total	Basic	Applied	Development
REPUBLIC OF SERBIA	**10389**	**4722**	**3713**	**1954**	**48074119**	**14861429**	**19667040**	**13545650**
Business sector	1619	321	690	608	19004137	545908	11977314	6480915
Government sector	2615	1450	820	345	12396390	6440598	2760682	3195110
Tertiary education	6143	2943	2199	1001	16671300	7873762	4927913	3869625
Non-profit sector	12	8	4	-	2292	1161	1131	-
Beogradski region	**5774**	**2700**	**2010**	**1064**	**34953315**	**12328742**	**14331528**	**8293045**
Business sector	1284	313	540	431	14573587	510792	9922851	4139944
Government sector	2380	1443	665	272	11025788	6375417	2225126	2425245
Tertiary education	2105	943	801	361	9352620	5442344	2182420	1727856
Non-profit sector	5	1	4	-	1320	189	1131	-
Region Vojvodine	**2659**	**684**	**1378**	**597**	**9607350**	**1325697**	**4250230**	**4031423**
Business sector	190	5	106	79	3444048	13346	1608755	1821947
Government sector	206	6	155	45	1162560	64508	535556	562496
Tertiary education	2256	666	1117	473	4999770	1246871	2105919	1646980
Non-profit sector	7	7	-	-	972	972	-	-
Region Šumadije i Zapadne Srbije	**654**	**350**	**180**	**124**	**1703885**	**700671**	**542926**	**460288**
Business sector	54	1	20	33	522020	6654	259120	256246
Government sector	12	-	-	12	71304	-	-	71304
Tertiary education	588	349	160	79	1110561	694017	283806	132738
Region Južne i Istočne Srbije	**1302**	**988**	**145**	**169**	**1809569**	**506319**	**542356**	**760894**
Business sector	91	2	24	65	464482	15116	186588	262778
Government sector	17	1	-	16	136738	673	-	136065
Tertiary education	1194	985	121	88	1208349	490530	355768	362051
Region Kosovo i Metohija	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**

7.2. Research works (projects and studies), by sectors and fields of science, 2019

	Research works (projects and studies), by sectors and fields of science, 2019							
	Number of works				Value of scientific works, thous. RSD			
	Total	Basic	Applied	Development	Total	Basic	Applied	Development
REPUBLIC OF SERBIA	**10389**	**4722**	**3713**	**1954**	**48074119**	**14861429**	**19667040**	**13545650**
Natural sciences	2133	1265	507	361	20323487	6652107	10988865	2682515
Engineering and technology	3452	545	1916	991	13378380	1209554	5094932	7073894
Medical and health sciences	550	264	201	85	2464847	962061	459054	1043732
Agricultural sciences	637	72	323	242	3748375	327859	1263874	2156642
Social sciences	2826	1975	582	269	6216165	3867388	1768670	580107
Humanities	791	601	184	6	1942865	1842460	91645	8760
Business sector	**1619**	**321**	**690**	**608**	**19004137**	**545908**	**11977314**	**6480915**
Natural sciences	445	77	220	148	11921679	150143	9754985	2016551
Engineering and technology	855	195	313	347	5914960	327176	1804953	3782831
Medical and health sciences	94	1	43	50	513668	30808	202751	280109
Agricultural sciences	59	-	28	31	517538	-	163139	354399
Social sciences	166	48	86	32	136292	37781	51486	47025
Government sector	**2615**	**1450**	**820**	**345**	**12396390**	**6440598**	**2760682**	**3195110**
Natural sciences	660	500	61	99	5048218	4169346	775426	103446
Engineering and technology	499	25	332	142	3047748	130490	1092298	1824960
Medical and health sciences	95	41	54	-	296378	199767	96611	-
Agricultural sciences	303	15	184	104	2095138	123401	705033	1266704
Social sciences	524	503	21	-	776032	715998	60034	-
Humanities	534	366	168	-	1132876	1101596	31280	-
Tertiary education	**6143**	**2943**	**2199**	**1001**	**16671300**	**7873762**	**4927913**	**3869625**
Natural sciences	1021	681	226	114	3352618	2331646	458454	562518
Engineering and technology	2097	324	1271	502	4415483	751699	2197681	1466103
Medical and health sciences	361	222	104	35	1654801	731486	159692	763623
Agricultural sciences	275	57	111	107	1135699	204458	395702	535539
Social sciences	2132	1424	471	237	5302710	3113609	1656019	533082
Humanities	257	235	16	6	809989	740864	60365	8760
Non-profit sector	**12**	**8**	**4**	**-**	**2292**	**1161**	**1131**	**-**
Natural sciences	7	7	-	-	972	972	-	-
Engineering and technology	1	1	-	-	189	189	-	-
Social sciences	4	-	4	-	1131	-	1131	-
Beogradski region	**5774**	**2700**	**2010**	**1064**	**34953315**	**12328742**	**14331528**	**8293045**
Natural sciences	1296	756	297	243	16424901	5896627	9165738	1362536
Engineering and technology	1758	376	833	549	9428905	898107	3452042	5078756
Medical and health sciences	328	118	157	53	1323897	707021	364993	251883
Agricultural sciences	433	37	249	147	2807581	243094	1055265	1509222
Social sciences	1188	817	304	67	3136338	2795580	258810	81948
Humanities	771	596	170	5	1831693	1788313	34680	8700
Business sector	**1284**	**313**	**540**	**431**	**14573587**	**510792**	**9922851**	**4139944**
Natural sciences	271	72	114	85	9165125	147117	8198825	819183
Engineering and technology	725	192	279	254	4525243	295086	1442433	2787724
Medical and health sciences	74	1	42	31	458254	30808	202163	225283
Agricultural sciences	48	-	19	29	288673	-	27944	260729
Social sciences	166	48	86	32	136292	37781	51486	47025
Government sector	**2380**	**1443**	**665**	**272**	**11025788**	**6375417**	**2225126**	**2425245**
Natural sciences	660	500	61	99	5048218	4169346	775426	103446
Engineering and technology	331	19	205	107	2157388	65607	566742	1525039
Medical and health sciences	95	41	54	-	296378	199767	96611	-
Agricultural sciences	236	14	156	66	1614896	123103	695033	796760
Social sciences	524	503	21	-	776032	715998	60034	-
Humanities	534	366	168	-	1132876	1101596	31280	-
Tertiary education	**2105**	**943**	**801**	**361**	**9352620**	**5442344**	**2182420**	**1727856**
Natural sciences	365	184	122	59	2211558	1580164	191487	439907
Engineering and technology	701	164	349	188	2746085	537225	1442867	765993
Medical and health sciences	159	76	61	22	569265	476446	66219	26600
Agricultural sciences	149	23	74	52	904012	119991	332288	451733
Social sciences	494	266	193	35	2222883	2041801	146159	34923
Humanities	237	230	2	5	698817	686717	3400	8700
Non-profit sector	**5**	**1**	**4**	**-**	**1320**	**189**	**1131**	**-**
Engineering and technology	1	1	-	-	189	189	-	-
Social sciences	4	-	4	-	1131	-	1131	-

