

STATISTICAL RELEASE

IA01

number 197 - year LXVII, 20/07/2017

Science, Technology and Innovation Statistics

SRB197 IA01 200717

Indicators of innovation activities, 2014–2016

The data presented in this statistical release are the result of the survey on innovation activities in enterprises, over 2014-2016. The survey was carried out on a sample of 3587 enterprises. Innovative enterprises are defined as enterprises that introduced, in the reference period, a product/process innovation, organizational innovation or marketing innovation. The survey showed that the share of enterprises with at least one of the mentioned types of innovations amounted to 41.2%. The size of enterprises was key factor for their innovation activity. Among innovative enterprises there were two out of three large innovative enterprises, somewhat more than a half of medium ones and slightly more than 38% of small enterprises. Innovation activities were more present in manufacturing enterprises, in which almost a half introduced innovations, while regarding service enterprises, less than 40% introduced innovations.

1. Enterprises by innovations, activities and size classes

	Total	Innovators	Non-innovative enterprises	Share of innovators (%)
Total	16957	6994	9963	41.2
Small enterprises	14174	5417	8757	38.2
Medium enterprises	2257	1228	1030	54.4
Large enterprises	526	349	177	66.3
Manufacturing enterprises	4723	2232	2492	47.3
Service enterprises	12233	4762	7472	38.9

Referring to regional distribution, the greatest was the share of enterprises with product/ service innovations and was equally distributed by regions, meaning that more than a fourth of enterprises introduced a new product or service. Regional distribution of organizational and marketing innovations was from 20.9% to 25%, while the share of process innovations was from 17.4% to 25%.

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	Organizational innovations	Marketing innovations	
REPUBLIC OF SERBIA	Total	26.9	21.0	14.3	24.2	22.3	58.8
	Small	25.3	19.0	13.3	22.1	20.3	61.8
	Medium	33.0	28.9	17.7	31.8	30.3	45.6
	Large	45.4	41.7	27.7	47.3	40.9	33.6
SRBIJA – SEVER	Total	26.4	19.7	14.9	24.9	21.7	58.7
	Small	24.6	17.5	14.0	23.0	19.7	61.8
	Medium	34.5	28.6	17.7	33.2	30.5	43.6
	Large	46.9	44.4	29.2	48.2	43.4	30.7
Beogradski region	Total	27.2	21.0	16.1	25.0	22.0	58.7
	Small	25.1	18.7	15.4	23.3	20.1	61.9
	Medium	38.3	32.1	17.2	31.8	30.6	41.3
	Large	47.9	47.2	31.7	49.9	46.6	25.8
Region Vojvodine	Total	25.1	17.4	12.8	24.9	21.3	58.8
	Small	23.6	15.3	11.4	22.4	19.1	61.6
	Medium	29.6	24.1	18.4	35.0	30.5	46.6
	Large	45.3	40.0	25.4	45.5	38.4	38.3

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	Organizational innovations	Marketing innovations	
SRBIJA – JUG	Total	28.0	24.2	13.1	22.6	23.4	58.9
	Small	26.9	22.7	11.7	20.1	21.6	61.8
	Medium	30.8	29.3	17.6	29.7	30.0	48.6
	Large	41.6	35.1	24.2	45.4	34.8	40.7
Region Sumadije i Zapadne Srbije	Total	28.4	25.0	13.6	22.7	25.0	57.6
	Small	27.6	24.2	12.6	20.7	22.9	59.6
	Medium	29.9	27.3	16.2	28.5	32.6	50.0
	Large	42.9	34.2	24.6	43.2	35.8	45.4
Region Juzne i Istocne Srbije	Total	27.4	22.8	12.3	22.3	20.9	61.1
	Small	25.8	20.2	10.2	19.2	19.4	65.4
	Medium	32.2	32.6	19.9	31.7	25.7	46.3
	Large	39.8	36.6	23.5	48.6	33.4	33.8

Share of enterprises with organizational and marketing innovations was 30.2% and was less than enterprises with product and process innovations, where a third part of enterprises were innovative. The mentioned two groups of innovations mostly appeared simultaneously in enterprises. Share of enterprises that simultaneously introduced product and process innovations and organizational and marketing innovations amounted to 22.4%. The greatest presence of innovative enterprises was in manufacturing and professional, scientific and technical activities.

