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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 |
| SRBIJА − 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 |
| Е: | 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 |
| Ј: | Information and communications | 267 | 53,7 | 177 | 35,6 | 231 | 46,5 | 140 | 28,2 | 46,3 |
| К: | 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 |
| М: | 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%.

![](data:application/x-msmetafile;base64...)

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

![](data:application/x-msmetafile;base64...)

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%.

![](data:application/x-msmetafile;base64...)

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%).

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