7.2. Research works (projects and studies), by sectors and fields of science, 2019 (continued)

	Research works (projects and studies), by sectors and fields of science, 2019							
	Number of works				Value of scientific works, thous. RSD			
	Total	Basic	Applied	Development	Total	Basic	Applied	Development
Region Vojvodine	**2659**	**684**	**1378**	**597**	**9607350**	**1325697**	**4250230**	**4031423**
Natural sciences	302	55	161	86	3152317	203985	1697946	1250386
Engineering and technology	1200	43	920	237	2162020	201120	1000383	960517
Medical and health sciences	145	114	11	20	958941	160706	27179	771056
Agricultural sciences	170	31	72	67	744100	51715	133233	559152
Social sciences	841	440	214	187	2587626	705825	1391489	490312
Humanities	1	1	-	-	2346	2346	-	-
Business sector	**190**	**5**	**106**	**79**	**3444048**	**13346**	**1608755**	**1821947**
Natural sciences	134	4	99	31	2679237	2526	1548936	1127775
Engineering and technology	28	1	-	27	556496	10820	-	545676
Medical and health sciences	19	-	-	19	54826	-	-	54826
Agricultural sciences	9	-	7	2	153489	-	59819	93670
Government sector	**206**	**6**	**155**	**45**	**1162560**	**64508**	**535556**	**562496**
Engineering and technology	151	5	127	19	753622	64210	525556	163856
Agricultural sciences	55	1	28	26	408938	298	10000	398640
Tertiary education	**2256**	**666**	**1117**	**473**	**4999770**	**1246871**	**2105919**	**1646980**
Natural sciences	161	44	62	55	472108	200487	149010	122611
Engineering and technology	1021	37	793	191	851902	126090	474827	250985
Medical and health sciences	126	114	11	1	904115	160706	27179	716230
Agricultural sciences	106	30	37	39	181673	51417	63414	66842
Social sciences	841	440	214	187	2587626	705825	1391489	490312
Humanities	1	1	-	-	2346	2346	-	-
Non-profit sector	**7**	**7**	**-**	**-**	**972**	**972**	**-**	**-**
Natural sciences	7	7	-	-	972	972	-	-
Region Šumadije i Zapadne Srbije	**654**	**350**	**180**	**124**	**1703885**	**700671**	**542926**	**460288**
Natural sciences	191	142	47	2	535498	398806	123593	13099
Engineering and technology	263	92	90	81	702203	42031	320619	339553
Medical and health sciences	19	13	-	6	83256	70112	-	13144
Agricultural sciences	33	4	1	28	121904	33050	586	88268
Social sciences	146	97	42	7	217971	113619	98128	6224
Humanities	2	2	-	-	43053	43053	-	-
Business sector	**54**	**1**	**20**	**33**	**522020**	**6654**	**259120**	**256246**
Natural sciences	7	-	5	2	18735	-	5636	13099
Engineering and technology	46	1	14	31	502699	6654	252898	243147
Agricultural sciences	1	-	1	-	586	-	586	-
Government sector	**12**	**-**	**-**	**12**	**71304**	**-**	**-**	**71304**
Agricultural sciences	12	-	-	12	71304	-	-	71304
Tertiary education	**588**	**349**	**160**	**79**	**1110561**	**694017**	**283806**	**132738**
Natural sciences	184	142	42	-	516763	398806	117957	-
Engineering and technology	217	91	76	50	199504	35377	67721	96406
Medical and health sciences	19	13	-	6	83256	70112	-	13144
Agricultural sciences	20	4	-	16	50014	33050	-	16964
Social sciences	146	97	42	7	217971	113619	98128	6224
Humanities	2	2	-	-	43053	43053	-	-
Region Južne i Istočne Srbije	**1302**	**988**	**145**	**169**	**1809569**	**506319**	**542356**	**760894**
Natural sciences	344	312	2	30	210771	152689	1588	56494
Engineering and technology	231	34	73	124	1085252	68296	321888	695068
Medical and health sciences	58	19	33	6	98753	24222	66882	7649
Agricultural sciences	1	-	1	-	74790	-	74790	-
Social sciences	651	621	22	8	274230	252364	20243	1623
Humanities	17	2	14	1	65773	8748	56965	60
Business sector	**91**	**2**	**24**	**65**	**464482**	**15116**	**186588**	**262778**
Natural sciences	33	1	2	30	58582	500	1588	56494
Engineering and technology	56	1	20	35	330522	14616	109622	206284
Medical and health sciences	1	-	1	-	588	-	588	-
Agricultural sciences	1	-	1	-	74790	-	74790	-
Government sector	**17**	**1**	**-**	**16**	**136738**	**673**	**-**	**136065**
Engineering and technology	17	1	-	16	136738	673	-	136065
Tertiary education	**1194**	**985**	**121**	**88**	**1208349**	**490530**	**355768**	**362051**
Natural sciences	311	311	-	-	152189	152189	-	-
Engineering and technology	158	32	53	73	617992	53007	212266	352719
Medical and health sciences	57	19	32	6	98165	24222	66294	7649
Social sciences	651	621	22	8	274230	252364	20243	1623
Humanities	17	2	14	1	65773	8748	56965	60
Region Kosovo i Metohija	**...**	**...**	**...**	**...**	**...**	**...**	**...**	**...**

8.1. Gross domestic expenditure for R&D, by sectors and fields of science, 2019

Thous. RSD

	Gross domestic expenditure	Gross investments	Current costs		
			Total	Gross salaries	Material costs
REPUBLIC OF SERBIA	**48074119**	**3263651**	**44810468**	**29837433**	**14973035**
Natural sciences	20323487	532862	19790625	14128520	5662105
Engineering and technology	13378380	2018544	11359836	6657323	4702513
Medical and health sciences	2464847	76585	2388262	943215	1445047
Agricultural sciences	3748375	304531	3443844	2561882	881962
Social sciences	6216165	212069	6004096	4250150	1753946
Humanities	1942865	119060	1823805	1296343	527462
Business sector	**19004137**	**2113797**	**16890340**	**11756852**	**5133488**
Natural sciences	11921679	146650	11775029	8279623	3495406
Engineering and technology	5914960	1710163	4204797	2935411	1269386
Medical and health sciences	513668	41481	472187	252150	220037
Agricultural sciences	517538	202984	314554	226502	88052
Social sciences	136292	12519	123773	63166	60607
Government sector	**12396390**	**586593**	**11809797**	**8496987**	**3312810**
Natural sciences	5048218	245193	4803025	3677863	1125162
Engineering and technology	3047748	156851	2890897	1640569	1250328
Medical and health sciences	296378	14172	282206	205662	76544
Agricultural sciences	2095138	45450	2049688	1606724	442964
Social sciences	776032	10653	765379	613748	151631
Humanities	1132876	114274	1018602	752421	266181
Tertiary education	**16671300**	**563261**	**16108039**	**9582561**	**6525478**
Natural sciences	3352618	141019	3211599	2171034	1040565
Engineering and technology	4415483	151530	4263953	2081266	2182687
Medical and health sciences	1654801	20932	1633869	485403	1148466
Agricultural sciences	1135699	56097	1079602	728656	350946
Social sciences	5302710	188897	5113813	3572280	1541533
Humanities	809989	4786	805203	543922	261281
Non-profit sector	**2292**	**-**	**2292**	**1033**	**1259**
Natural sciences	972	-	972	-	972
Engineering and technology	189	-	189	77	112
Social sciences	1131	-	1131	956	175
Beogradski region	**34953315**	**2577112**	**32376203**	**21863370**	**10512833**
Natural sciences	16424901	439551	15985350	11381079	4604271
Engineering and technology	9428905	1597811	7831094	4573758	3257336
Medical and health sciences	1323897	62213	1261684	657214	604470
Agricultural sciences	2807581	249767	2557814	1924636	633178
Social sciences	3136338	109775	3026563	2133768	892795
Humanities	1831693	117995	1713698	1192915	520783
Business sector	**14573587**	**1693161**	**12880426**	**8782312**	**4098114**
Natural sciences	9165125	106060	9059065	6181861	2877204
Engineering and technology	4525243	1374154	3151089	2246426	904663
Medical and health sciences	458254	39227	419027	212677	206350
Agricultural sciences	288673	161201	127472	78182	49290
Social sciences	136292	12519	123773	63166	60607
Government sector	**11025788**	**539348**	**10486440**	**7542542**	**2943898**
Natural sciences	5048218	245193	4803025	3677863	1125162
Engineering and technology	2157388	121545	2035843	1037651	998192
Medical and health sciences	296378	14172	282206	205662	76544
Agricultural sciences	1614896	33511	1581385	1255197	326188
Social sciences	776032	10653	765379	613748	151631
Humanities	1132876	114274	1018602	752421	266181
Tertiary education	**9352620**	**344603**	**9008017**	**5537483**	**3470534**
Natural sciences	2211558	88298	2123260	1521355	601905
Engineering and technology	2746085	102112	2643973	1289604	1354369
Medical and health sciences	569265	8814	560451	238875	321576
Agricultural sciences	904012	55055	848957	591257	257700
Social sciences	2222883	86603	2136280	1455898	680382
Humanities	698817	3721	695096	440494	254602
Non-profit sector	**1320**	**-**	**1320**	**1033**	**287**
Engineering and technology	189	-	189	77	112
Social sciences	1131	-	1131	956	175

