



European
Commission

European Innovation Scoreboard **2023** Country profile **North Macedonia**



Innovation

European Innovation Scoreboard 2023 – Country profile North Macedonia

European Commission

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Manuscript completed in June 2023.

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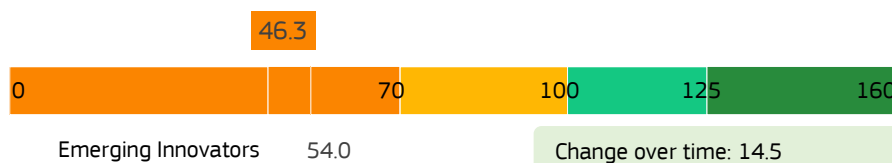
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as part of the European Innovation Scoreboard project
for the European Commission, Directorate-General for Research and Innovation under
Framework Contract N° 2018/RTD/A2/OP/PP-07001-2018 Lot 2 (EDAR)

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



North Macedonia

	Performance relative to EU in 2023	Performance change 2016- 2023	Performance change 2022- 2023
SUMMARY INNOVATION INDEX	46.3	14.5	3.4
Human resources	32.8	8.7	0.0
Doctorate graduates	11.0	-11.4	0.0
Population with tertiary education	75.1	42.5	0.0
Lifelong learning	8.8	0.0	0.0
Attractive research systems	84.8	76.4	19.2
International scientific co-publications	25.5	21.5	7.9
Most cited publications	48.2	29.6	21.6
Foreign doctorate students	228.7	234.8	24.3
Digitalisation	43.2	1.8	0.0
Broadband penetration	61.3	3.5	0.0
People with above basic overall digital skills	18.4	0.0	0.0
Finance and support	15.6	-4.3	0.1
R&D expenditures in the public sector	25.0	-12.9	0.0
Venture capital expenditures	N/A	N/A	N/A
Government support for business R&D	6.7	8.0	0.2
Firm investments	40.0	0.5	0.0
R&D expenditure in the business sector	3.5	1.5	0.0
Non-R&D Innovation expenditures	114.5	0.0	0.0
Innovation expenditures per employee	14.4	0.0	0.0
Use of information technologies	32.8	-5.6	0.0
Enterprises providing ICT training	42.0	-29.3	0.0
Employed ICT specialists	23.3	17.2	0.0
Innovators	60.0	5.3	0.0
Product innovators (SMEs)	49.2	-4.8	0.0
Business process innovators (SMEs)	69.5	16.0	0.0
Linkages	50.0	34.9	-16.5
Innovative SMEs collaborating with others	46.0	-11.4	0.0
Public-private co-publications	28.2	23.9	3.9
Job-to-job mobility of HRST	62.5	82.4	-41.2
Intellectual assets	14.4	9.0	-2.0
PCT patent applications	13.3	12.0	-9.7
Trademark applications	28.2	14.7	7.5
Design applications	1.0	0.8	0.4
Employment impacts	30.7	8.2	0.0
Employment in knowledge-intensive activities	18.1	16.9	0.0
Employment in innovative enterprises	41.0	0.0	0.0
Sales impacts	68.8	16.6	-2.1
Medium and high-tech goods exports	111.8	16.4	-8.7
Knowledge-intensive services exports	55.1	30.1	4.4
Sales of innovative products	22.6	0.0	0.0
Environmental sustainability	87.3	29.2	43.3
Resource productivity	38.2	15.7	0.0
Air emissions by fine particulate matter	N/A	N/A	N/A
Environment-related technologies	161.8	44.8	82.1

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).

NORTH MACEDONIA is an **Emerging Innovator** with performance at 46.3% of the EU average. Performance is below 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

Foreign doctorate students
Environment-related technologies
Non-R&D Innovation expenditures
Medium and high-tech goods exports
Population with tertiary education

Relative weaknesses

Design applications
R&D expenditure in the business sector
Government support for business R&D
Lifelong learning
Doctorate graduates

Strong increases since 2016

Foreign doctorate students
Job-to-job mobility of HRST
Environment-related technologies

Strong decreases since 2016

Enterprises providing ICT training
R&D expenditures in the public sector
Doctorate graduates

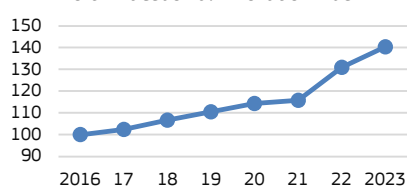
Strong increases since 2022

Environment-related technologies
Foreign doctorate students
Most cited publications

