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Indicators of innovation activities in the Republic of Serbia, 2010−2012

The data presented in this statistical release are the result of the survey on innovation activities in enterprises, over 2010-2012. The survey was carried out on a sample of 3500 enterprises. Innovative enterprises were defined for that purpose as enterprises that introduced in the reference period a product/process innovation, organisational innovation or marketing innovation.

The survey showed that the share of enterprises with at least one of the mentioned types of innovations was approximately 45%. The size of enterprises was key factor for their innovation activity. Among innovative enterprises there were more than 66% of large enterprises, somewhat more than a half of medium and more than 40% of small enterprises. Innovation activities were more frequent in manufacturing enterprises, of which almost half of them introduced innovations, however they were introduced by more than 40% of service enterprises.

1. Enterprises by innovations, activities and size classes, 2010–2012.

	Total	Innovators	Non-innovative enterprises	Share of innovators (%)
Total	**11841**	**5280**	**6561**	**44,6**
Small enterprises	9057	3691	5366	40,8
Medium enterprises	2264	1245	1019	55,0
Large enterprises	520	344	176	66,2
Manufacturing enterprises	4122	2007	2195	48,7
Service enterprises	7719	3273	4366	42,4

The share of enterprises with product innovations and process innovations was almost the same, while the share of organisational and marketing innovators was up by a third. These two groups of innovations were simultaneously existing in enterprises. Among innovative enterprises that had at the same time product/process innovations and organisational/marketing, manufacturing enterprises prevailed over service enterprises. Almost half of large enterprises introduced at the same time product/process innovations and organisational/marketing innovations, but the smaller the size was the lower the share of medium and small enterprises was.

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	Organisational innovations	Marketing innovations	
REPUBLIC OF SERBIA	**Total**	**21,0**	**19,1**	**7,9**	**31,4**	**29,7**	**55,4**
	Small	**17,6**	**15,8**	**5,3**	**28,0**	**27,3**	**59,2**
	Medium	**29,6**	**27,5**	**14,6**	**41,0**	**36,3**	**45,0**
	Large	**43,3**	**38,8**	**23,1**	**50,2**	**43,3**	**33,8**
SRBIJA − SEVER	Total	20,3	19,3	7,7	32,4	30,6	54,4
	Small	17,3	16,2	5,1	29,0	28,5	58,2
	Medium	27,2	27,1	14,5	42,5	35,6	44,1
	Large	45,7	41,5	25,3	50,9	46,6	31,0
Beogradski region	Total	21,5	20,9	7,95	35,3	32,6	51,4
	Small	18,6	17,6	5,22	31,9	31,0	54,5
	Medium	28,9	29,8	14,8	45,2	36,1	43,9
	Large	40,7	40,7	26,9	53,2	46,3	29,2

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	Organisational innovations	Marketing innovations	
Region Vojvodine	Total	18,7	17,0	7,38	28,5	27,8	58,6
	Small	15,3	14,2	4,95	25,0	25,1	63,3
	Medium	24,9	23,5	14,1	38,9	34,8	44,4
	Large	52,6	42,3	22,6	46,7	46,7	33,6
SRBIJA − JUG	Total	22,2	18,7	8,14	29,6	28,1	57,2
	Small	18,2	15,2	5,69	26,0	25,0	61,3
	Medium	33,4	28,2	14,7	38,6	37,4	46,3
	Large	38,1	33,3	18,5	48,2	36,3	39,9
Region Sumadije i Zapadane Srbije	Total	23,4	18,7	7,93	30,6	27,9	55,3
	Small	19,3	15,6	5,26	27,6	25,0	58,9
	Medium	35,3	27,7	16,0	38,1	36,6	45,7
	Large	38,0	31,5	15,7	48,1	38,0	38,9
Region Juzne i Istocne Srbije	Total	20,3	18,7	8,49	28,1	28,4	60,4
	Small	16,3	14,7	6,43	23,5	25,0	65,3
	Medium	30,3	28,9	12,7	39,7	38,5	47,3
	Large	38,3	36,7	23,3	50,0	33,3	41,7

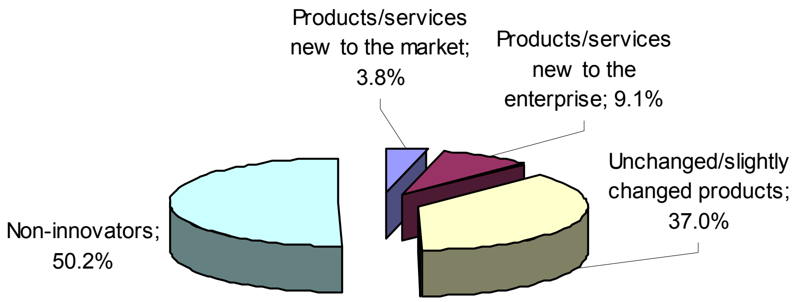
3. Enterprises by types of innovations and sections of activities