8.1. Gross domestic expenditure for R&D, by sectors and fields of science, 2019 (continued)

Thous. RSD

	Gross domestic expenditure	Gross investments	Current costs		
			Total	Gross salaries	Material costs
Region Vojvodine	**9607350**	**268036**	**9339314**	**6229333**	**3109981**
Natural sciences	3152317	66017	3086300	2258362	827938
Engineering and technology	2162020	54322	2107698	1424126	683572
Medical and health sciences	958941	4230	954711	181030	773681
Agricultural sciences	744100	47225	696875	504714	192161
Social sciences	2587626	96242	2491384	1859242	632142
Humanities	2346	-	2346	1859	487
Business sector	**3444048**	**78206**	**3365842**	**2677528**	**688314**
Natural sciences	2679237	29941	2649296	2060664	588632
Engineering and technology	556496	4228	552268	475304	76964
Medical and health sciences	54826	2254	52572	39473	13099
Agricultural sciences	153489	41783	111706	102087	9619
Government sector	**1162560**	**40748**	**1121812**	**816999**	**304813**
Engineering and technology	753622	35306	718316	504414	213902
Agricultural sciences	408938	5442	403496	312585	90911
Tertiary education	**4999770**	**149082**	**4850688**	**2734806**	**2115882**
Natural sciences	472108	36076	436032	197698	238334
Engineering and technology	851902	14788	837114	444408	392706
Medical and health sciences	904115	1976	902139	141557	760582
Agricultural sciences	181673	-	181673	90042	91631
Social sciences	2587626	96242	2491384	1859242	632142
Humanities	2346	-	2346	1859	487
Non-profit sector	**972**	**-**	**972**	**-**	**972**
Natural sciences	972	-	972	-	972
Region Šumadije i Zapadne Srbije	**1703885**	**310652**	**1393233**	**925421**	**467812**
Natural sciences	535498	14976	520522	393056	127466
Engineering and technology	702203	279864	422339	195865	226474
Medical and health sciences	83256	6492	76764	19720	57044
Agricultural sciences	121904	7539	114365	86885	27480
Social sciences	217971	1781	216190	187767	28423
Humanities	43053	-	43053	42128	925
Business sector	**522020**	**279608**	**242412**	**89847**	**152565**
Natural sciences	18735	8507	10228	5232	4996
Engineering and technology	502699	271101	231598	84029	147569
Agricultural sciences	586	-	586	586	-
Government sector	**71304**	**6497**	**64807**	**38942**	**25865**
Agricultural sciences	71304	6497	64807	38942	25865
Tertiary education	**1110561**	**24547**	**1086014**	**796632**	**289382**
Natural sciences	516763	6469	510294	387824	122470
Engineering and technology	199504	8763	190741	111836	78905
Medical and health sciences	83256	6492	76764	19720	57044
Agricultural sciences	50014	1042	48972	47357	1615
Social sciences	217971	1781	216190	187767	28423
Humanities	43053	-	43053	42128	925
Region Južne i Istočne Srbije	**1809569**	**107851**	**1701718**	**819309**	**882409**
Natural sciences	210771	12318	198453	96023	102430
Engineering and technology	1085252	86547	998705	463574	535131
Medical and health sciences	98753	3650	95103	85251	9852
Agricultural sciences	74790	-	74790	45647	29143
Social sciences	274230	4271	269959	69373	200586
Humanities	65773	1065	64708	59441	5267
Business sector	**464482**	**62822**	**401660**	**207165**	**194495**
Natural sciences	58582	2142	56440	31866	24574
Engineering and technology	330522	60680	269842	129652	140190
Medical and health sciences	588	-	588	-	588
Agricultural sciences	74790	-	74790	45647	29143
Government sector	**136738**	**-**	**136738**	**98504**	**38234**
Engineering and technology	136738	-	136738	98504	38234
Tertiary education	**1208349**	**45029**	**1163320**	**513640**	**649680**
Natural sciences	152189	10176	142013	64157	77856
Engineering and technology	617992	25867	592125	235418	356707
Medical and health sciences	98165	3650	94515	85251	9264
Social sciences	274230	4271	269959	69373	200586
Humanities	65773	1065	64708	59441	5267
Region Kosovo i Metohija	**...**	**...**	**...**	**...**	**...**

9.1. Sources of funds spent on R&D activities, 2019

Thous. RSD

	Total	Own	Government and local authorities	Private and public enterprises	Tertiary education	Non-profit institutions	Foreign ordering parties
REPUBLIC OF SERBIA	**48074119**	**12015432**	**22060916**	**4370552**	**149896**	**26028**	**9451295**
Natural sciences	20323487	2190419	6848904	3931913	278	20769	7331204
Engineering and technology	13378380	5550632	6180525	308424	2018	5259	1331522
Medical and health sciences	2464847	157878	1848431	-	-	-	458538
Agricultural sciences	3748375	1660994	1897821	99143	-	-	90417
Social sciences	6216165	1974305	3836483	30797	147600	-	226980
Humanities	1942865	481204	1448752	275	-	-	12634
Business sector	**19004137**	**5320247**	**1451061**	**4003151**	**1129**	**5259**	**8223290**
Natural sciences	11921679	465165	555417	3889665	142	-	7011290
Engineering and technology	5914960	4306674	760110	113486	987	5259	728444
Medical and health sciences	513668	59093	-	-	-	-	454575
Agricultural sciences	517538	421002	67555	-	-	-	28981
Social sciences	136292	68313	67979	-	-	-	-
Government sector	**12396390**	**2754303**	**8971906**	**76483**	**1361**	**906**	**591431**
Natural sciences	5048218	843382	3974463	39703	80	906	189684
Engineering and technology	3047748	408492	2287384	30584	1031	-	320257
Medical and health sciences	296378	7185	286163	-	-	-	3030
Agricultural sciences	2095138	1098087	979631	-	-	-	17420
Social sciences	776032	50984	670196	6196	250	-	48406
Humanities	1132876	346173	774069	-	-	-	12634
Tertiary education	**16671300**	**3940882**	**11637224**	**290729**	**147406**	**19620**	**635439**
Natural sciences	3352618	881872	2318299	2545	56	19620	130226
Engineering and technology	4415483	835466	3133031	164165	-	-	282821
Medical and health sciences	1654801	91600	1562268	-	-	-	933
Agricultural sciences	1135699	141905	850635	99143	-	-	44016
Social sciences	5302710	1855008	3098308	24601	147350	-	177443
Humanities	809989	135031	674683	275	-	-	-
Non-profit sector	**2292**	**-**	**725**	**189**	**-**	**243**	**1135**
Natural sciences	972	-	725	-	-	243	4
Engineering and technology	189	-	-	189	-	-	-
Social sciences	1131	-	-	-	-	-	1131
Beogradski region	**34953315**	**9953166**	**14971223**	**3448063**	**1459**	**25785**	**6553619**
Natural sciences	16424901	1981753	5865519	3211832	222	20526	5345049
Engineering and technology	9428905	4570972	4171689	110195	987	5259	569803
Medical and health sciences	1323897	50811	855428	-	-	-	417658
Agricultural sciences	2807581	1495861	1157988	99143	-	-	54589
Social sciences	3136338	1395034	1560550	26618	250	-	153886
Humanities	1831693	458735	1360049	275	-	-	12634
Business sector	**14573587**	**4167615**	**1219800**	**3208295**	**1129**	**5259**	**5971489**
Natural sciences	9165125	412666	466488	3169584	142	-	5116245
Engineering and technology	4525243	3387141	657026	38711	987	5259	436119
Medical and health sciences	458254	43626	-	-	-	-	414628
Agricultural sciences	288673	255869	28307	-	-	-	4497
Social sciences	136292	68313	67979	-	-	-	-
Government sector	**11025788**	**2717762**	**7991732**	**45899**	**330**	**906**	**269159**
Natural sciences	5048218	843382	3974463	39703	80	906	189684
Engineering and technology	2157388	371951	1776108	-	-	-	9329
Medical and health sciences	296378	7185	286163	-	-	-	3030
Agricultural sciences	1614896	1098087	510733	-	-	-	6076
Social sciences	776032	50984	670196	6196	250	-	48406
Humanities	1132876	346173	774069	-	-	-	12634
Tertiary education	**9352620**	**3067789**	**5759691**	**193680**	**-**	**19620**	**311840**
Natural sciences	2211558	725705	1424568	2545	-	19620	39120
Engineering and technology	2746085	811880	1738555	71295	-	-	124355
Medical and health sciences	569265	-	569265	-	-	-	-
Agricultural sciences	904012	141905	618948	99143	-	-	44016
Social sciences	2222883	1275737	822375	20422	-	-	104349
Humanities	698817	112562	585980	275	-	-	-
Non-profit sector	**1320**	**-**	**-**	**189**	**-**	**-**	**1131**
Engineering and technology	189	-	-	189	-	-	-
Social sciences	1131	-	-	-	-	-	1131