Strong decreases since 2022

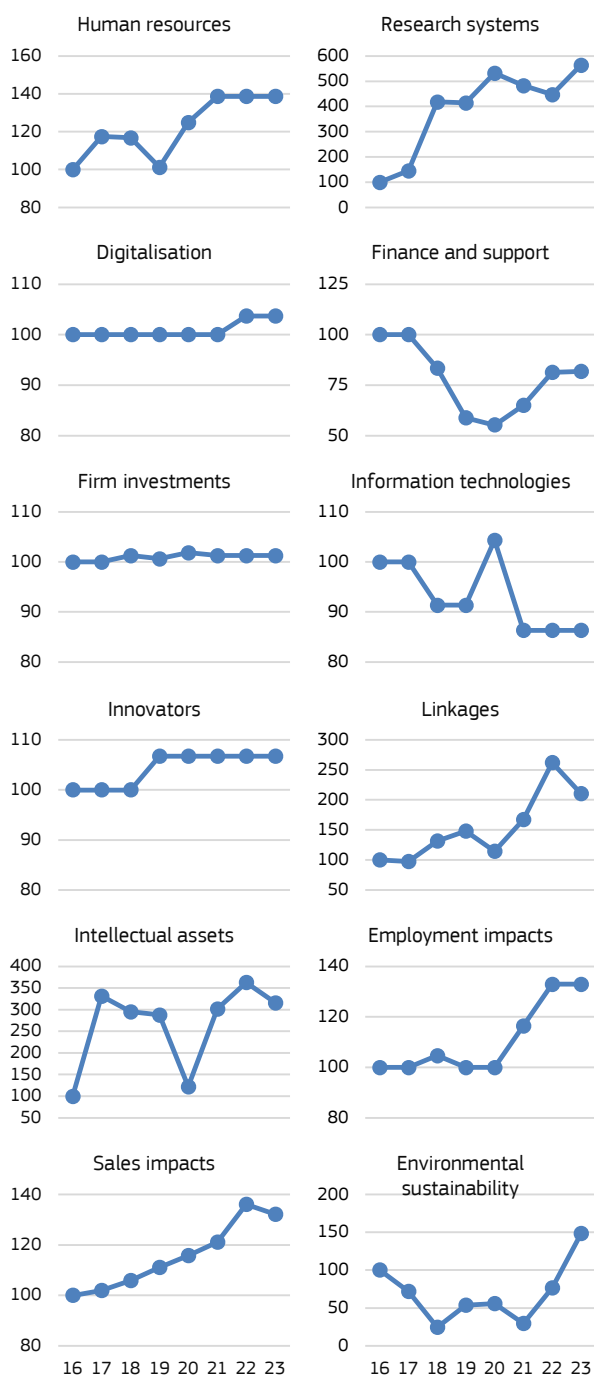
Job-to-job mobility of HRST
PCT patent applications
Medium and high-tech goods exports

North Macedonia: Innovation index



The graph on the left shows the evolution of **innovation performance over time** against the performance of the country in 2016. Innovation performance started to increase in 2017 with an acceleration in 2022 and 2023, leading to an overall improvement of 40% between 2016 and 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, Linkages, Intellectual assets and Environmental sustainability. Performance declined for Finance and support and Information technologies.





Structural differences with the EU are shown below:

- North Macedonia has lower per capita income. Manufacturing takes up a larger share of the economy, with SMEs accounting for a larger share of turnover.
- FDI net inflows add positively to the innovation climate, Entrepreneurial Activity, Top R&D spenders, and Buyer sophistication add negatively.
- Information on Innovation profiles is not available.
- Entrepreneurial training is above, and government procurement is below the EU average as drivers of research and innovation.
- Information on Climate change related indicators is not available.

	MK	EU
Performance and structure of the economy		
GDP per capita (PPS)	11,300	32,600
Average annual GDP growth (%)	n/a	4.4
Employment share Manufacturing (NACE C) (%)	19.9	16.4
of which High and Medium high-tech (%)	25.4	38.0
Employment share Services (NACE G-N) (%)	33.0	41.1
of which Knowledge-intensive services (%)	21.8	35.8
Turnover share SMEs (%)	44.6	34.1
Turnover share large enterprises (%)	35.6	49.6
Foreign-controlled enterprises – share of value added (%)	n/a	11.8
Business and entrepreneurship		
Enterprise births (10+ employees) (%)	n/a	1.0
Total Entrepreneurial Activity (TEA) (%)	6.2	6.8
FDI net inflows (% GDP)	3.2	2.1
Top R&D spending enterprises per 10 mln. population	0.0	20.3
Buyer sophistication (1 to 7 best)	2.9	3.7
Innovation profiles		
In-house product innovators with market novelties	n/a	12.2
In-house product innovators without market novelties	n/a	12.8
In-house business process innovators	n/a	16.5
Innovators that do not develop innovations themselves	n/a	6.5
Innovation active non-innovators	n/a	4.1
Non-innovators with potential to innovate	n/a	17.2
Non-innovators without disposition to innovate	n/a	30.7
Governance and policy framework		
Corruption Perceptions Index (0 to 100 best)	38.0	64.0
Basic school entrepreneurial education and training	3.4	3.3
Govt. procurement of advanced tech. products	2.7	3.5
Rule of law (-2.5 to 2.5 best)	n/a	1.0
Climate change indicators		
Circular material use rate	n/a	11.8
Greenhouse gas emissions intensity of energy consumption	n/a	82.8
Eco-Innovation Index	n/a	100.0
Demography		
Population size	2.0	447.1
Average annual population growth (%)	-5.9	-0.1
Population density	83.4	108.8

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



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

Studies and reports