



European
Commission

European Innovation Scoreboard **2023** Country profile **Slovakia**



Innovation

European Innovation Scoreboard 2023 – Country profile Slovakia

European Commission

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Manuscript completed in June 2023.

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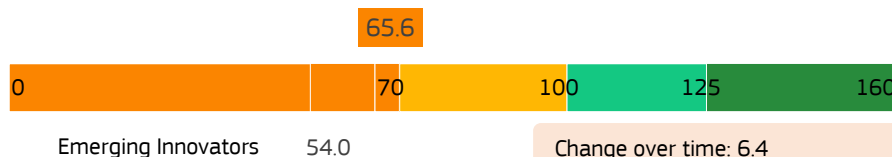
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as part of the European Innovation Scoreboard project
for the European Commission, Directorate-General for Research and Innovation under
Framework Contract N° 2018/RTD/A2/OP/PP-07001-2018 Lot 2 (EDAR)

The European Innovation Scoreboard report and annexes, and the indicators database are available at:

https://research-and-innovation.ec.europa.eu/statistics/performance-indicators/european-innovation-scoreboard_en



Slovakia

	Performance relative to EU in 2023	Performance change 2016- 2023	Performance change 2022- 2023
SUMMARY INNOVATION INDEX	65.6	6.4	4.2
Human resources	91.6	1.7	21.3
Doctorate graduates	85.2	-45.8	0.0
Population with tertiary education	83.2	-2.4	-2.4
Lifelong learning	108.8	87.9	87.9
Attractive research systems	51.7	18.2	2.8
International scientific co-publications	62.5	32.3	-6.0
Most cited publications	39.8	11.8	3.8
Foreign doctorate students	62.3	19.6	8.5
Digitalisation	67.1	12.0	5.2
Broadband penetration	61.3	23.6	10.3
People with above basic overall digital skills	74.9	0.0	0.0
Finance and support	38.1	3.7	1.7
R&D expenditures in the public sector	45.3	-22.6	-1.6
Venture capital expenditures	35.5	16.0	-3.5
Government support for business R&D	33.0	26.9	11.6
Firm investments	56.0	16.5	0.3
R&D expenditure in the business sector	32.6	15.4	2.3
Non-R&D Innovation expenditures	99.6	16.7	-1.8
Innovation expenditures per employee	42.9	17.5	0.3
Use of information technologies	74.7	-9.7	-2.5
Enterprises providing ICT training	59.8	-19.7	-5.1
Employed ICT specialists	90.0	0.0	0.0
Innovators	42.3	15.6	14.2
Product innovators (SMEs)	42.9	16.0	0.5
Business process innovators (SMEs)	41.8	15.1	28.8
Linkages	49.8	10.7	-3.6
Innovative SMEs collaborating with others	59.1	-11.3	-8.8
Public-private co-publications	80.5	39.0	-7.2
Job-to-job mobility of HRST	29.2	17.6	2.9
Intellectual assets	49.4	7.0	-1.7
PCT patent applications	33.1	3.3	-0.7
Trademark applications	82.4	26.2	4.2
Design applications	37.2	-3.4	-7.5
Employment impacts	55.9	11.7	9.6
Employment in knowledge-intensive activities	68.7	0.0	0.0
Employment in innovative enterprises	45.4	22.8	18.6
Sales impacts	101.8	0.4	11.5
Medium and high-tech goods exports	119.9	8.5	6.4
Knowledge-intensive services exports	65.1	20.1	0.8
Sales of innovative products	114.5	-36.6	32.7
Environmental sustainability	95.5	-2.8	-5.7
Resource productivity	75.8	17.4	5.7
Air emissions by fine particulate matter	107.6	21.9	0.2
Environment-related technologies	97.6	-45.4	-20.3

The second column shows performance relative to that of the EU in 2023. Colours next to the column show matching colour codes: dark green: above 125% of the performance of the EU in 2023; light green: between 100% and 125%; light orange: between 70% and 100%; dark orange: below 70%. The next columns show performance change over time between 2016 and 2023 and between 2022 and 2023, with scores relative to those of the EU in 2016. Positive (negative) performance changes are shown in green (red).

SLOVAKIA is an **Emerging Innovator** with performance at 65.6% of the EU average. Performance is above the average of the Emerging Innovators. Performance is increasing at a rate lower than that of the EU (8.5%-points). The country's performance gap to the EU is becoming larger.

Relative strengths

Medium and high-tech goods exports
Sales of innovative products
Lifelong learning
Air emissions by fine particulate matter
Non-R&D Innovation expenditures

Relative weaknesses

Job-to-job mobility of HRST
R&D expenditure in the business sector
Government support for business R&D
PCT patent applications
Venture capital expenditures

Strong increases since 2016

Lifelong learning
Public-private co-publications
International scientific co-publications

Strong decreases since 2016

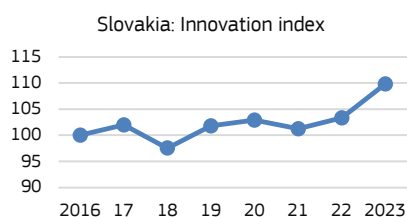
Doctorate graduates
Environment-related technologies
Sales of innovative products