9.1. Sources of funds spent on R&D activities, 2019 (continued)

Thous. RSD

	Total	Own	Government and local authorities	Private and public enterprises	Tertiary education	Non-profit institutions	Foreign ordering parties
Region Vojvodine	**9607350**	**1269049**	**5042950**	**778215**	**91479**	**243**	**2425414**
Natural sciences	3152317	106109	351978	714445	-	243	1979542
Engineering and technology	2162020	521508	1226315	62238	1031	-	350928
Medical and health sciences	958941	101482	817512	-	-	-	39947
Agricultural sciences	744100	108044	600228	-	-	-	35828
Social sciences	2587626	431906	2044571	1532	90448	-	19169
Humanities	2346	-	2346	-	-	-	-
Business sector	**3444048**	**624391**	**74795**	**745974**	**-**	**-**	**1998888**
Natural sciences	2679237	16501	53834	714445	-	-	1894457
Engineering and technology	556496	484967	-	31529	-	-	40000
Medical and health sciences	54826	14879	-	-	-	-	39947
Agricultural sciences	153489	108044	20961	-	-	-	24484
Government sector	**1162560**	**36541**	**772132**	**30584**	**1031**	**-**	**322272**
Engineering and technology	753622	36541	374538	30584	1031	-	310928
Agricultural sciences	408938	-	397594	-	-	-	11344
Tertiary education	**4999770**	**608117**	**4195298**	**1657**	**90448**	**-**	**104250**
Natural sciences	472108	89608	297419	-	-	-	85081
Engineering and technology	851902	-	851777	125	-	-	-
Medical and health sciences	904115	86603	817512	-	-	-	-
Agricultural sciences	181673	-	181673	-	-	-	-
Social sciences	2587626	431906	2044571	1532	90448	-	19169
Humanities	2346	-	2346	-	-	-	-
Non-profit sector	**972**	**-**	**725**	**-**	**-**	**243**	**4**
Natural sciences	972	-	725	-	-	243	4
Region Šumadije i Zapadne Srbije	**1703885**	**456222**	**1021194**	**15345**	**56**	**-**	**211068**
Natural sciences	535498	79658	447749	5636	56	-	2399
Engineering and technology	702203	370431	166827	9709	-	-	155236
Medical and health sciences	83256	4997	77326	-	-	-	933
Agricultural sciences	121904	586	121318	-	-	-	-
Social sciences	217971	550	164921	-	-	-	52500
Humanities	43053	-	43053	-	-	-	-
Business sector	**522020**	**362835**	**15430**	**15345**	**-**	**-**	**128410**
Natural sciences	18735	13099	-	5636	-	-	-
Engineering and technology	502699	349150	15430	9709	-	-	128410
Agricultural sciences	586	586	-	-	-	-	-
Government sector	**71304**	**-**	**71304**	**-**	**-**	**-**	**-**
Agricultural sciences	71304	-	71304	-	-	-	-
Tertiary education	**1110561**	**93387**	**934460**	**-**	**56**	**-**	**82658**
Natural sciences	516763	66559	447749	-	56	-	2399
Engineering and technology	199504	21281	151397	-	-	-	26826
Medical and health sciences	83256	4997	77326	-	-	-	933
Agricultural sciences	50014	-	50014	-	-	-	-
Social sciences	217971	550	164921	-	-	-	52500
Humanities	43053	-	43053	-	-	-	-
Region Južne i Istočne Srbije	**1809569**	**336995**	**1025549**	**128929**	**56902**	**-**	**261194**
Natural sciences	210771	22899	183658	-	-	-	4214
Engineering and technology	1085252	87721	615694	126282	-	-	255555
Medical and health sciences	98753	588	98165	-	-	-	-
Agricultural sciences	74790	56503	18287	-	-	-	-
Social sciences	274230	146815	66441	2647	56902	-	1425
Humanities	65773	22469	43304	-	-	-	-
Business sector	**464482**	**165406**	**141036**	**33537**	**-**	**-**	**124503**
Natural sciences	58582	22899	35095	-	-	-	588
Engineering and technology	330522	85416	87654	33537	-	-	123915
Medical and health sciences	588	588	-	-	-	-	-
Agricultural sciences	74790	56503	18287	-	-	-	-
Government sector	**136738**	**-**	**136738**	**-**	**-**	**-**	**-**
Engineering and technology	136738	-	136738	-	-	-	-
Tertiary education	**1208349**	**171589**	**747775**	**95392**	**56902**	**-**	**136691**
Natural sciences	152189	-	148563	-	-	-	3626
Engineering and technology	617992	2305	391302	92745	-	-	131640
Medical and health sciences	98165	-	98165	-	-	-	-
Social sciences	274230	146815	66441	2647	56902	-	1425
Humanities	65773	22469	43304	-	-	-	-
Region Kosovo i Metohija	**...**	**...**	**...**	**...**	**...**	**...**	**...**

