



61.8



Emerging Innovators 50.0

Change over time: 15.6

Serbia	Performance relative to EU in 2022	Performance change 2015-2022	Performance change 2021-2022
SUMMARY INNOVATION INDEX	61.8	15.6	-3.6
Human resources	49.1	4.8	-4.8
Doctorate graduates	55.5	11.4	-11.4
Population with tertiary education	55.3	0.0	0.0
Lifelong learning	33.3	0.0	0.0
Attractive research systems	42.7	18.5	2.5
International scientific co-publications	46.6	30.7	1.8
Most cited publications	43.6	14.6	4.8
Foreign doctorate students	36.3	15.7	-2.2
Digitalisation	47.7	22.2	22.2
Broadband penetration	56.4	42.4	42.4
People with above basic overall digital skills	36.4	0.0	0.0
Finance and support	38.7	20.9	5.1
R&D expenditures in the public sector	66.7	8.1	3.2
Venture capital expenditures	29.8	44.6	10.5
Government support for business R&D	15.3	13.7	2.0
Firm investments	102.2	12.2	0.0
R&D expenditure in the business sector	20.3	10.9	0.0
Non-R&D Innovation expenditures	181.5	25.6	0.0
Innovation expenditures per employee	108.9	0.0	0.0
Use of information technologies	60.9	-19.6	-42.4
Enterprises providing ICT training	75.0	-37.5	-81.3
Employed ICT specialists	45.5	0.0	0.0
Innovators	132.2	85.0	-2.3
Product innovators (SMEs)	157.2	101.1	-15.1
Business process innovators (SMEs)	110.2	67.8	11.3
Linkages	66.0	41.7	-22.1
Innovative SMEs collaborating with others	58.3	31.0	-55.8
Public-private co-publications	54.1	43.8	21.6
Job-to-job mobility of HRST	77.1	50.0	-11.8
Intellectual assets	20.4	5.6	-0.4
PCT patent applications	29.3	5.0	0.0
Trademark applications	27.8	13.5	3.9
Design applications	0.7	0.4	-4.1
Employment impacts	98.7	37.3	0.0
Employment in knowledge-intensive activities	51.9	0.0	0.0
Employment in innovative enterprises	135.8	71.6	0.0
Sales impacts	77.5	18.5	1.7
Medium and high-tech goods exports	70.3	-4.5	-3.6
Knowledge-intensive services exports	75.1	30.8	9.0
Sales of innovative products	89.5	34.1	0.0
Environmental sustainability	27.3	-16.0	-16.6
Resource productivity	3.1	-2.0	-2.8
Air emissions by fine particulate matter	0.0	-11.8	0.0
Environment-related technologies	91.6	-30.6	-45.7

The second column shows performance relative to that of the EU in 2022. Colours next to the column show matching colour codes: dark green: above 125% of the performance of the EU in 2022; light green: between 100% and 125%; yellow: between 70% and 100%; orange: below 70%. Normalised performance uses the data after a possible imputation of missing data and transformation of the data. The next columns show performance change over time between 2015 and 2022 and between 2021 and 2022, with scores relative to those of the EU in 2015. Positive performance changes are shown in green, negative performance changes in red.

SERBIA is an **Emerging Innovator** with performance at 61.8% of the EU average. Performance is above the average of the Emerging Innovators (50.0%). Performance is increasing (15.6%-points) at a rate higher than that of the EU (9.9%-points). The country's performance gap to the EU is becoming smaller.

Relative strengths

- Non-R&D Innovation expenditures
- Product innovators
- Employment in innovative enterprises
- Business process innovators
- Innovation expenditures per employee

Relative weaknesses

- Air emissions by fine particulate matter
- Design applications
- Resource productivity
- Government support for business R&D
- R&D expenditure in the business sector

Strong increases since 2015

- Product innovators
- Employment in innovative enterprises
- Business process innovators

Strong decreases since 2015

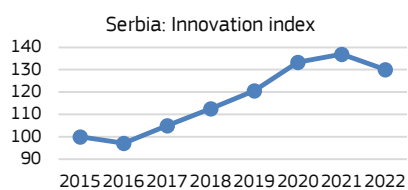
- Enterprises providing ICT training
- Environment-related technologies
- Air emissions by fine particulate matter

Strong increases since 2021

- Broadband penetration
- Public-private co-publications
- Business process innovators

