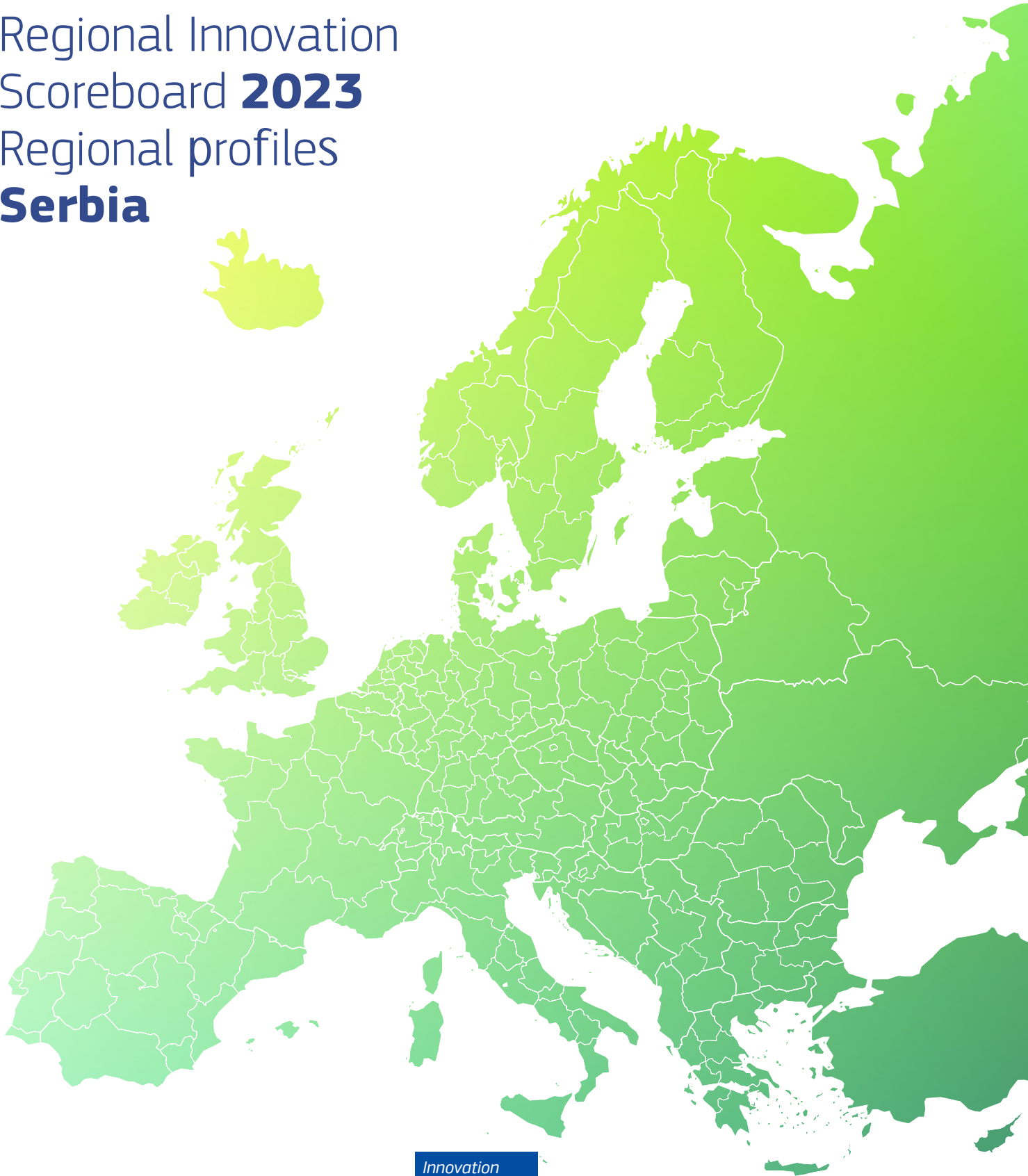# Regional Innovation Scoreboard **2023**
Regional profiles
Serbia

Innovation

Regional Innovation Scoreboard 2023 – Regional profiles Serbia

Regional Innovation Scoreboard 2023

Regional profiles Serbia

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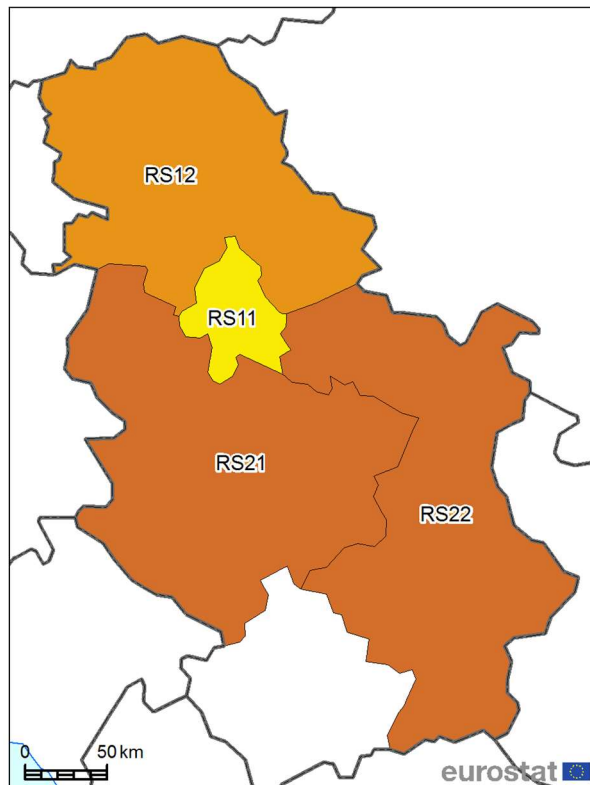
SERBIA

