

STATISTICAL RELEASE

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Science, Technology and Innovation Statistics

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Indicators of innovation activities, 2018–2020

The share of business entities with at least one type of innovation is 54.79%. More than 69% of large business entities are innovative, about 58% of medium-sized business entities, while among small business entities about 54% are innovative. Innovative activities are almost the same in business entities engaged in production and service activities – innovations were introduced by over 54% of business entities.

1. Enterprises by innovations, activities and size classes

	Total	Innovators	Non-innovative enterprises	Share of innovators (%)
Total	21877	11986	9891	54.79
Small enterprises	18355	9874	8481	53.79
Medium enterprises	2873	1664	1209	57.90
Large enterprises	649	448	201	69.03
Manufacturing enterprises	5150	2802	2348	54.41
Service enterprises	16727	9184	7543	54.91

Referring to regional distribution, product and process innovations had almost the same share (over 45%), but they were not equally distributed by regions. Regional distribution of product and process innovations ranged from 46.5% (Beogradski region) to 10% (Region Južne i Istočne Srbije).

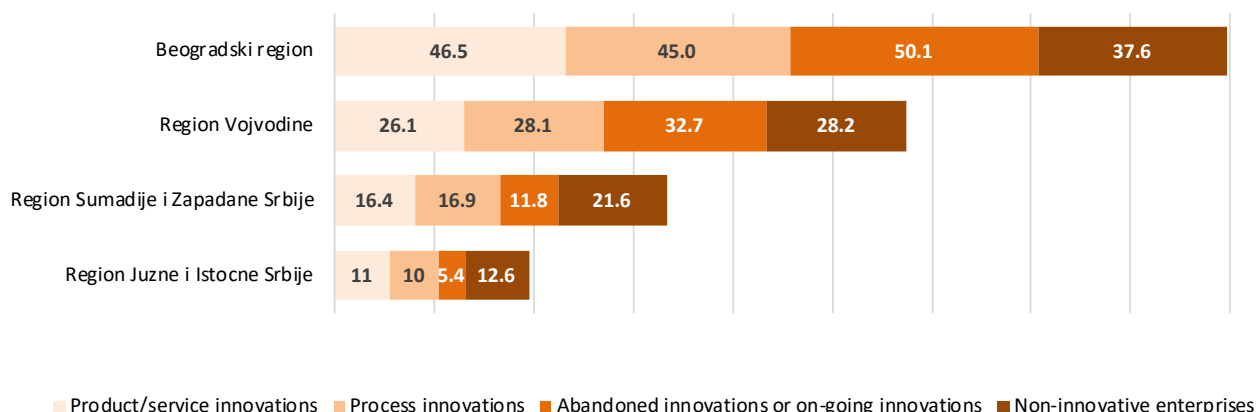
2. Share of types of innovations by territory and size classes of enterprises

Territory	Size class	Innovative enterprises			Non-innovative enterprises
		Product/service innovations	Process innovations	Abandoned innovations or on-going innovations	
REPUBLIC OF SERBIA	Total	8455	9554	1782	9891
	Small	6838	7719	1338	8481
	Medium	1278	1439	346	1209
	Large	339	396	98	201
Beogradski region	Total	3929	4303	893	3719
	Small	3233	3523	678	3247
	Medium	542	602	176	398
	Large	154	178	39	74
Region Vojvodine	Total	2206	2681	583	2786
	Small	1759	2189	473	2370
	Medium	360	390	82	345
	Large	87	102	28	71

2. Share of types of innovations by territory and size classes of enterprises (continued)

Territory	Size class	Innovative enterprises			Non-innovative enterprises
		Product/service innovations	Process innovations	Abandoned innovations or on-going innovations	
Region Sumadije i Zapadane Srbije	Total	1387	1619	210	2135
	Small	1106	1281	124	1789
	Medium	220	266	63	314
	Large	61	72	23	32
Region Juzne i Istocne Srbije	Total	933	951	96	1251
	Small	740	726	63	1075
	Medium	156	181	25	152
	Large	37	44	8	24
Region Kosovo i Metohija	Total