	Innovators								Non-innovators %
	Total		Product/service innovators		Organisational/marketing innovators		Product/process innovators and organizational/marketing innovators		
	Number	%	Number	%	Number	%	Number	%	
Total	**5280**	**44,6**	**3250**	**27,4**	**4705**	**39,7**	**2676**	**22,6**	**55,4**
A: Agriculture, forestry and fishing	154	30,3	88	17,3	145	28,5	79	15,5	69,7
B: Mining	20	37,0	12	22,2	15	27,8	8	14,8	63,0
C: Manufacturing	1797	50,5	1279	35,9	1589	44,6	1071	30,1	49,5
D: Electricity, gas and steam, air conditioning supply	36	46,2	28	35,9	29	37,2	21	26,9	53,8
E: Water supply, sewerage and waste management and remediation activities	100	32,5	63	20,5	78	25,3	42	13,6	67,5
F: Construction	449	40,6	240	21,7	409	36,9	201	18,2	59,4
G: Wholesale and retail trade; repair of motor vehicles and motorcycles	1344	42,0	649	20,3	1219	38,1	523	16,3	58,0
H: Transportation and storage	236	34,4	172	25,1	180	26,2	115	16,8	65,5
I: Accommodation and food service activities	169	42,6	86	21,7	149	37,5	66	16,6	57,7
J: Information and communications	267	53,7	177	35,6	231	46,5	140	28,2	46,3
K: Financial and insurance activities	88	72,1	63	51,6	78	63,9	53	43,4	27,9
L: Real estate activities	11	24,4	5	11,1	11	24,4	5	11,1	73,3
M: Professional, scientific and technical activities	480	50,6	312	32,9	450	47,5	282	29,7	49,4
N: Administrative and support activities	122	37,7	71	21,9	115	35,5	65	20,1	62,3
Q: Human health and social work activities	2	100	0	0,0	2	100,0	0	0,0	0,0
R: Arts, entertainment and recreation	5	100	5	100	5	100	5	100	0,0

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

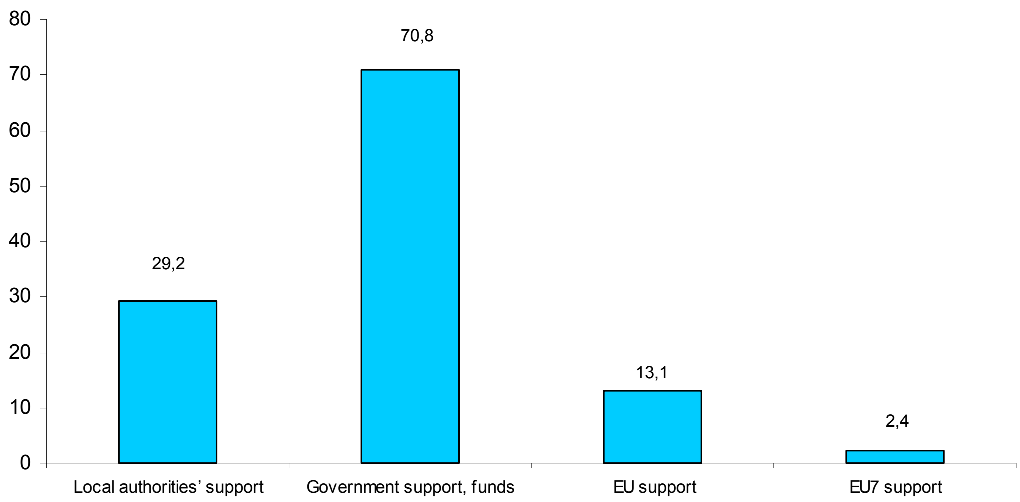
In the structure of innovative enterprises' income, the share of income from sale of unchanged or slightly changed products was predominant and amounted to 37%, while that of sale of products/services new to the enterprises, and that of sale of products/services new to market were approximately 13%.

Graph 1: Structure of innovators' income



Eleven percent of enterprises – innovators were subsidised (financial support in the form of tax relief, grants, subsidised loans, loan guarantees).

Graph 2: Structure of financial assistance to innovators (%),



5. Market of sale of products/services over 2010–2012.

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 twice higher, and on the market of other countries even up to three times higher.

Market	Innovators		Non-innovators
	Product/process innovators	Oganisational/marketing innovators	
Local/regional market	49,1	54,2	66,9
National market	40,7	37,8	28,4
EU and EFTA markets	7,1	5,8	3,6
Other markets	3,1	2,3	1,1