9.2. Sources of funds spent on R&D activities, 2019

%

	Total	Own	Government and local authorities	Private and public enterprises	Tertiary education	Non-profit institutions	Foreign ordering parties
REPUBLIC OF SERBIA	**100,0**	**25,0**	**45,9**	**9,1**	**0,3**	**0,1**	**19,7**
Natural sciences	100,0	10,8	33,7	19,3	0,0	0,1	36,1
Engineering and technology	100,0	41,5	46,2	2,3	0,0	0,0	10,0
Medical and health sciences	100,0	6,4	75,0	-	-	-	18,6
Agricultural sciences	100,0	44,3	50,6	2,6	-	-	2,4
Social sciences	100,0	31,8	61,7	0,5	2,4	-	3,7
Humanities	100,0	24,8	74,6	0,0	-	-	0,7
Business sector	**100,0**	**28,0**	**7,6**	**21,1**	**0,0**	**0,0**	**43,3**
Natural sciences	100,0	3,9	4,7	32,6	0,0	-	58,8
Engineering and technology	100,0	72,8	12,9	1,9	0,0	0,1	12,3
Medical and health sciences	100,0	11,5	-	-	-	-	88,5
Agricultural sciences	100,0	81,3	13,1	-	-	-	5,6
Social sciences	100,0	50,1	49,9	-	-	-	-
Government sector	**100,0**	**22,2**	**72,4**	**0,6**	**0,0**	**0,0**	**4,8**
Natural sciences	100,0	16,7	78,7	0,8	0,0	0,0	3,8
Engineering and technology	100,0	13,4	75,1	1,0	0,0	-	10,5
Medical and health sciences	100,0	2,4	96,6	-	-	-	1,0
Agricultural sciences	100,0	52,4	46,8	-	-	-	0,8
Social sciences	100,0	6,6	86,4	0,8	0,0	-	6,2
Humanities	100,0	30,6	68,3	-	-	-	1,1
Tertiary education	**100,0**	**23,6**	**69,8**	**1,7**	**0,9**	**0,1**	**3,8**
Natural sciences	100,0	26,3	69,1	0,1	0,0	0,6	3,9
Engineering and technology	100,0	18,9	71,0	3,7	-	-	6,4
Medical and health sciences	100,0	5,5	94,4	-	-	-	0,1
Agricultural sciences	100,0	12,5	74,9	8,7	-	-	3,9
Social sciences	100,0	35,0	58,4	0,5	2,8	-	3,3
Humanities	100,0	16,7	83,3	0,0	-	-	-
Non-profit sector	**100,0**	**-**	**31,6**	**8,2**	**-**	**10,6**	**49,5**
Natural sciences	100,0	-	74,6	-	-	25,0	0,4
Engineering and technology	100,0	-	-	100,0	-	-	-
Social sciences	100,0	-	-	-	-	-	100,0
Beogradski region	**100,0**	**28,5**	**42,8**	**9,9**	**0,0**	**0,1**	**18,7**
Natural sciences	100,0	12,1	35,7	19,6	0,0	0,1	32,5
Engineering and technology	100,0	48,5	44,2	1,2	0,0	0,1	6,0
Medical and health sciences	100,0	3,8	64,6	-	-	-	31,5
Agricultural sciences	100,0	53,3	41,2	3,5	-	-	1,9
Social sciences	100,0	44,5	49,8	0,8	0,0	-	4,9
Humanities	100,0	25,0	74,3	0,0	-	-	0,7
Business sector	**100,0**	**28,6**	**8,4**	**22,0**	**0,0**	**0,0**	**41,0**
Natural sciences	100,0	4,5	5,1	34,6	0,0	-	55,8
Engineering and technology	100,0	74,8	14,5	0,9	0,0	0,1	9,6
Medical and health sciences	100,0	9,5	-	-	-	-	90,5
Agricultural sciences	100,0	88,6	9,8	-	-	-	1,6
Social sciences	100,0	50,1	49,9	-	-	-	-
Government sector	**100,0**	**24,6**	**72,5**	**0,4**	**0,0**	**0,0**	**2,4**
Natural sciences	100,0	16,7	78,7	0,8	0,0	0,0	3,8
Engineering and technology	100,0	17,2	82,3	-	-	-	0,4
Medical and health sciences	100,0	2,4	96,6	-	-	-	1,0
Agricultural sciences	100,0	68,0	31,6	-	-	-	0,4
Social sciences	100,0	6,6	86,4	0,8	0,0	-	6,2
Humanities	100,0	30,6	68,3	-	-	-	1,1
Tertiary education	**100,0**	**32,8**	**61,6**	**2,1**	**-**	**0,2**	**3,3**
Natural sciences	100,0	32,8	64,4	0,1	-	0,9	1,8
Engineering and technology	100,0	29,6	63,3	2,6	-	-	4,5
Medical and health sciences	100,0	-	100,0	-	-	-	-
Agricultural sciences	100,0	15,7	68,5	11,0	-	-	4,9
Social sciences	100,0	57,4	37,0	0,9	-	-	4,7
Humanities	100,0	16,1	83,9	0,0	-	-	-
Non-profit sector	**100,0**	**-**	**-**	**14,3**	**-**	**-**	**85,7**
Engineering and technology	100,0	-	-	100,0	-	-	-
Social sciences	100,0	-	-	-	-	-	100,0

9.2. Sources of funds spent on R&D activities, 2019 (continued)

%

	Total	Own	Government and local authorities	Private and public enterprises	Tertiary education	Non-profit institutions	Foreign ordering parties
Region Vojvodine	**100,0**	**13,2**	**52,5**	**8,1**	**1,0**	**0,0**	**25,2**
Natural sciences	100,0	3,4	11,2	22,7	-	0,0	62,8
Engineering and technology	100,0	24,1	56,7	2,9	0,0	-	16,2
Medical and health sciences	100,0	10,6	85,3	-	-	-	4,2
Agricultural sciences	100,0	14,5	80,7	-	-	-	4,8
Social sciences	100,0	16,7	79,0	0,1	3,5	-	0,7
Humanities	100,0	-	100,0	-	-	-	-
Business sector	**100,0**	**18,1**	**2,2**	**21,7**	**-**	**-**	**58,0**
Natural sciences	100,0	0,6	2,0	26,7	-	-	70,7
Engineering and technology	100,0	87,1	-	5,7	-	-	7,2
Medical and health sciences	100,0	27,1	-	-	-	-	72,9
Agricultural sciences	100,0	70,4	13,7	-	-	-	16,0
Government sector	**100,0**	**3,1**	**66,4**	**2,6**	**0,1**	**-**	**27,7**
Engineering and technology	100,0	4,8	49,7	4,1	0,1	-	41,3
Agricultural sciences	100,0	-	97,2	-	-	-	2,8
Tertiary education	**100,0**	**12,2**	**83,9**	**0,0**	**1,8**	**-**	**2,1**
Natural sciences	100,0	19,0	63,0	-	-	-	18,0
Engineering and technology	100,0	-	100,0	0,0	-	-	-
Medical and health sciences	100,0	9,6	90,4	-	-	-	-
Agricultural sciences	100,0	-	100,0	-	-	-	-
Social sciences	100,0	16,7	79,0	0,1	3,5	-	0,7
Humanities	100,0	-	100,0	-	-	-	-
Non-profit sector	**100,0**	**-**	**74,6**	**-**	**-**	**25,0**	**0,4**
Natural sciences	100,0	-	74,6	-	-	25,0	0,4
Region Šumadije i Zapadne Srbije	**100,0**	**26,8**	**59,9**	**0,9**	**0,0**	**-**	**12,4**
Natural sciences	100,0	14,9	83,6	1,1	0,0	-	0,4
Engineering and technology	100,0	52,8	23,8	1,4	-	-	22,1
Medical and health sciences	100,0	6,0	92,9	-	-	-	1,1
Agricultural sciences	100,0	0,5	99,5	-	-	-	-
Social sciences	100,0	0,3	75,7	-	-	-	24,1
Humanities	100,0	-	100,0	-	-	-	-
Business sector	**100,0**	**69,5**	**3,0**	**2,9**	**-**	**-**	**24,6**
Natural sciences	100,0	69,9	-	30,1	-	-	-
Engineering and technology	100,0	69,5	3,1	1,9	-	-	25,5
Agricultural sciences	100,0	100,0	-	-	-	-	-
Government sector	**100,0**	**-**	**100,0**	**-**	**-**	**-**	**-**
Agricultural sciences	100,0	-	100,0	-	-	-	-
Tertiary education	**100,0**	**8,4**	**84,1**	**-**	**0,0**	**-**	**7,4**
Natural sciences	100,0	12,9	86,6	-	0,0	-	0,5
Engineering and technology	100,0	10,7	75,9	-	-	-	13,4
Medical and health sciences	100,0	6,0	92,9	-	-	-	1,1
Agricultural sciences	100,0	-	100,0	-	-	-	-
Social sciences	100,0	0,3	75,7	-	-	-	24,1
Humanities	100,0	-	100,0	-	-	-	-
Region Južne i Istočne Srbije	**100,0**	**18,6**	**56,7**	**7,1**	**3,1**	**-**	**14,4**
Natural sciences	100,0	10,9	87,1	-	-	-	2,0
Engineering and technology	100,0	8,1	56,7	11,6	-	-	23,5
Medical and health sciences	100,0	0,6	99,4	-	-	-	-
Agricultural sciences	100,0	75,5	24,5	-	-	-	-
Social sciences	100,0	53,5	24,2	1,0	20,7	-	0,5
Humanities	100,0	34,2	65,8	-	-	-	-
Business sector	**100,0**	**35,6**	**30,4**	**7,2**	**-**	**-**	**26,8**
Natural sciences	100,0	39,1	59,9	-	-	-	1,0
Engineering and technology	100,0	25,8	26,5	10,1	-	-	37,5
Medical and health sciences	100,0	100,0	-	-	-	-	-
Agricultural sciences	100,0	75,5	24,5	-	-	-	-
Government sector	**100,0**	**-**	**100,0**	**-**	**-**	**-**	**-**
Engineering and technology	100,0	-	100,0	-	-	-	-
Tertiary education	**100,0**	**14,2**	**61,9**	**7,9**	**4,7**	**-**	**11,3**
Natural sciences	100,0	-	97,6	-	-	-	2,4
Engineering and technology	100,0	0,4	63,3	15,0	-	-	21,3
Medical and health sciences	100,0	-	100,0	-	-	-	-
Social sciences	100,0	53,5	24,2	1,0	20,7	-	0,5
Humanities	100,0	34,2	65,8	-	-	-	-
Region Kosovo i Metohija	**...**	**...**	**...**	**...**	**...**	**...**	**...**

