



European Innovation Scoreboard **2024** Country Profile **Serbia**

European Innovation Scoreboard 2024 – Country profile Serbia

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**Emerging Innovator** ●Summary innovation index (relative to EU in 2017): **69.1**Rank: **29**

Change vs 2023: ▲ 4.4 Change vs 2017: ▲ 7.4

Serbia is an Emerging Innovator with performance at 62.8% of the EU average in 2024. Performance is above the average of the Emerging Innovators (48%). Performance is increasing less than the EU (+10%).

Indicator	Performance relative to the EU in 2024	Performance change 2017-2024	Performance change 2023-2024
SUMMARY INNOVATION INDEX	62.8	7.4	4.4
Human resources	48.6	-4.9	0.0
New doctorate graduates	47.6	-11.6	0.0
Population with tertiary education	54.4	0.0	0.0
Population involved in lifelong learning	43.3	0.0	0.0
Attractive research systems	43.4	10.1	3.4
International scientific co-publications	51.9	30.0	-0.3
Scientific publications among the top 10% most cited	50.7	6.5	5.8
Foreign doctorate students as a % of all doctorate students	24.4	-0.1	1.5
Digitalisation	64.1	51.9	11.2
Broadband penetration	87.6	108.4	27.0
Individuals with above basic overall digital skills	31.4	-4.4	-4.4
Finance and support	42.7	14.0	-0.4
R&D expenditure in the public sector	68.9	-1.6	0.0
Venture capital expenditures	43.6	45.8	-1.1
Direct and indirect government support of business R&D	10.8	0.0	0.0
Firm investments	102.4	-8.9	-0.8
R&D expenditure in the business sector	26.4	12.1	-2.2
Non-R&D innovation expenditures	183.6	24.8	0.0
Innovation expenditures per person employed	108.5	-68.5	0.0
Use of information technologies	92.0	-32.5	19.0
Enterprises providing ICT training	98.9	-66.2	38.9
Employed ICT specialists	85.2	0.0	0.0
Innovators	135.7	57.4	57.4
SMEs introducing product innovations	171.0	58.8	58.8
SMEs introducing business process innovations	106.9	55.9	55.9
Linkages	77.8	36.9	6.5
Innovative SMEs collaborating with others	92.2	34.3	34.3
Public-private co-publications	50.1	15.7	-4.8
Job-to-job mobility of HRST	77.1	50.0	-11.8
Intellectual assets	21.9	2.1	-2.3
PCT patent applications	31.6	0.7	-5.3
Trademark applications	26.1	8.5	-1.4
Design applications	1.5	-1.4	0.5
Employment impacts	71.7	-0.4	0.0
Employment in knowledge-intensive activities	68.6	0.0	0.0
Employment in innovative enterprises	74.6	-0.6	0.0
Sales impacts	64.8	14.6	3.3
Exports of medium and high technology products	57.1	2.2	6.1
Knowledge-intensive services exports	56.6	17.0	2.6
Sales of new-to-market and new-to-firm innovations	90.1	31.5	0.0
Environmental sustainability	31.1	-15.8	-11.7
Resource productivity	9.3	0.5	4.8
Air emissions by fine particulates	8.5	-11.8	7.4
Environment-related technologies	81.8	-35.2	-52.7

Relative strengths

- Non-R&D innovation expenditures
- SMEs introducing product innovations
- Innovation expenditures per person employed

Relative weaknesses

- Design applications
- Air emissions by fine particulates
- Resource productivity

Strong increases since 2017

- Broadband penetration
- SMEs introducing product innovations
- SMEs introducing business process innovations

Strong decreases since 2017

- Innovation expenditures per person employed
- Enterprises providing ICT training
- Environment-related technologies

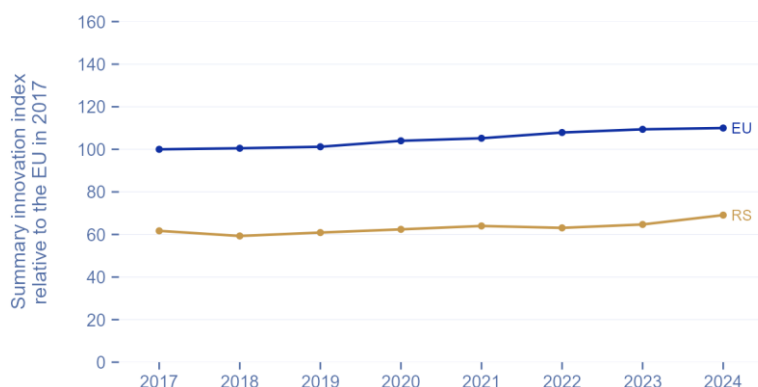
Strong increases since 2023

- SMEs introducing product innovations
- SMEs introducing business process innovations
- Enterprises providing ICT training