Strong increases since 2022

Lifelong learning
Sales of innovative products
Business process innovators

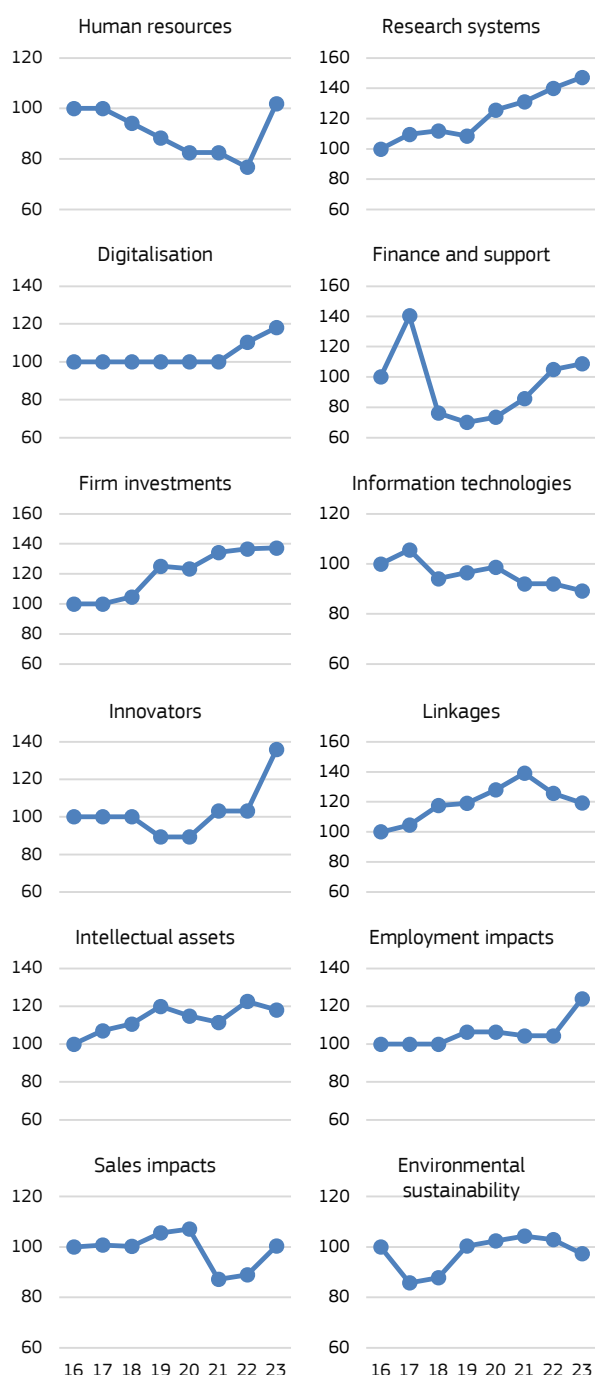
Strong decreases since 2022

Environment-related technologies
Innovative SMEs collaborating with others
Design applications



The graph on the left shows the evolution of **innovation performance over time** against the performance of the country in 2016. Innovation performance initially rose but fell in 2018, followed by an increase from 2019 to 2020. However, performance declined in 2021 before showing improvement since then, resulting in a 10% increase in 2023.

The graphs below show the evolution of innovation performance in the different **innovation dimensions** against the performance of the country in 2016. Performance increased most strongly for Research systems. Performance declined for Information technologies and Environmental sustainability.





Performance is measured relative to that of the country in 2016 (=100).

Structural differences with the EU are shown below:

- Slovakia has lower per capita income and a slower growing economy. Manufacturing takes up a larger share of the economy, with both large enterprises and SMEs accounting for a smaller share of turnover.
- Enterprise births, and Entrepreneurial Activity add positively to the innovation climate, FDI net inflows, Top R&D spenders, and Buyer sophistication add negatively.
- Slovakia has a higher share of Non-innovators with potential to innovate.
- Entrepreneurial training and government procurement as drivers of research and innovation are below the EU average.
- Slovakia shows a mixed performance on Climate change related indicators with below average share of material resources coming from recycled waste materials score on environmental innovation and score on environmental innovation.

	SK	EU
Performance and structure of the economy		
GDP per capita (PPS)	22,500	32,600
Average annual GDP growth (%)	2.0	4.4
Employment share Manufacturing (NACE C) (%)	24.9	16.4
of which High and Medium high-tech (%)	45.7	38.0
Employment share Services (NACE G-N) (%)	34.2	41.1
of which Knowledge-intensive services (%)	32.5	35.8
Turnover share SMEs (%)	33.9	34.1
Turnover share large enterprises (%)	43.1	49.6
Foreign-controlled enterprises – share of value added (%)	20.5	11.8
Business and entrepreneurship		
Enterprise births (10+ employees) (%)	1.5	1.0
Total Entrepreneurial Activity (TEA) (%)	11.2	6.8
FDI net inflows (% GDP)	0.6	2.1
Top R&D spending enterprises per 10 mln. population	0.0	20.3
Buyer sophistication (1 to 7 best)	3.0	3.7
Innovation profiles		
In-house product innovators with market novelties	8.9	12.2
In-house product innovators without market novelties	5.3	12.8
In-house business process innovators	14.5	16.5
Innovators that do not develop innovations themselves	2.8	6.5
Innovation active non-innovators	5.1	4.1
Non-innovators with potential to innovate	36.5	17.2
Non-innovators without disposition to innovate	27.0	30.7
Governance and policy framework		
Corruption Perceptions Index (0 to 100 best)	51.3	64.0
Basic school entrepreneurial education and training	3.2	3.3
Govt. procurement of advanced tech. products	3.1	3.5
Rule of law (-2.5 to 2.5 best)	0.6	1.0
Climate change indicators		
Circular material use rate	8.4	11.8
Greenhouse gas emissions intensity of energy consumption	77.7	82.8
Eco-Innovation Index	77.7	100.0
Demography		
Population size	5.5	447.1
Average annual population growth (%)	-0.2	-0.1
Population density	111.8	108.8



This report provides the Country profile from the 2023 European Innovation Scoreboard for Slovakia.

Studies and reports