10.1. Gross domestic expenditure on R&D by groupings of activities, 2019

Thous. RSD

	Gross domestic expenditure	Gross investments	Current costs		
			Total	Gross salaries	Material costs
REPUBLIC OF SERBIA	**48074119**	**3263651**	**44810468**	**29837433**	**14973035**
Crop and animal production, hunting and related activities	453252	142281	310971	162549	148422
Other mining and quarrying	678771	67171	611600	458995	152605
Mining support service activities	749490	11406	738084	721203	16881
Manufacture of food products	7668	-	7668	4293	3375
Manufacture of beverages	8431	2936	5495	4831	664
Manufacture of chemicals and chemical products	48081	80	48001	30363	17638
Manufacture of basic pharmaceutical products and pharmaceutical preparations	27186	3820	23366	19066	4300
Manufacture of rubber and plastic products	86544	49246	37298	33105	4193
Manufacture of other non-metallic mineral products	219696	204053	15643	10296	5347
Manufacture of fabricated metal products, except machinery and equipment	8647	-	8647	-	8647
Manufacture of computer, electronic and optical products	278759	34146	244613	203171	41442
Manufacture of machinery and equipment, n.e.c.	956529	593436	363093	205281	157812
Manufacture of motor vehicles, trailers and semi-trailers	52387	-	52387	-	52387
Manufacture of other transport equipment	17117	-	17117	12379	4738
Repair and installation of machinery and equipment	318145	-	318145	318145	-
Electricity, gas, steam and air conditioning supply	544763	534957	9806	1613	8193
Construction of buildings	178381	161999	16382	7473	8909
Wholesale trade, except of motor vehicles and motorcycles	102245	33508	68737	37448	31289
Telecommunications	42234	-	42234	24534	17700
Computer programming, consultancy and related activities	202138	17418	184720	98265	86455
Activities of head offices; management consultancy activities	250170	4483	245687	213143	32544
Architectural and engineering activities; technical testing and analysis	41669	4027	37642	31673	5969
Scientific and research development	25862824	831173	25031651	17513973	7517678
Advertising and market research	153569	825	152744	59531	93213
Other professional, scientific and technical activities	1800	1800	-	-	-
Veterinary sciences	86946	3821	83125	67774	15351
Educational science	16659289	561065	16098224	9573114	6525110
Human health activities	33008	-	33008	24182	8826
Libraries, archives, museums and other cultural activities	2088	-	2088	-	2088
Activities of membership organisations	2292	-	2292	1033	1259
Business sector	**19004137**	**2113797**	**16890340**	**11756852**	**5133488**
Crop and animal production, hunting and related activities	93451	39264	54187	54187	-
Other mining and quarrying	678771	67171	611600	458995	152605
Mining support service activities	749490	11406	738084	721203	16881
Manufacture of food products	7668	-	7668	4293	3375
Manufacture of beverages	8431	2936	5495	4831	664
Manufacture of chemicals and chemical products	48081	80	48001	30363	17638
Manufacture of basic pharmaceutical products and pharmaceutical preparations	27186	3820	23366	19066	4300
Manufacture of rubber and plastic products	86544	49246	37298	33105	4193
Manufacture of other non-metallic mineral products	219696	204053	15643	10296	5347
Manufacture of fabricated metal products, except machinery and equipment	8647	-	8647	-	8647
Manufacture of computer, electronic and optical products	278759	34146	244613	203171	41442
Manufacture of machinery and equipment, n.e.c.	956529	593436	363093	205281	157812
Manufacture of motor vehicles, trailers and semi-trailers	52387	-	52387	-	52387
Manufacture of other transport equipment	17117	-	17117	12379	4738
Repair and installation of machinery and equipment	318145	-	318145	318145	-
Electricity, gas, steam and air conditioning supply	544763	534957	9806	1613	8193
Construction of buildings	178381	161999	16382	7473	8909
Wholesale trade, except of motor vehicles and motorcycles	102245	33508	68737	37448	31289
Telecommunications	42234	-	42234	24534	17700
Computer programming, consultancy and related activities	202138	17418	184720	98265	86455
Activities of head offices; management consultancy activities	250170	4483	245687	213143	32544
Architectural and engineering activities; technical testing and analysis	41669	4027	37642	31673	5969
Scientific and research development	14010138	350047	13660091	9262345	4397746
Advertising and market research	77609	-	77609	5043	72566
Other professional, scientific and technical activities	1800	1800	-	-	-
Libraries, archives, museums and other cultural activities	2088	-	2088	-	2088
Government sector	**12396390**	**586593**	**11809797**	**8496987**	**3312810**
Crop and animal production, hunting and related activities	359801	103017	256784	108362	148422
Scientific and research development	11840675	478930	11361745	8242181	3119564
Advertising and market research	75960	825	75135	54488	20647
Veterinary sciences	86946	3821	83125	67774	15351
Human health activities	33008	-	33008	24182	8826