Graph 1. Percentage of types of innovations by territory



3. Enterprises by types of innovations and sections of activities

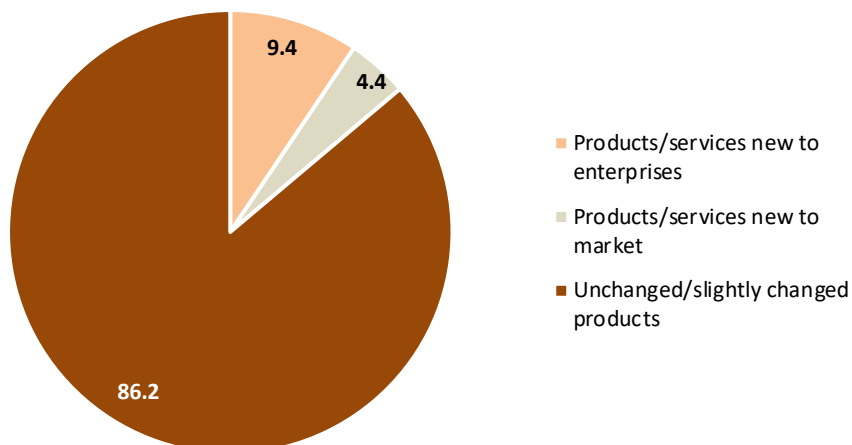
	Innovators								Non-innovators, %
	Total		Product/service innovators		Organizational/ marketing innovators		Product/process innovators and organizational/ marketing innovators		
	Number	%	Number	%	Number	%	Number	%	
Total	11986	54.8	8455	38.6	9554	43.7	1782	8.1	45.2
A – Agriculture, forestry and fishing	145	34.7	50	12	133	31.8	11	2.6	65.3
B – Mining	36	51.4	19	27.1	30	42.9	2	2.9	48.6
C – Manufacturing	2592	56.5	2086	45.5	2138	46.7	420	9.2	43.5
D – Electricity, gas, steam and air conditioning supply	29	37.2	9	11.5	22	28.2	4	5.1	62.8
E – Water supply, sewerage and waste management and remediation activities	145	46.9	80	25.9	130	42.1	20	6.5	53.1
F – Construction	676	44.1	390	25.4	598	39	63	4.1	55.9
G – Wholesale and retail trade; repair of motor vehicles and motorcycles	1945	54.6	1441	40.4	1454	40.8	166	4.7	45.4
H – Transportation and storage	544	47.8	285	25	491	43.1	92	8.1	52.2
I – Accommodation and food service activities	537	69.4	449	58	423	54.7	9	1.2	30.6
J – Information and communications	2367	59.2	1362	34.1	1843	46.1	504	12.6	40.8
K – Financial and insurance activities	169	44.8	118	31.3	150	39.8	25	6.6	54.9
L – Real estate activities	35	39.3	34	38.2	31	34.8	4	4.5	60.7
M – Professional, scientific and technical activities	2437	57.6	1901	44.9	1809	42.8	417	9.9	42.4
N – Administrative and support activities	329	45.9	231	32.2	302	42.1	45	6.3	54.1

The largest percentage of innovative enterprises were in the section Accommodation and food service activities, almost 70% and Information and communication, about 60%, while the smallest percentage related to innovative enterprises in the section of Agriculture, forestry and fishing, about 35%.

Share in the total income from product/service innovations

In the structure of innovative enterprises' income, the share of income from sale of unchanged or slightly changed products was predominant and amounted to 86%, while that of sale of products/services new to the enterprises, and that of sale of products/services new to market totalled to approximately 14%.