Strong decreases since 2023

- Environment-related technologies
- Job-to-job mobility of HRST
- PCT patent applications

Footnote: The first data column shows scores relative to the EU in 2024, with colour codes indicating performance levels. The subsequent columns show performance changes over time, with scores relative to the EU in 2017, coloured in purple for positive change and red for negative change. As reference years differ between the first column (2024) and the last two columns (2017), scores cannot be directly compared or subtracted across these columns.



Summary innovation index

The line chart shows the evolution of the innovation performance of Serbia over time, relative to the performance of the EU in 2017.

Footnote: All performance scores (SII and dimensions below) are relative to that of the EU in 2017.

Framework conditions

Serbia strengthened its research system since 2017, demonstrating steady improvement in quality of scientific publications and engaged more in international cooperation in the EU R&I frameworks. The country registered a 30.0%-point increase in international scientific co-publications and a 6.5%-point rise in share of publications among most cited. However, Serbia performs below the EU on both of those indicators, at 51.9% and 50.7% of the EU average in 2024, respectively. In addition, the share of new doctorate graduates has been on a declining path, in the context of increasing student mobility to the EU and opportunities it offers. The attractiveness of doctorate degree to foreign students decreased slightly compared to 2017 (OECD, 2022).

Finally, Serbia performs at 87.6% of the 2024 EU average on broadband penetration, with a 108.4%-point increase compared to 2017 and a registered upward trend since 2021. The country faces challenges in digital skills development as Serbia's performance stands at 31.4% of the EU level in 2024, with government's efforts to addressing the gap through its Digital Skills Strategy (2021).

Human resources



Attractive research systems



Digitalisation



Investments

Financing R&D remains challenging as the government struggles to increase R&D funding. There are fewer firm investments in R&D in the context of ongoing economic and geopolitical pressures. In fact, R&D spending in the public sector represents 68.9% of the 2024 EU average, and 26.4% in the business sector. However, venture capital expenditures proved to be resilient, demonstrating a 45.8%-point increase compared to 2017. Firm investments on non-R&D innovation, at 183.6% of the EU level in 2024, is the highest performing indicator for Serbia in this category – after a rise of 24.8%-points since 2017. In addition, firms' innovation spending per person employed stands at 108.5% of the EU average in 2024, despite the sharp decline of 68.5%-points as the result of the Covid-19 pandemic in 2021. Finally, after a sharp decrease of 79.6%-points in 2021 in the aftermath of the pandemic, the private sector gradually increased the provision of ICT training, pushed by the need to accelerate the digitalisation, reaching 98.9% of the EU level in 2024 on this indicator.

Finance and support**Firm investments****Use of information technologies****Innovation activities**

Serbia has shown a steady increase of 57.4%-points in innovation in the SME sector since 2017, as the country pursued business environment reforms that are key drivers for convergence with the EU (OECD, 2023). Serbia performs at 135.7% of the 2024 EU average on the Innovators dimension. It has also improved on the Linkages dimension with the share of public-private co-publications and the job-to-job mobility of HRST, following an upward trend since 2017, despite the decrease in 2024 compared to 2023. In addition, Serbia performs strongly on collaboration between innovative SMEs and other actors standing at 92.2% of the 2024 EU level, with a 34.3%-point increase since 2023. However, innovation activity has seen a decline in patent and trademark applications compared to 2023 with the overall performance remaining weak on this dimension – 31.6% and 26.1% of the 2024 EU level on both indicators, respectively. Serbia's performance in Intellectual assets is the weakest among all EIS dimensions, reflecting gaps in IPR protection and low public and private R&D investments.

Innovators**Linkages****Intellectual assets****Impacts**

Serbia experienced a considerable increase in exports of medium and high-technology products (+6.1%-points) compared to 2023 (Eurostat, 2022), Germany being the key trading partner with large manufacturing facilities in the country. As SMEs become more innovative, the sales of new-to-market and new-to-firm innovations has increased since 2017 (+31.5%-points), demonstrating the growing firms' capabilities to commercialise their innovations in the context of high levels of trade openness (OECD, 2023). Despite this, Serbia's performance in Sales impacts is below the 2024 EU average (64.8%). Environment sustainability dimension represents an important challenge, as the resource productivity remains low, at 9.3% of the EU average in 2024, and the development of the environment-related technologies dropped by 35.2%-points since 2017 registering a downward trend.