10.1. Gross domestic expenditure on R&D by groupings of activities, 2019 (continued)

Thous. RSD

	Gross domestic expenditure	Gross investments	Current costs		
			Total	Gross salaries	Material costs
Tertiary education	**16671300**	**563261**	**16108039**	**9582561**	**6525478**
Scientific and research development	12011	2196	9815	9447	368
Educational science	16659289	561065	16098224	9573114	6525110
Non-profit sector	**2292**	**-**	**2292**	**1033**	**1259**
Activities of membership organisations	2292	-	2292	1033	1259
Beogradski region	**34953315**	**2577112**	**32376203**	**21863370**	**10512833**
Crop and animal production, hunting and related activities	359801	103017	256784	108362	148422
Other mining and quarrying	677720	67136	610584	458995	151589
Mining support service activities	35045	11406	23639	11505	12134
Manufacture of food products	7668	-	7668	4293	3375
Manufacture of beverages	7843	2936	4907	4831	76
Manufacture of chemicals and chemical products	48081	80	48001	30363	17638
Manufacture of computer, electronic and optical products	208351	750	207601	180605	26996
Manufacture of machinery and equipment, n.e.c.	937916	589698	348218	203389	144829
Manufacture of other transport equipment	17117	-	17117	12379	4738
Electricity, gas, steam and air conditioning supply	542161	534787	7374	-	7374
Construction of buildings	178381	161999	16382	7473	8909
Wholesale trade, except of motor vehicles and motorcycles	92950	33508	59442	37448	21994
Telecommunications	42234	-	42234	24534	17700
Computer programming, consultancy and related activities	180485	701	179784	96912	82872
Activities of head offices; management consultancy activities	200233	3220	197013	174918	22095
Architectural and engineering activities; technical testing and analysis	22303	798	21505	20294	1211
Scientific and research development	21866520	723844	21142676	14874287	6268389
Advertising and market research	153569	825	152744	59531	93213
Educational science	9340609	342407	8998202	5528036	3470166
Human health activities	33008	-	33008	24182	8826
Activities of membership organisations	1320	-	1320	1033	287
Business sector	**14573587**	**1693161**	**12880426**	**8782312**	**4098114**
Other mining and quarrying	677720	67136	610584	458995	151589
Mining support service activities	35045	11406	23639	11505	12134
Manufacture of food products	7668	-	7668	4293	3375
Manufacture of beverages	7843	2936	4907	4831	76
Manufacture of chemicals and chemical products	48081	80	48001	30363	17638
Manufacture of computer, electronic and optical products	208351	750	207601	180605	26996
Manufacture of machinery and equipment, n.e.c.	937916	589698	348218	203389	144829
Manufacture of other transport equipment	17117	-	17117	12379	4738
Electricity, gas, steam and air conditioning supply	542161	534787	7374	-	7374
Construction of buildings	178381	161999	16382	7473	8909
Wholesale trade, except of motor vehicles and motorcycles	92950	33508	59442	37448	21994
Telecommunications	42234	-	42234	24534	17700
Computer programming, consultancy and related activities	180485	701	179784	96912	82872
Activities of head offices; management consultancy activities	200233	3220	197013	174918	22095
Architectural and engineering activities; technical testing and analysis	22303	798	21505	20294	1211
Scientific and research development	11297490	286142	11011348	7509330	3502018
Advertising and market research	77609	-	77609	5043	72566
Government sector	**11025788**	**539348**	**10486440**	**7542542**	**2943898**
Crop and animal production, hunting and related activities	359801	103017	256784	108362	148422
Scientific and research development	10557019	435506	10121513	7355510	2766003
Advertising and market research	75960	825	75135	54488	20647
Human health activities	33008	-	33008	24182	8826
Tertiary education	**9352620**	**344603**	**9008017**	**5537483**	**3470534**
Scientific and research development	12011	2196	9815	9447	368
Educational science	9340609	342407	8998202	5528036	3470166
Non-profit sector	**1320**	**-**	**1320**	**1033**	**287**
Activities of membership organisations	1320	-	1320	1033	287
Region Vojvodine	**9607350**	**268036**	**9339314**	**6229333**	**3109981**
Crop and animal production, hunting and related activities	93451	39264	54187	54187	-
Mining support service activities	714445	-	714445	709698	4747
Manufacture of rubber and plastic products	10820	-	10820	10468	352
Manufacture of other non-metallic mineral products	15643	-	15643	10296	5347
Repair and installation of machinery and equipment	318145	-	318145	318145	-
Computer programming, consultancy and related activities	13146	8210	4936	1353	3583
Activities of head offices; management consultancy activities	49937	1263	48674	38225	10449
Architectural and engineering activities; technical testing and analysis	19366	3229	16137	11379	4758
Scientific and research development	3284709	63167	3221542	2273002	948540
Veterinary sciences	86946	3821	83125	67774	15351
Educational science	4999770	149082	4850688	2734806	2115882
Activities of membership organisations	972	-	972	-	972

10.1. Gross domestic expenditure on R&D by groupings of activities, 2019 (continued)

Thous. RSD

	Gross domestic expenditure	Gross investments	Current costs		
			Total	Gross salaries	Material costs
Business sector	**3444048**	**78206**	**3365842**	**2677528**	**688314**
Crop and animal production, hunting and related activities	93451	39264	54187	54187	-
Mining support service activities	714445	-	714445	709698	4747
Manufacture of rubber and plastic products	10820	-	10820	10468	352
Manufacture of other non-metallic mineral products	15643	-	15643	10296	5347
Repair and installation of machinery and equipment	318145	-	318145	318145	-
Computer programming, consultancy and related activities	13146	8210	4936	1353	3583
Activities of head offices; management consultancy activities	49937	1263	48674	38225	10449
Architectural and engineering activities; technical testing and analysis	19366	3229	16137	11379	4758
Scientific and research development	2209095	26240	2182855	1523777	659078
Government sector	**1162560**	**40748**	**1121812**	**816999**	**304813**
Scientific and research development	1075614	36927	1038687	749225	289462
Veterinary sciences	86946	3821	83125	67774	15351
Tertiary education	**4999770**	**149082**	**4850688**	**2734806**	**2115882**
Educational sciences	4999770	149082	4850688	2734806	2115882
Non-profit sector	**972**	**-**	**972**	**-**	**972**
Activities of membership organisations	972	-	972	-	972
Region Šumadije i Zapadne Srbije	**1703885**	**310652**	**1393233**	**925421**	**467812**
Other mining and quarrying	1051	35	1016	-	1016
Manufacture of rubber and plastic products	75724	49246	26478	22637	3841
Manufacture of other non-metallic mineral products	204053	204053	-	-	-
Manufacture of fabricated metal products, except machinery and equipment	8647	-	8647	-	8647
Manufacture of machinery and equipment, n.e.c.	18613	3738	14875	1892	12983
Manufacture of motor vehicles, trailers and semi-trailers	52387	-	52387	-	52387
Electricity, gas, steam and air conditioning supply	2602	170	2432	1613	819
Wholesale trade, except of motor vehicles and motorcycles	9295	-	9295	-	9295
Computer programming, consultancy and related activities	8507	8507	-	-	-
Scientific and research development	210645	18556	192089	102647	89442
Other professional, scientific and technical activities	1800	1800	-	-	-
Educational science	1110561	24547	1086014	796632	289382
Business sector	**522020**	**279608**	**242412**	**89847**	**152565**
Other mining and quarrying	1051	35	1016	-	1016
Manufacture of rubber and plastic products	75724	49246	26478	22637	3841
Manufacture of other non-metallic mineral products	204053	204053	-	-	-
Manufacture of fabricated metal products, except machinery and equipment	8647	-	8647	-	8647
Manufacture of machinery and equipment, n.e.c.	18613	3738	14875	1892	12983
Manufacture of motor vehicles, trailers and semi-trailers	52387	-	52387	-	52387
Electricity, gas, steam and air conditioning supply	2602	170	2432	1613	819
Wholesale trade, except of motor vehicles and motorcycles	9295	-	9295	-	9295
Computer programming, consultancy and related activities	8507	8507	-	-	-
Scientific and research development	139341	12059	127282	63705	63577
Other professional, scientific and technical activities	1800	1800	-	-	-
Government sector	**71304**	**6497**	**64807**	**38942**	**25865**
Scientific and research development	71304	6497	64807	38942	25865
Tertiary education	**1110561**	**24547**	**1086014**	**796632**	**289382**
Educational sciences	1110561	24547	1086014	796632	289382
Region Južne i Istočne Srbije	**1809569**	**107851**	**1701718**	**819309**	**882409**
Manufacture of beverages	588	-	588	-	588
Manufacture of basic pharmaceutical products and pharmaceutical preparations	27186	3820	23366	19066	4300
Manufacture of computer, electronic and optical products	70408	33396	37012	22566	14446
Scientific and research development	500950	25606	475344	264037	211307
Educational science	1208349	45029	1163320	513640	649680
Libraries, archives, museums and other cultural activities	2088	-	2088	-	2088
Business sector	**464482**	**62822**	**401660**	**207165**	**194495**
Manufacture of beverages	588	-	588	-	588
Manufacture of basic pharmaceutical products and pharmaceutical preparations	27186	3820	23366	19066	4300
Manufacture of computer, electronic and optical products	70408	33396	37012	22566	14446
Scientific and research development	364212	25606	338606	165533	173073
Libraries, archives, museums and other cultural activities	2088	-	2088	-	2088
Government sector	**136738**	**-**	**136738**	**98504**	**38234**
Scientific and research development	136738	-	136738	98504	38234
Tertiary education	**1208349**	**45029**	**1163320**	**513640**	**649680**
Educational sciences	1208349	45029	1163320	513640	649680
Region Kosovo i Metohija	**...**	**...**	**...**	**...**	**...**