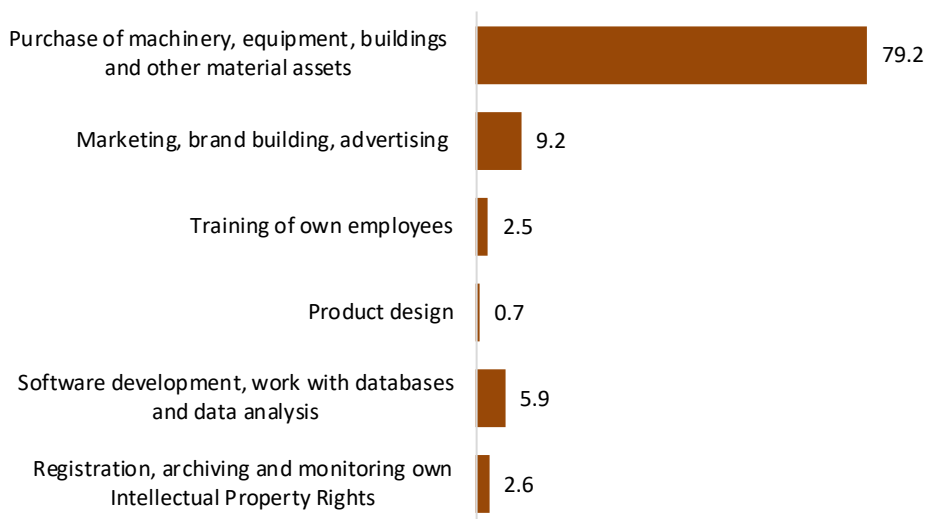
Graph. 2. Structure of innovators' income



Innovation activities expenditures

The share of costs for the purchase of machinery and equipment is about 80% and represents the largest share of total expenditures for innovative activities of business entities, while about 20% of funds were invested in all other activities.

Chart 3. Structure of total enterprises' expenditures in 2020



Factors as obstacles to innovation activities

Majority of enterprises had motive for innovation activities, but did not carried them out because expenditures for innovation were too high – almost 25%, or there was shortage of own financial resources for innovations – about 22% of enterprises.

4. Significance of factors that were obstacles to innovation activities

Factors	Importance			
	high	medium	small	negligible
Shortage of own financial resources	21.6	22.8	19.3	36.3
Shortage of credits or private capital	13.8	18.4	20.9	46.9
Difficulties in obtaining public grants or subsidies	15.8	14.5	17.5	52.1
Too high expenditures for innovations	24.8	26.1	16.0	33.2
Shortage of qualified staff in enterprises	17.5	25.4	17.9	39.3
Lack of collaboration partners	10.2	21.1	22.4	46.3
Lack of access to external knowledge	6.9	17.8	24.2	51.2
Uncertain demand on the market for innovative goods and services	11.0	22.5	20.4	46.1
Too big competition on the market	14.3	24.5	22.3	38.9
Other priorities of the enterprise	15.0	24.3	20.0	40.7