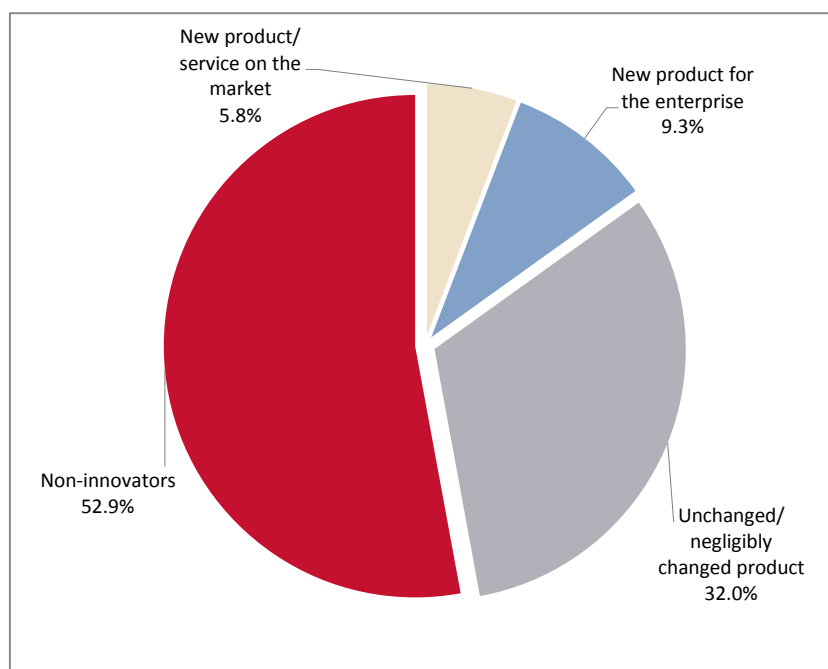
3. Enterprises by types of innovations and sections of activities

	Innovators								Non-innovators %
	Total		Product/service innovators		Organizational/marketing innovators		Product/process innovators and organizational/marketing innovators		
	Number	%	Number	%	Number	%	Number	%	
Total	6994	41.2	5665	33.4	5129	30.2	3800	22.4	58.8
A: Agriculture, forestry and fishing	177	41.9	136	32.2	138	32.7	97	23.0	58.1
B: Mining	16	27.1	11	18.6	12	20.3	7	11.9	72.9
C: Manufacturing	2002	47.9	1700	40.7	1527	36.6	1225	29.3	52.1
D: Electricity, gas and steam, air conditioning supply	36	53.7	27	40.3	23	34.3	14	20.9	46.3
E: Water supply, sewerage and waste management and remediation activities	94	31.1	73	24.2	86	28.5	64	21.2	68.9
F: Construction	368	36.7	318	31.7	209	20.9	159	15.9	63.3
G: Wholesale and retail trade; repair of motor vehicles and motorcycles	966	31.0	671	21.5	699	22.4	403	12.9	69.0
H: Transportation and storage	289	37.3	195	25.2	177	22.9	84	10.9	62.7
I: Accommodation and food service activities	136	30.8	119	26.9	127	28.7	109	24.7	69.2
J: Information and communications	1061	40.2	847	32.1	828	31.4	614	23.3	59.8
K: Financial and insurance activities	114	38.1	76	25.4	107	35.8	69	23.1	61.9
L: Real estate activities	5	8.5	3	5.1	3	5.1	1	1.7	91.5
M: Professional, scientific and technical activities	1505	47.3	1304	41.0	1020	32.1	818	25.7	52.7
N: Administrative and support activities	224	53.1	185	43.8	174	41.2	136	32.2	46.9
Q: Human health and social work activities	0	0	0	0	0	0	0	0	0
R: Arts, entertainment and recreation	0	0	0	0	0	0	0	0	0

4. Share in the total income from product/service innovations

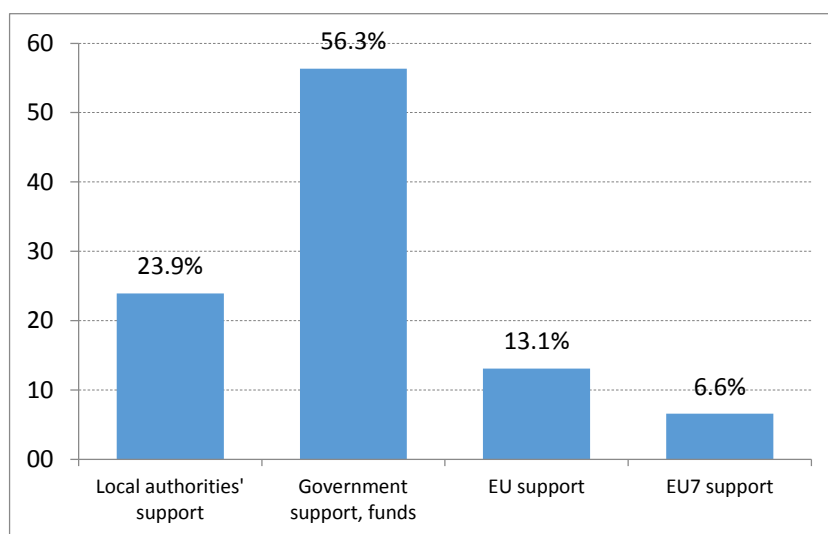
In the structure of innovative enterprises' income, the share of income from sale of unchanged or slightly changed products was predominant and amounted to 32%, while that of sale of products/services new to the enterprises, and that of sale of products/services new to market totalled to approximately 15%.

Structure of innovators' income



12.5% of enterprises - innovators were subsidized by state instances (financial support in the form of tax relief, grants, subsidized loans, loan guarantees).

