



34.9



Emerging Innovators 50.0

Change over time: 0.9

Bosnia and Herzegovina	Performance relative to EU in 2022	Performance change 2015-2022	Performance change 2021-2022
SUMMARY INNOVATION INDEX	34.9	0.9	-0.9
Human resources	10.9	3.4	0.0
Doctorate graduates	16.8	8.0	0.0
Population with tertiary education	0.0	0.0	0.0
Lifelong learning	16.7	0.0	0.0
Attractive research systems	24.1	10.1	-10.0
International scientific co-publications	17.2	19.4	3.1
Most cited publications	23.8	4.5	-13.9
Foreign doctorate students	N/A	N/A	N/A
Digitalisation	31.0	0.0	0.0
Broadband penetration	51.3	0.0	0.0
People with above basic overall digital skills	4.5	0.0	0.0
Finance and support	0.7	-1.8	-0.3
R&D expenditures in the public sector	0.0	-1.6	0.0
Venture capital expenditures	N/A	N/A	N/A
Government support for business R&D	1.7	-1.8	-0.6
Firm investments	0.4	-3.0	0.0
R&D expenditure in the business sector	1.4	-9.3	0.0
Non-R&D Innovation expenditures	0.0	0.0	0.0
Innovation expenditures per employee	0.0	0.0	0.0
Use of information technologies	71.7	-6.5	-6.5
Enterprises providing ICT training	68.8	-6.3	-6.3
Employed ICT specialists	N/A	N/A	N/A
Innovators	110.5	0.0	0.0
Product innovators (SMEs)	151.7	0.0	0.0
Business process innovators (SMEs)	74.5	0.0	0.0
Linkages	15.2	13.1	5.8
Innovative SMEs collaborating with others	N/A	N/A	N/A
Public-private co-publications	26.3	23.1	10.2
Job-to-job mobility of HRST	N/A	N/A	N/A
Intellectual assets	8.9	-5.8	-0.5
PCT patent applications	14.5	-18.6	-2.2
Trademark applications	9.9	6.7	1.6
Design applications	0.4	-0.1	0.0
Employment impacts	79.8	0.0	0.0
Employment in knowledge-intensive activities	N/A	N/A	N/A
Employment in innovative enterprises	71.5	0.0	0.0
Sales impacts	31.9	7.0	0.0
Medium and high-tech goods exports	29.0	14.1	0.0
Knowledge-intensive services exports	7.3	5.1	0.0
Sales of innovative products	67.2	0.0	0.0
Environmental sustainability	88.8	1.1	-1.1
Resource productivity	14.7	3.0	-3.2
Air emissions by fine particulate matter	N/A	N/A	N/A
Environment-related technologies	190.8	0.0	0.0

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.

BOSNIA AND HERZEGOVINA is an **Emerging Innovator** with performance at 34.9% of the EU average. Performance is below the average of the Emerging Innovators (50.0%). Performance is increasing (0.9%-points) at a rate lower than that of the EU (9.9%-points). The country's performance gap to the EU is becoming larger.

Relative strengths

- Environment-related technologies
- Product innovators
- Business process innovators
- Employment in innovative enterprises
- Enterprises providing ICT training

Relative weaknesses

- Population with tertiary education
- R&D expenditures in the public sector
- Non-R&D Innovation expenditures
- Innovation expenditures per employee
- Design applications

Strong increases since 2015

- Public-private co-publications
- International scientific co-publications
- Medium and high-tech goods exports

Strong decreases since 2015

- PCT patent applications
- R&D expenditure in the business sector
- Enterprises providing ICT training

Strong increases since 2021

- Public-private co-publications
- International scientific co-publications
- Trademark applications