5. Employees with tertiary education or education after the completed faculty (master. specialist. Mr. PHD)

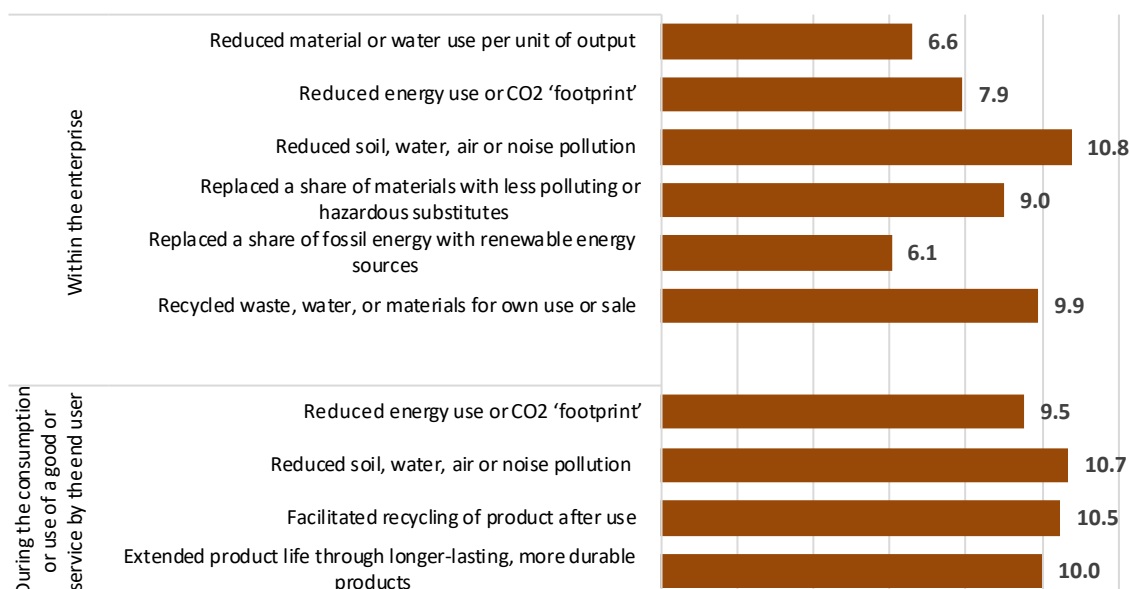
In total population of enterprises, about 10% are those with no employees who have completed tertiary education, which mostly refers to small enterprises. The greatest number of enterprises employees from 10% to 24% of tertiary educated persons, while more than a third part of large enterprises was with 10% to 24% of employees who have completed tertiary education.

	Employees with tertiary education or education after the completed faculty						
	0%	1–4%	5–9%	10–24%	25–49%	50–74%	75–100%
Total	9.9	16.5	12.1	19.0	11.2	11.5	19.8
Small	11.4	16.0	10.3	17.1	10.6	12.3	22.3
Medium	2.2	20.3	21.4	27.1	14.3	7.1	7.6
Large	0.6	15.1	20.2	36.2	16.0	8.2	3.7

Only 0.9% of business entities used tax incentives for scientific research and other innovative activities, while 8.3% of business entities used tax incentives for other types of activities.

Environmental benefits

6. Innovations with environmental benefits, %



Methodological remarks

The data presented in this statistical release are the result of the survey on innovative activities in business entities from 2018 to 2020. In the survey, innovative business entities are defined as business entities that introduced product or innovation process in the observed period, or had innovations that have been abandoned or not yet completed. The key factor for the innovative activities of a particular business entity is the size of the entity.

Expenditures on innovative activities includes investments in new product development, investments in the introduction of new products on the market, funds aimed at significant improvement of the existing products, services or processes, as well as funds for innovation projects that have not been completed yet.

This survey includes the following expenditures for innovative activities of enterprises: acquisition of machinery, equipment, buildings and other tangible assets; Marketing, brand building, advertising (include in-house costs and purchased services); Training own staff (include all in-house costs including wages and salaries of staff while being trained, and costs of purchased services from others); Product design (include in-house costs and purchased services); Software development, database work and data analysis (include in-house costs and purchased services), as well as registering, filing and monitoring own Intellectual Property Rights (IPRs) and purchasing or licensing IPRs from others.

The survey on the innovation of business entities was conducted on the basis of a representative sample. The sample was allocated to the territory of the Republic of Serbia up to the level of regions, proportionally to the number of enterprises. The sample size was **3 709** small, medium and large enterprises. Large enterprises were fully covered. The sample frame covered active enterprises from the Statistical Business Register, containing 21 877 enterprises. The obtained results were weighted and calculated on the level of the population of enterprises.

The survey on enterprises was carried out on a stratified sample according to the size class of enterprises (small: from 10 to 49 employees, medium: from 50 to 249 employees and large: more than 250 employees) and according to activities (classes of activities according to CA 08) as well as according to territorial distribution up to the level of regions (NSTJ 2). Sample realization was over 79%. Approximately 1.5% of selected enterprises were not on the referent address, while about 19% of enterprises did not respond to the survey.

Starting from 1999 the Statistical Office of the Republic of Serbia does not have available data for AP Kosovo and Metohija therefore these data are not included in the coverage for the Republic of Serbia (total).