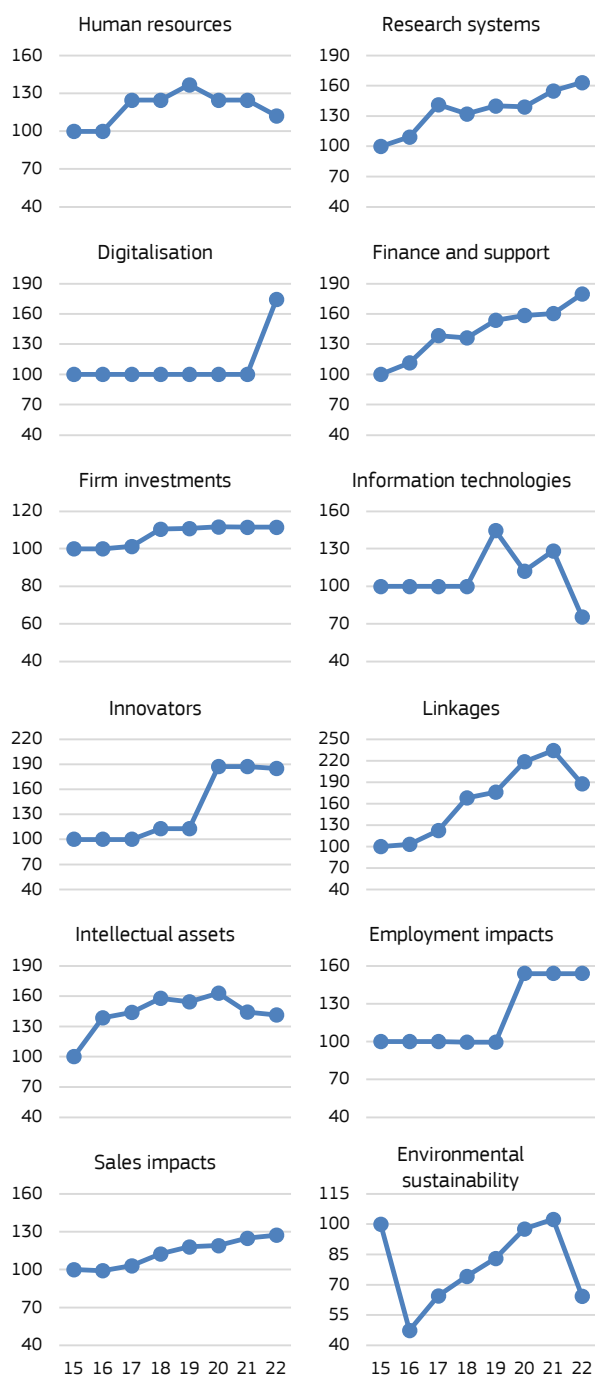
Strong decreases since 2021

- Enterprises providing ICT training
- Innovative SMEs collaborating with others
- Environment-related technologies



The graph on the left shows the evolution of **innovation performance over time** against the performance of the country in 2015. Innovation performance increased strongly between 2015 and 2021 and declined in 2022, leading to an overall improvement of 30% between 2015 and 2022.

The graphs below show the evolution of innovation performance in the different **innovation dimensions** against the performance of the country in 2015. Performance increased strongest for Research systems, Digitalisation, Innovators and Linkages. Performance declined for Information technologies and Environmental sustainability.



Structural differences with the EU are shown below:

- Serbia has lower per capita income but a faster growing economy. Manufacturing takes up a larger share of the economy, with SMEs accounting for a larger share of turnover.
- Enterprise births and FDI net inflows add positively to the innovation climate, the absence of top R&D spenders add negatively.
- Serbia has a higher share of In-house product innovators with and without market novelties and a higher share of non-innovators with potential to innovate.
- Governance and policy framework indicators are below the EU average as drivers of research and innovation.
- Information on Climate change related indicators is not available.

	RS	EU
Performance and structure of the economy		
GDP per capita (PPS)	13,300	31,200
Average annual GDP growth (%)	3.9	-0.4
Employment share Manufacturing (NACE C) (%)	19.2	16.4
of which High and Medium high-tech (%)	26.2	38.0
Employment share Services (NACE G-N) (%)	35.9	41.1
of which Knowledge-intensive services (%)	34.6	35.8
Turnover share SMEs (%)	43.5	34.8
Turnover share large enterprises (%)	44.6	48.2
Foreign-controlled enterprises – share of value added (%)	n/a	11.7
Business and entrepreneurship		
Enterprise births (10+ employees) (%)	1.8	1.0
Total Entrepreneurial Activity (TEA) (%)	n/a	7.3
FDI net inflows (% GDP)	7.6	1.0
Top R&D spending enterprises per 10 mln. population	0.0	18.3
Buyer sophistication (1 to 7 best)	2.5	3.7
Innovation profiles		
In-house product innovators with market novelties	11.5	10.7
In-house product innovators without market novelties	16.5	12.3
In-house business process innovators	6.7	11.0
Innovators that do not develop innovations themselves	18.9	11.6
Innovation active non-innovators	0.1	3.3
Non-innovators with potential to innovate	21.6	19.9
Non-innovators without disposition to innovate	24.7	31.3
Governance and policy framework		
Ease of starting a business (0 to 100 best)	74.4	76.5
Basic school entrepreneurial education and training	n/a	3.5
Govt. procurement of advanced tech. products	2.8	3.5
Rule of law (-2.5 to 2.5 best)	-0.2	1.1
Climate change indicators		
Circular material use rate	n/a	12.2
Greenhouse gas emissions intensity of energy consumption	n/a	82.8
Eco-Innovation Index	n/a	100.0
Demography		
Population size	6.9	447.0
Average annual population growth (%)	-0.7	0.1
Population density	91.0	108.8

Performance is measured relative to that of the country in 2015 (=100).