European Commission

European Innovation Scoreboard **2023** Country profile **Croatia**

Innovation

European Innovation Scoreboard 2023 – Country profile Croatia

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European Innovation Scoreboard 2023 Country profile Croatia

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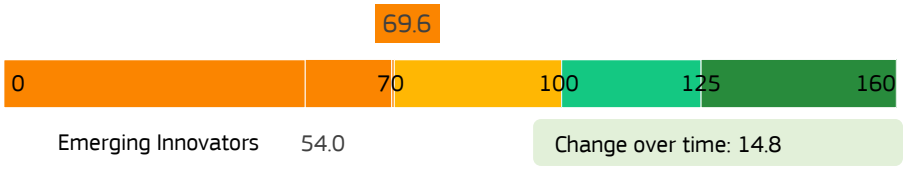
The European Innovation Scoreboard report and annexes, and the indicators database are available at:

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



Croatia

	Performance relative to EU in 2023	Performance change 2016-2023	Performance change 2022-2023
SUMMARY INNOVATION INDEX	**69.6**	**14.8**	**1.1**
Human resources	**49.3**	**-7.2**	**-2.3**
Doctorate graduates	55.5	-11.4	0.0
Population with tertiary education	62.4	-1.2	-1.2
Lifelong learning	26.5	-7.7	-7.7
Attractive research systems	**55.0**	**33.8**	**4.4**
International scientific co-publications	84.4	62.7	9.6
Most cited publications	43.9	20.6	3.0
Foreign doctorate students	41.6	37.2	2.7
Digitalisation	**77.3**	**30.6**	**7.5**
Broadband penetration	45.3	60.2	14.7
People with above basic overall digital skills	121.0	0.0	0.0
Finance and support	**97.0**	**27.1**	**37.8**
R&D expenditures in the public sector	84.4	41.9	1.6
Venture capital expenditures	134.9	123.9	61.1
Government support for business R&D	62.6	-95.4	63.1
Firm investments	**38.0**	**-19.5**	**-18.9**
R&D expenditure in the business sector	36.8	16.2	-1.5
Non-R&D Innovation expenditures	62.7	-64.3	-50.6
Innovation expenditures per employee	18.9	-14.0	-7.1
Use of information technologies	**80.5**	**-10.4**	**-4.8**
Enterprises providing ICT training	90.8	-24.8	-13.4
Employed ICT specialists	70.0	3.4	3.4
Innovators	**126.9**	**87.6**	**-4.0**
Product innovators (SMEs)	133.8	94.7	-17.8
Business process innovators (SMEs)	120.9	79.9	10.7
Linkages	**112.3**	**74.1**	**5.2**
Innovative SMEs collaborating with others	106.3	68.8	-4.1
Public-private co-publications	147.4	98.4	2.9
Job-to-job mobility of HRST	102.1	67.6	14.7
Intellectual assets	**46.7**	**10.0**	**4.6**
PCT patent applications	35.9	-3.8	0.4
Trademark applications	72.0	33.9	8.0
Design applications	34.8	8.8	7.3
Employment impacts	**76.9**	**21.1**	**0.0**
Employment in knowledge-intensive activities	56.6	0.0	0.0
Employment in innovative enterprises	93.6	41.1	0.0
Sales impacts	**51.7**	**17.3**	**-3.8**
Medium and high-tech goods exports	41.3	-9.1	-7.8
Knowledge-intensive services exports	21.0	7.4	-12.4
Sales of innovative products	98.4	70.4	12.9
Environmental sustainability	**57.2**	**-19.2**	**-9.5**
Resource productivity	80.0	16.4	10.4
Air emissions by fine particulate matter	67.5	18.1	1.1
Environment-related technologies	19.7	-86.7	-35.4

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).

CROATIA is an **Emerging Innovator** with performance at 69.6% of the EU average. Performance is above the average of the Emerging Innovators. Performance is increasing at a rate higher than that of the EU (8.5%-points). The country's performance gap to the EU is becoming smaller.

Relative strengths

Public-private co-publications
Venture capital expenditures
Product innovators
People with above basic overall digital skills
Business process innovators

Relative weaknesses

Innovation expenditures per employee
Environment-related technologies
Knowledge-intensive services exports
Lifelong learning
Design applications

Strong increases since 2016

Venture capital expenditures
Public-private co-publications
Product innovators

Strong decreases since 2016

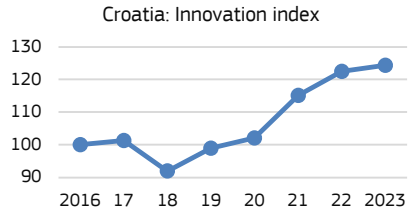
Government support for business R&D
Environment-related technologies
Non-R&D Innovation expenditures

Strong increases since 2022

Government support for business R&D
Venture capital expenditures
Broadband penetration