Map administrative boundaries: ©EuroGeographics ©UN-FAO ©Turkstat

NUTS	Region	RII	Rank	Group	Change
RS	Serbia	63.2	--	Emerging Innovator	15.1
RS11	Belgrade	82.1	151	Moderate Innovator	23.2
RS12	Vojvodina	63.8	191	Emerging Innovator +	16.5
RS21	Šumadija and Western Serbia	48.7	220	Emerging Innovator	6.6
RS22	Southern and Eastern Serbia	49.6	219	Emerging Innovator	11.7

Serbia is an Emerging Innovator and includes four regions.

Belgrade (RS11) is the most innovative region and the only Moderate Innovator. The other regions are Emerging Innovators.

Performance has increased for all regions, most strongly for *Belgrade* (RS11). For three regions performance increased at a higher rate than that of the EU (8.5), only for *Šumadija and Western Serbia* (RS21) performance increased at a lower rate.

Beogradski region (RS11)

	Data	Normalised score	Relative to	
			RS	EU
Tertiary education	47.3	0.661	182	126
Lifelong learning	7.4	0.242	168	65
International scientific co-publications	1931	0.466	266	152
Most-cited scientific publications	525.2	0.243	100	45
Above average digital skills	14.1	0.186	127	40
R&D expenditures public sector	0.90	0.619	133	109
R&D expenditures business sector	0.67	0.449	138	67
Non-R&D innovation expenditures	±	0.252	79	62
Innovation expenditures per person employed	±	0.214	92	35
Employed ICT specialists	7.4	0.909	247	172
Product innovators	±	0.874	102	157
Business process innovators	±	0.679	99	105
Innovative SMEs collaborating	±	0.340	117	70
Public-private co-publications	211.3	0.484	164	124
PCT patent applications	0.30	0.187	100	30
Trademark applications	0.89	0.058	83	12
Design applications	0.04	0.060	127	10
Employment knowledge-intensive activities	19.4	0.720	171	127
Employment innovative enterprises	±	0.629	109	110
Sales of innovative products	±	0.555	100	116
Air emissions by fine particulates	24.6	0.000	0	0
Average normalised score	--	0.420	--	--
Country EIS-RIS correction factor	--	1.069	--	--
Regional Innovation Index (RII) 2023	--	0.449	--	--
Performance 2023 relative to EU in 2023	--	--	129.8	82.1
Performance 2023 relative to EU in 2016	--	--	--	89.0
Regional Innovation Index (RII) 2016	--	0.332	--	--
Performance 2016 relative to EU in 2016	--	--	123.1	65.8
Performance change over time	--	--	6.7	23.2

± Scores are not shown as these would allow recalculating confidential regional CIS data.

Beogradski region (RS11) is a Moderate Innovator. Innovation performance has increased over time (23.2%).

The first 21 rows and two data columns in the table on the left show the values and the normalised scores per indicator. The last two data columns show relative performance of the normalised scores compared to Serbia and the EU. The next 7 rows show the calculation of the Regional Innovation Index (RII), the RII relative to both Serbia (129.8) and the EU (82.1) in 2023, the RII in 2023 relative to the EU in 2016 (89), and the RII in 2016 relative to both Serbia (123.1) and the EU in 2016 (65.8). The last row shows performance change between 2016 and 2023 compared to Serbia (6.7%) and to the EU (23.2%).

The radar graph shows relative strengths compared to Serbia (orange line) and the EU (blue line), showing relative strengths (e.g. Employed ICT specialists) and weaknesses (e.g. Design applications).

The table below shows data highlighting possible structural differences, e.g. Population density (above EU average) and Employment in Manufacturing (below EU average).