6. Partners with which enterprises were engaged in innovation co-operation

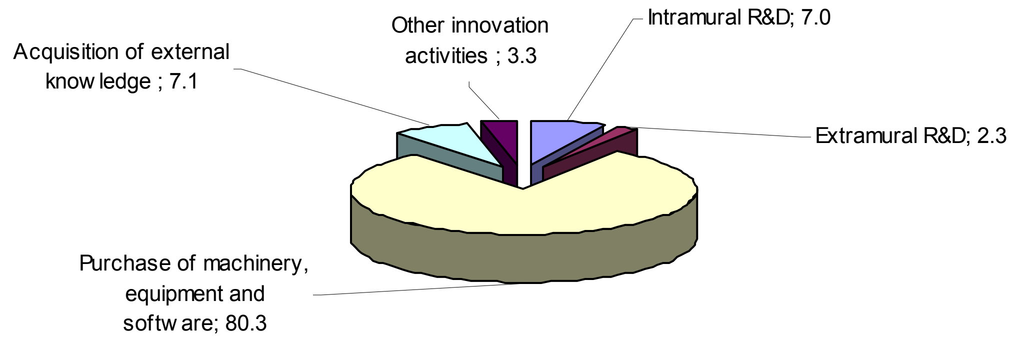
Enterprises that had contractual co-operations in innovations with other enterprises and institutions reported that the most frequent partners in innovations were other enterprises within the group – approximately 70%.

7. Expenditures for innovation activities

Expenditures for innovation activities covers 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 covers current costs (wages and salaries, equipment, services, etc.), as well as investment costs.

In the total expenditures for innovation activities of enterprises, the largest percentage amount of expenditure was rercorded for the purchase of machinery, equipment and software, being approximately 80%.

Graph 3: Structure of expenditures for innovation activities



8. Purchases and innovations in the public sector

Contracts with the public sector were signed by 27% enterprises, of which 88% had contracts with the public sector in the country and 12% with the public sector abroad. Approximately 3% of enterprises had contracts with the public sector, both in the country and abroad, and about 7% of enterprises introduced innovations which were contractual obligations.

9. Significant objectives of enterprises over 2010–2012

All estimated objectives had significant effect for most of enterprises, and the most significant was the increase of income and decrease of costs.

Objectives	Significance of objectives (%)			
	High	Medium	Low	Not relevant
Increase income	55,8	22,8	9,1	12,3
Increase market share	38,0	31,8	13,0	17,1
Reduce costs	48,5	24,9	12,7	13,9
Increase profit rates	38,3	31,7	13,7	16,3

10. Significance of the strategy to meeting the objectives of enterprises over 2010–2012

In nearly all enterprises the most significant strategies were focused on decreasing purchase costs and internal costs, then on entering new markets and increasing market share, as well as on improving flexibility to market requirements. The degree of significance of development of new markets in non-EU and EU countries, as well as the association with other enterprises and institutions was not relevant.

Significance of strategy	Significance of objectives (%)			
	High	Medium	Low	Not relevant
Development of new markets in EU-countries	14,2	17,4	17,9	50,6
Development of new markets звој нових тржишта ван Европе	8,3	13,7	18,1	59,9
Reduce internal labour costs	33,5	33,8	16,7	16,0
Reduce purchase costs for equipment, parts or services	37,8	31,6	14,5	16,1
Introducing new or significantly improved products or services	21,0	34,0	19,9	25,1
Increase or improvement of products/services marketing	19,6	35,7	20,8	23,9
Increase of flexibility/adaptation to market requirements	31,1	36,0	14,7	18,2
Entering new markets and increase of market share	31,5	28,5	16,3	23,7
Association with other enterprises or institutions	9,8	25,6	22,2	42,4

11. Hampering factors in achieving the objectives of enterprises over 2010–2012

Enterprises reported costs as being the greatest obstacle to achieving the objectives. High administrative and regulatory costs were also the greatest hampering factor. As for market factors, the pricing competition and uncertain demand affected significantly the achievement of objectives, contrary to innovations of competitors, which were the least hampering factor. The effect of the lack of skilled staff was not relevant.

Hampering factors		Significance of objectives (%)			
		High	Medium	Low	Not relevant
Market factors	Strong pricing competition	37,9	34,1	14,5	13,6
	Strong competition in product quality, popularity and brand	21,5	35,4	24,1	18,9
	Uncertain demand	37,4	33,4	15,8	13,4
	Competitors' innovations	9,6	31,2	30,4	28,8
	Competitors' dominant market share	19,9	38,6	23,1	18,4
Knowledge factors	Lack of skilled staff	12,4	31,2	26,5	29,9
Factors of costs	Lack of adequate funds	36,3	31,4	15,3	17,1
	Costs of direct entering new markets too high	35,5	30,7	15,0	18,7
	Administrative and regulatory costs too high	39,1	34,8	13,5	12,7

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 **3500** small and medium enterprises. Large enterprises were fully covered. The sample frame covered active enterprises from the Statistical Business Register, containing 11841 enterprises with 10 employees and more. 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 (CA classes of activities). Sample realization was over 77%, approximately 3% of selected enterprises were frozen or in bankruptcy, approximately 20% of enterprises did not respond to the survey.

Information is collected via web questionnaire (37%), e-mail (12%) and printed questionnaire which was disseminated and collected by post (37%).

Contact: suncica.stefanovic@stat.gov.rs ; paun.cukavac@stat.gov.rs phone: 011 2412-922 ext 357
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