11.1. Expenditures for the purchase of R&D services from third persons, 2019

Thous. RSD

	Total expenditures for R&D services purchase
REPUBLIC OF SERBIA	**1828566**
Subjects in the country	1656154
Business subjects	1459090
Government sector (public R&D institutions)	136255
Private R&D institutes/laboratories	41145
Universities and other tertiary education institutions	16409
Private non-profit organisations	3255
Subjects abroad	172412
Business subjects	37739
Government sector (public R&D institutions)	319
Private R&D institutes/laboratories	1405
Universities and other tertiary education institutions	131685
Private non-profit organisations	1264
Business sector	**1277000**
Subjects in the country	1259000
Business subjects	1126128
Government sector (public R&D institutions)	88284
Private R&D institutes/laboratories	29762
Universities and other tertiary education institutions	14826
Subjects abroad	18000
Business subjects	18000
Government sector	**368020**
Subjects in the country	342309
Business subjects	288473
Government sector (public R&D institutions)	42515
Private R&D institutes/laboratories	9882
Universities and other tertiary education institutions	1439
Subjects abroad	25711
Business subjects	11633
Government sector (public R&D institutions)	319
Private R&D institutes/laboratories	1405
Universities and other tertiary education institutions	11090
Private non-profit organisations	1264
Tertiary education	**183173**
Subjects in the country	54472
Business subjects	44116
Government sector (public R&D institutions)	5456
Private R&D institutes/laboratories	1501
Universities and other tertiary education institutions	144
Private non-profit organisations	3255
Subjects abroad	128701
Business subjects	8106
Universities and other tertiary education institutions	120595
Non-profit sector	**373**
Subjects in the country	373
Business subjects	373
Beogradski region	**1291150**
Subjects in the country	1256649
Business subjects	1154606
Government sector (public R&D institutions)	53463
Private R&D institutes/laboratories	39868
Universities and other tertiary education institutions	8712
Subjects abroad	34501
Business subjects	29163
Private R&D institutes/laboratories	1405
Universities and other tertiary education institutions	2669
Private non-profit organisations	1264
Business sector	**936400**
Subjects in the country	918870
Business subjects	859808
Government sector (public R&D institutions)	22772
Private R&D institutes/laboratories	28485
Universities and other tertiary education institutions	7805
Subjects abroad	17530
Business subjects	17530

11.1. Expenditures for the purchase of R&D services from third persons, 2019 (continued)

Thous. RSD

	Total expenditures for R&D services purchase
Government sector	**346719**
Subejcts in the country	329748
Business subjects	288412
Government sector (public R&D institutions)	30691
Private R&D institutes/laboratories	9882
Universities and other tertiary education institutions	763
Subjects abroad	16971
Business subjects	11633
Private R&D institutes/laboratories	1405
Universities and other tertiary education institutions	2669
Private non-profit organisations	1264
Tertiary education	**7658**
Subjects in the country	7658
Business subjects	6013
Private R&D institutes/laboratories	1501
Universities and other tertiary education institutions	144
Non-profit sector	**373**
Subjects in the country	373
Business subjects	373
Region Vojvodine	**396556**
Subjects in the country	259369
Business subjects	237558
Government sector (public R&D institutions)	17280
Private R&D institutes/laboratories	600
Universities and other tertiary education institutions	676
Private non-profit organisations	3255
Subjects abroad	137187
Business subjects	7852
Government sector (public R&D institutions)	319
Universities and other tertiary education institutions	129016
Business sector	**199994**
Subjects in the country	199994
Business subjects	199394
Private R&D institutes/laboratories	600
Government sector	**21301**
Subjects in the country	12561
Business subjects	61
Government sector (public R&D institutions)	11824
Universities and other tertiary education institutions	676
Subjects abroad	8740
Government sector (public R&D institutions)	319
Universities and other tertiary education institutions	8421
Tertiary education	**175261**
Subjects in the country	46814
Business subjects	38103
Government sector (public R&D institutions)	5456
Private non-profit organisations	3255
Subjects abroad	128447
Business subjects	7852
Universities and other tertiary education institutions	120595
Region Šumadije i Zapadne Srbije Србије	**89565**
Subjects in the country	89095
Business subjects	18446
Government sector (public R&D institutions)	65512
Private R&D institutes/laboratories	677
Universities and other tertiary education institutions	4460
Subjects abroad	470
Business subjects	470

11.1. Expenditures for the purchase of R&D services from third persons, 2019 (continued)

Thous. RSD

	Total expenditures for R&D services purchase
Business sector	**89565**
Subjects in the country	89095
Business subjects	18446
Government sector (public R&D institutions)	65512
Private R&D institutes/laboratories	677
Universities and other tertiary education institutions	4460
Subjects abroad	470
Business subjects	470
Region Južne i Istočne Srbije	**51295**
Subjects in the country	51041
Business subjects	48480
Universities and other tertiary education institutions	2561
Subjects abroad	254
Business subjects	254
Business sector	**51041**
Subjects in the country	51041
Business subjects	48480
Universities and other tertiary education institutions	2561
Tertiary education	**254**
Subjects abroad	254
Business subjects	254
Region Kosovo i Metohija	**...**

Annex

REPUBLIC OF SERBIA
Statistical Office of the Republic of Serbia

Form IR

Law on Official Statistics",
"Official Gazette of the RS", number 104/2009

Survey code: 021010

ANNUAL REPORT FOR DEVELOPMENT AND RESEARCH FOR BUSINESS SUBJECTS AND CENTRES OF EXCELLENCE, FACULTIES AND NON-PROFIT ORGANISATIONS IN 2019

The obligation to provide data is stipulated in Article 26, and 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 2019.
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 **October 2, 2020** 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.

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 (annexed)

1. FULL-TIME AND PART-TIME EMPLOYEES ENGAGED IN R&D ACTIVITIES, EXPRESSED IN THE NUMBER OF PHYSICAL PERSONS AND FULL-TIME EQUIVALENT, 2019

		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	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, 2019

		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, 2019

		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									X	X
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									X	X
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, 2019

		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									X	X
04	Technicians										
05	Other personnel										
Employees engagged 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									X	X
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, 2019

		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 2019		Researchers who **came** to Serbia in 2019		Researchers who **went** abroad in 2019		**Planned** number of researchers for 2020
		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 01/01/2019 and 31/12/2019, 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 01/01/2019 and 31/12/2019 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, 2019 (in thousands RSD)

	Expenditure for R&D			Spent in 2019	Planned for 2020
	a			1	2
01	**Total expenditure for R&D (02+08+13)**				
02	Current costs	Labour costs and employees remunerations	**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		Other current costs	**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, 2019

	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), 2019

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								
06	Medical sciences								
07	Agricultural 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 2019.
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, 2019 (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 _____ 2020

Filled in by: Responsible person:

_____ _____
(name and surname) (name and surname)

Contact telephone: | | | | | / | | | | | | | |
(exchange number is compulsory)

E-mail: _____

Printed in the Statistical Office of the Republic of Serbia
www.stat.gov.rs

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 2019: 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-onwed, 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 RESEARH** 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 (FOS 2007)

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 od 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 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**
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: *FOS – Fields of Science and Technology, OECD – 2007*

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

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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 2020

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 Fields of Science and Technology is to be used to write down the scientific field.

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	**Technical staff**										
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) bu 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 obtaine 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 hold any research title, work directly with researchers in carrying out professional or technical works relative to R&D tasks (laboratory technicians, engineers and technicians of technical sciences, designers, librarians, information assistant, computer experts, language editors, etc.).

Administrative workers carry out exclusively or predominantly organisational, clerical, legal, administrative or financial work (treasurer, secretaries, jurists, etc.).

Other personnel carry out supporting activities in R&D organisations (employed in workshops, on agricultural land, couriers, switchboard operators, maintenance workers, drivers, suppliers, etc.).

Excluded are personnel engaged in protection and security, restaurants, hygiene maintenance, and related activities (guards, desk clerks, charwomen, etc.).

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
a		*1*	*2*	*3*	*4*
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
a		*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					X	X
04	Technicians										
05	Other personnel										
Employees engaged in R&D activities (full-time equivalent)											
06	**Total (07 до 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					X	X
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									X	X
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									X	X
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
a		*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	
a		*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__
	a			*1*	*2*
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**
a				*1*
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	37315
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		202
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		1567
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		223

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								
06	Medical sciences								
07	Agricultural 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.

- APLPLIED 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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