Structure of financial assistance to technical innovators



5. Market of sale of products/services

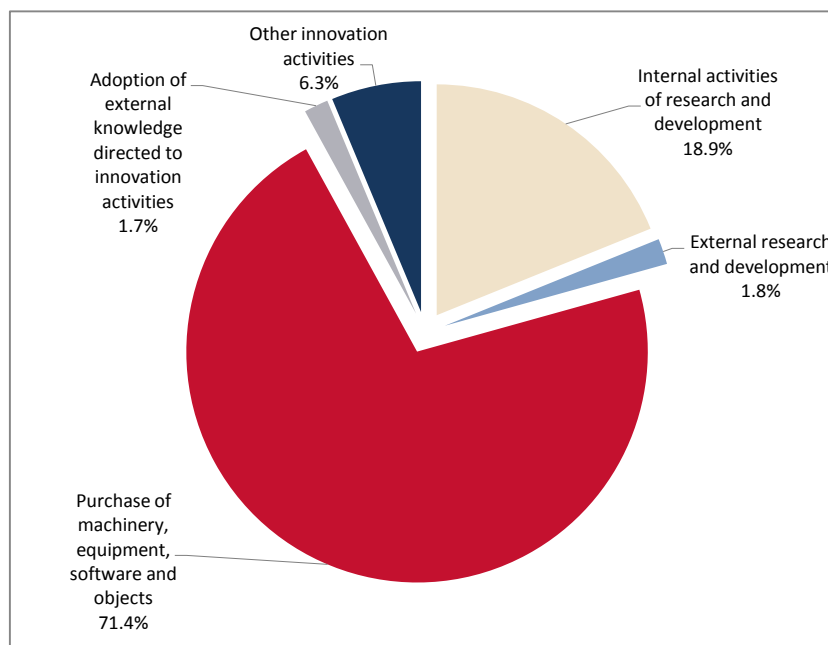
Among enterprises that sell products/services, the most numerous were those selling on the local-regional market, followed by those selling on the national market. The share of innovators, versus that of non-innovators on the market of EU and EFTA countries was by 50% higher and on the markets of other countries was even slightly over 50%.

Market	Innovators		Non-innovators
	Product/process innovators	Organizational/marketing innovators	
Local/regional market	55,1	53,6	63,6
National market	23,1	24,0	23,1
EU and EFTA markets	15,0	15,6	7,8
Other markets	6,8	6,7	5,5

6. Expenditures for innovation activities

Expenditures for innovation activities cover costs for the development of new products, costs for the introduction of a new product to the market, costs for significant improvement of existing products, services or processes, as well as costs for unfinished innovation projects. Expenditures for innovation activities encompass current costs (wages and salaries, equipment, materials, services, etc.), as well as investment costs. In the total expenditures for innovation activities of enterprises, the largest percentage share was recorded for the purchase of machinery, equipment and software, approximately over 71%.

Structure of innovation activities expenditures



7. Significance of factors that were obstacles to innovation activities

Majority of enterprises that were non-innovators had no motive for innovation activities (77%), while in 23% of enterprises there was a need, together with numerous obstacles. As the greatest obstacles to innovations, enterprises reported shortage of own financial resources, followed by too high expenditures for innovations.

Factors	importance			
	high	medium	small	negligible
Shortage of own financial resources	14,6	4,4	2,9	78,1
Shortage of credits or private capital	8,0	7,6	4,0	80,3
Too high expenditures for innovations	12,6	5,4	3,4	78,5
Shortage of qualified staff in enterprises	5,3	7,4	5,3	81,9
Lack of partners for cooperation	5,5	7,2	5,5	81,9
Difficult obtaining of state donations and subsidies	9,5	4,6	5,3	80,5
Uncertain demand on the market for your innovative ideas	6,7	6,8	5,0	81,6
Too big competition on your market	7,0	6,8	5,0	81,3
Legislative regulations are a burden	7,1	6,7	5,5	80,8
Legislative regulations provoke uncertainty	7,6	6,6	4,7	81,1
Legislative regulations are not consistent in the whole EU	5,0	5,1	6,0	83,9

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

In total population of enterprises, a fourth part are those with no employees who have completed tertiary education, which mostly refers to small enterprises. The greatest number of enterprises employees from 1% to 4% of tertiary educated persons, while almost a third part of large enterprises is 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	24,74	19,47	8,84	14,74	9,87	10,32	12,02
Small	27,96	18,06	6,77	12,38	9,81	11,22	13,79
Medium	9,74	28,12	18,33	25,55	9,39	5,76	3,10
Large	2,29	20,19	23,81	32,19	13,14	5,71	2,67

Methodological remarks

The survey on innovative enterprises was carried out on 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 **3587** small, medium and large enterprises. Large enterprises were fully covered. The sample frame covered active enterprises from the Statistical Business Register, containing 16957 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). Sample realization was over 81%; approximately 2% of selected enterprises were not on the referent address, also 2% of enterprises did not respond to the survey due to some other reason, while 1% of selected enterprises were frozen or in bankruptcy. 14% of enterprises did not respond to the survey.

Information is collected via web questionnaire (14%), e-mail (15%) and printed questionnaire which was disseminated and collected by post (71%).