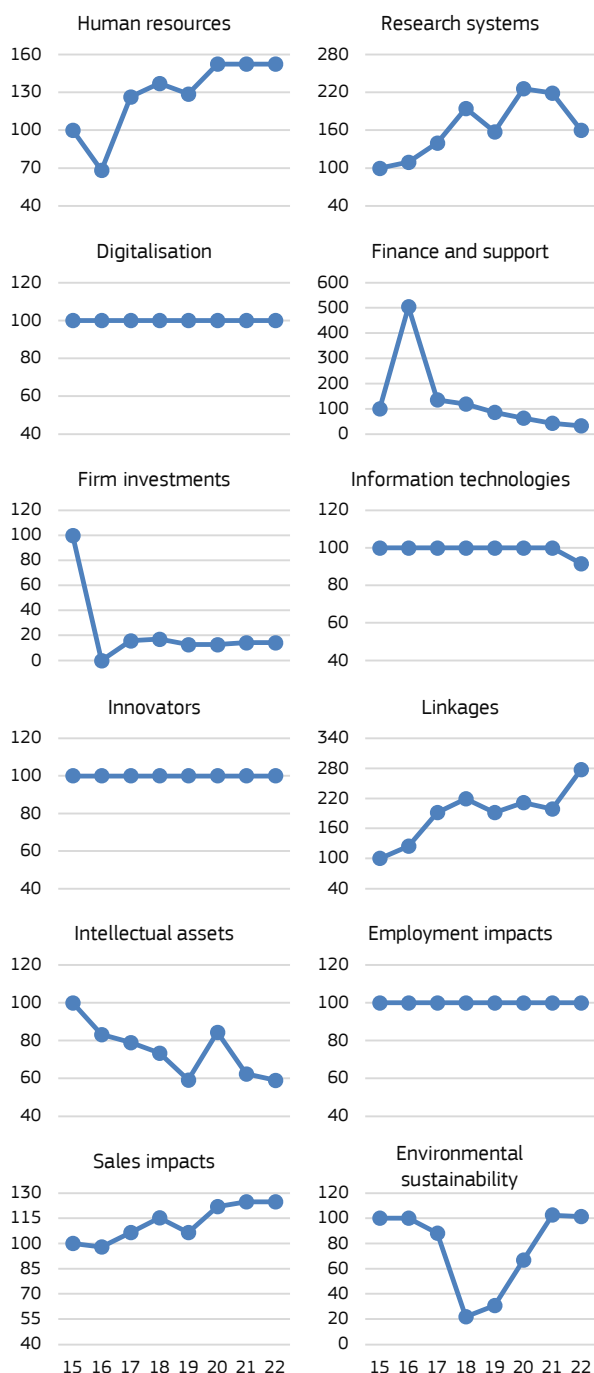
Strong decreases since 2021

- Most cited publications
- Enterprises providing ICT training
- Resource productivity



The graph on the left shows the evolution of **innovation performance over time** against the performance of the country in 2015. Innovation performance decreased between 2015 and 2019, followed by relatively strong improvements in 2020 and 2021 and a small decline in 2022, leading to an overall modest 2% improvement 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 Human resources, Research systems and Linkages. Performance did not change for Digitalisation, Innovators and Employment impacts, and declined for Finance and support, Information technologies and Intellectual assets.



Structural differences with the EU are shown below:

- Bosnia Herzegovina 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.
- Entrepreneurial activity and FDI net inflows add positively to the innovation climate, the absence of top R&D spenders adds negatively.
- Information on Innovation profiles is not available.
- 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.

	BA	EU
Performance and structure of the economy		
GDP per capita (PPS)	10,190	31,200
Average annual GDP growth (%)	0.6	-0.4
Employment share Manufacturing (NACE C) (%)	18.0	16.4
of which High and Medium high-tech (%)	n/a	38.0
Employment share Services (NACE G-N) (%)	29.3	41.1
of which Knowledge-intensive services (%)	n/a	35.8
Turnover share SMEs (%)	49.3	34.8
Turnover share large enterprises (%)	30.6	48.2
Foreign-controlled enterprises – share of value added (%)	9.1	11.7
Business and entrepreneurship		
Enterprise births (10+ employees) (%)	n/a	1.0
Total Entrepreneurial Activity (TEA) (%)	4.0	7.3
FDI net inflows (% GDP)	2.4	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	n/a	10.7
In-house product innovators without market novelties	n/a	12.3
In-house business process innovators	n/a	11.0
Innovators that do not develop innovations themselves	n/a	11.6
Innovation active non-innovators	n/a	3.3
Non-innovators with potential to innovate	n/a	19.9
Non-innovators without disposition to innovate	n/a	31.3
Governance and policy framework		
Ease of starting a business (0 to 100 best)	65.4	76.5
Basic school entrepreneurial education and training	n/a	3.5
Govt. procurement of advanced tech. products	1.9	3.5
Rule of law (-2.5 to 2.5 best)	-0.3	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	3.4	447.0
Average annual population growth (%)	-0.9	0.1
Population density	65.5	108.8

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