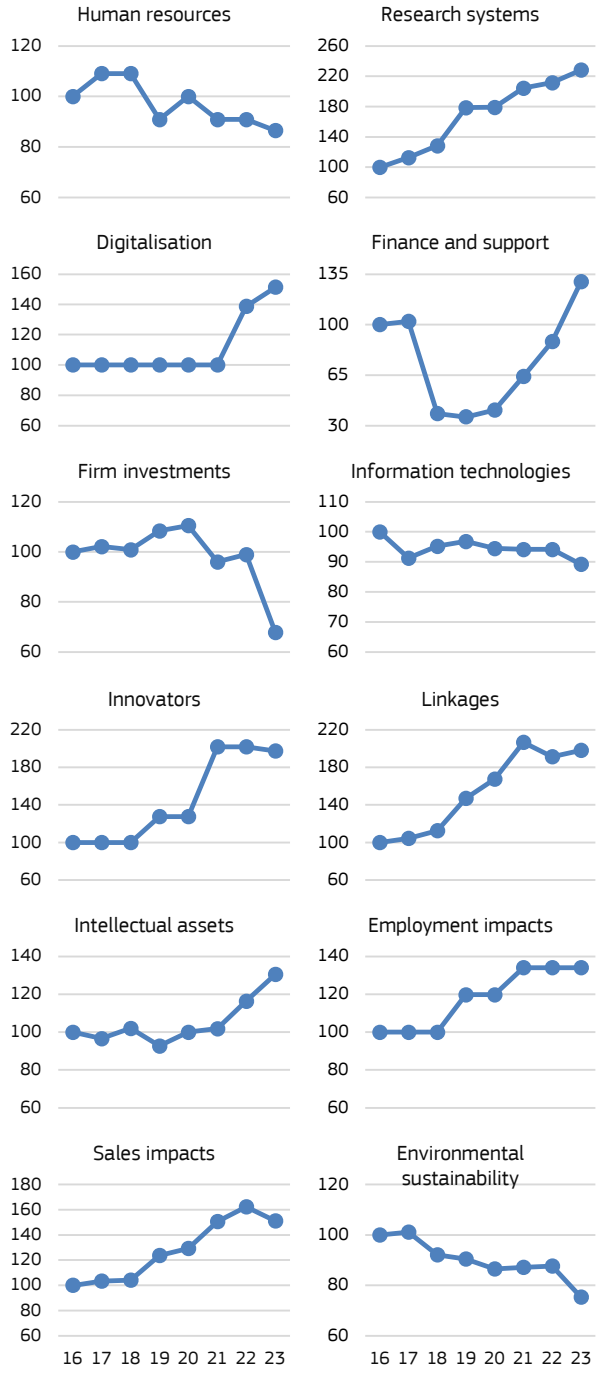
Strong decreases since 2022

Non-R&D Innovation expenditures
Environment-related technologies
Product innovators



The graph on the left shows the evolution of **innovation performance over time** against the performance of the country in 2016. After an initial decline, innovation performance has increased consistently since 2018, leading to a 24% performance 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 strongest in Research systems, Innovators and Linkages. Performance declined for Human resources, Firm investments, 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:

- Croatia has lower per capita income but a much faster growing economy. Manufacturing takes up a larger share of the economy, with SMEs accounting for a larger share of turnover.
- Enterprise births, Entrepreneurial activity and FDI net inflows add positively to the innovation climate, the absence of top R&D spenders add negatively.
- Croatia has a slightly higher share of In-house product innovators without market novelties.
- Entrepreneurial training and government procurement are below the EU average as drivers of research and innovation.
- Croatia shows a worse performance on Climate change related indicators with a lower share of material resources coming from recycled waste materials, a below average reduction in greenhouse gas emissions and a below average score on environmental innovation.

	HR	EU
Performance and structure of the economy		
GDP per capita (PPS)	22,600	32,600
Average annual GDP growth (%)	11.6	4.4
Employment share Manufacturing (NACE C) (%)	17.8	16.4
of which High and Medium high-tech (%)	20.1	38.0
Employment share Services (NACE G-N) (%)	39.2	41.1
of which Knowledge-intensive services (%)	31.6	35.8
Turnover share SMEs (%)	42.6	34.1
Turnover share large enterprises (%)	37.3	49.6
Foreign-controlled enterprises – share of value added (%)	14.1	11.8
Business and entrepreneurship		
Enterprise births (10+ employees) (%)	2.5	1.0
Total Entrepreneurial Activity (TEA) (%)	11.8	6.8
FDI net inflows (% GDP)	5.1	2.1
Top R&D spending enterprises per 10 mln. population	0.0	20.3
Buyer sophistication (1 to 7 best)	2.8	3.7
Innovation profiles		
In-house product innovators with market novelties	14.4	12.2
In-house product innovators without market novelties	15.5	12.8
In-house business process innovators	15.9	16.5
Innovators that do not develop innovations themselves	8.2	6.5
Innovation active non-innovators	1.1	4.1
Non-innovators with potential to innovate	18.2	17.2
Non-innovators without disposition to innovate	26.9	30.7
Governance and policy framework		
Corruption Perceptions Index (0 to 100 best)	48.0	64.0
Basic school entrepreneurial education and training	2.9	3.3
Govt. procurement of advanced tech. products	2.5	3.5
Rule of law (-2.5 to 2.5 best)	0.3	1.0
Climate change indicators		
Circular material use rate	5.5	11.8
Greenhouse gas emissions intensity of energy consumption	87.4	82.8
Eco-Innovation Index	73.1	100.0
Demography		
Population size	4.0	447.1
Average annual population growth (%)	-2.4	-0.1
Population density	73.3	108.8

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

Studies and reports