Employment impacts**Sales impacts****Environmental sustainability**

Structural differences

Performance and structure of the economy

Serbia's GDP per capita is less than half of the EU average, with modest increases over the last years, even if it is one of the most diversified economies in the Western Balkans region (OECD, 2024). SMEs demonstrate a higher share of turnover and employment in manufacturing than in the EU. Large enterprises accounting for roughly a third of the employment have a slightly lower share in turnover than the EU, and the employment in knowledge-intensive services follows the same pattern, as Serbia continues to build its ICT skills and promote digitalisation.

Business and entrepreneurship

Serbia boasts a more dynamic entrepreneurial activity compared to the EU average, accompanied by a higher rate of enterprises' birth than in the EU. This is partly due to the state policy to promote SME development and improvements in business climate. In addition, Serbia has proven to be resilient to multiple crises maintaining investor confidence and attracting record FDI investments, almost three times higher than the EU. Buyer sophistication remains below the EU average but together with improving innovativeness of the SME sector, this points to the potential to raise the demand for more innovative products and services.

Innovation profiles

Serbia performs in line with its level of development according to the GII 2023, ranking 8th in its income group (WIPO, 2023). Despite a higher share of firms introducing in-house product innovation than in the EU, twice as many businesses in Serbia rely on the integration of the readily available technologies or contract R&I services instead of developing innovations themselves. This is coherent with the low levels of business sector investments in R&D which the government addresses through more support for financing innovative SMEs (e.g. Science Fund, tax relief on R&D start-ups) (OECD, 2024) to build absorptive capacities of the enterprise sector.

Governance and policy framework

Corruption remains an important issue in Serbia as its CPI score is almost half that of the EU. It hinders business sector development, including innovation, and progress on the rule of law is needed to foster investments in R&D and overall innovation ecosystem development. Serbia has comparable to the EU entrepreneurial education and training at primary and secondary schools level reflected in the dynamism of its entrepreneurial sector. The role of the government in boosting the demand for innovation through public procurement has potential for development as procurement of advanced technology is below the EU average.

Climate change

Comparable data is missing. Serbia updated its Nationally Determined Contribution in 2022 committing to reduce GHG emission by 33.3% by 2030 compared to 1990 emissions. In 2023, the Government adopted the Strategy of the Low Carbon Development for 2023-2030 aiming to cut emissions in the production of electricity and heat, increasing energy efficiency and renewable energy share in the industrial sector (Spasić, 2023).

Demography

Structural reforms aimed at increasing the convergence to the living standards in the EU are ongoing but so far have not been able to curb emigration which has a negative effect on the population growth (-1.7%). Retaining talent is a challenge as labour migration motivated by better employment opportunities in the EU has remained consistently high (around 10%) over the last years (OECD, 2022).

Structural indicators

The table below presents some structural differences between Serbia and the EU.

	RS	EU
Performance and structure of the economy		
GDP per capita	44.7	100
Employment share Manufacturing	19.8	15.8
Employment share High and Medium high-tech	27.9	37.9
Employment share Services	35	39.8
Employment share Knowledge-intensive services	24.5	28.6
Turnover share SMEs	13.2	12.6
Turnover share large enterprises	40.5	49.6
Business and entrepreneurship		
Enterprise births	1.6	0.8
Total Entrepreneurial Activity	10.5	6.8
FDI net inflows	7	1.9
Buyer sophistication	2.3	3.6
Innovation profiles		
In-house product innovators with market novelties	13.3	11.7
In-house product innovators without market novelties	13.1	13.7
In-house business process innovators	10.9	17.6
Innovators that do not develop innovations themselves	12.1	6.1
Innovation active non-innovators	1.1	4.2
Non-innovators with potential to innovate	13.9	17.8
Non-innovators without disposition to innovate	35.6	30.6
Governance and policy frameworks		
Corruption Perceptions Index	36.7	64
Basic-school entrepreneurial education and training	2.5	2.6
Government procurement of advanced technology products	2.8	3.4
Rule of law	-0.1	1
Demography		
Population size (in millions)	6.8	447
Average annual population growth (2021-2023 average)	-1.7	0.3

References

The country's relative strengths and weaknesses for each indicator, compared to other EU Member States and neighbouring countries, can be found in [Annex B](#).

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This report provides the Country profile from the 2024 European Innovation Scoreboard for Serbia

Studies and reports

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