	RS11	RS	EU
Share of employment in:			
Agriculture & Mining (A-B)	4.3	15.8	4.4
Manufacturing (C)	11.1	19.2	16.4
Utilities & Construction (D-F)	8.4	8.2	8.3
Services (G-N)	69.8	51.4	63.7
Public administration (O-U)	6.4	5.3	7.2
Average number of employed persons per enterprise	n/a	n/a	5.1
GDP per capita (PPS)	23,300	14,400	32,400
GDP per capita growth (PPS)	5.0	6.0	2.5
Population density	536	91	106
Urbanisation	86.4	64.5	75.8
Population size (000s)	1,690	6,870	447,210
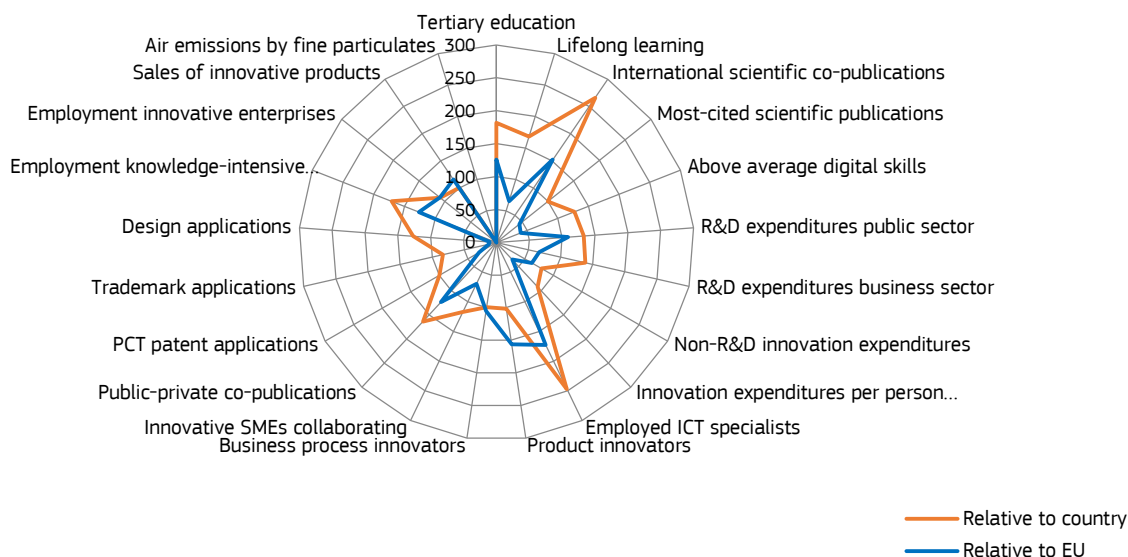
Region Vojvodine (RS12)

	Data	Normalised score	Relative to	
			RS	EU
Tertiary education	30.2	0.282	77	54
Lifelong learning	4.7	0.140	97	38
International scientific co-publications	686	0.164	94	54
Most-cited scientific publications	532.1	0.248	102	45
Above average digital skills	11.8	0.134	91	28
R&D expenditures public sector	0.45	0.406	87	71
R&D expenditures business sector	0.23	0.263	81	39
Non-R&D innovation expenditures	±	0.273	86	68
Innovation expenditures per person employed	±	0.234	100	39
Employed ICT specialists	2.5	0.263	71	50
Product innovators	±	0.915	106	164
Business process innovators	±	0.767	112	119
Innovative SMEs collaborating	±	0.288	100	59
Public-private co-publications	91.9	0.319	108	81
PCT patent applications	0.30	0.187	100	30
Trademark applications	1.48	0.098	141	20
Design applications	0.00	0.000	0	0
Employment knowledge-intensive activities	13.1	0.422	100	74
Employment innovative enterprises	±	0.594	103	103
Sales of innovative products	±	0.673	122	140
Air emissions by fine particulates	19.3	0.200	591	33
Average normalised score	--	0.327	--	--
Country EIS-RIS correction factor	--	1.069	--	--
Regional Innovation Index (RII) 2023	--	0.350	--	--
Performance 2023 relative to EU in 2023	--	--	101.0	63.8
Performance 2023 relative to EU in 2016	--	--	--	69.3
Regional Innovation Index (RII) 2016	--	0.266	--	--
Performance 2016 relative to EU in 2016	--	--	98.7	52.7
Performance change over time	--	--	2.3	16.5

± Scores are not shown as these would allow recalculating confidential regional CIS data.

Region Vojvodine (RS12) is an Emerging Innovator +. Innovation performance has increased over time (16.5%). The first 21 rows and two data columns in the table on the left show the values and the normalised scores per indicator. The last two data columns show relative performance of the normalised scores compared to Serbia and the EU. The next 7 rows show the calculation of the Regional Innovation Index (RII), the RII relative to both Serbia (101) and the EU (63.8) in 2023, the RII in 2023 relative to the EU in 2016 (69.3), and the RII in 2016 relative to both Serbia (98.7) and the EU in 2016 (52.7). The last row shows performance change between 2016 and 2023 compared to Serbia (2.3%) and to the EU (16.5%).

The radar graph shows relative strengths compared to Serbia (orange line) and the EU (blue line), showing relative strengths (e.g. Product innovators) and weaknesses (e.g. Design applications).

The table below shows data highlighting possible structural differences, e.g. Employment in Manufacturing (above EU average) and Employment in Public administration (below EU average).

	RS12	RS	EU
Share of employment in:			
Agriculture & Mining (A-B)	15.2	15.8	4.4
Manufacturing (C)	24.3	19.2	16.4
Utilities & Construction (D-F)	8.0	8.2	8.3
Services (G-N)	47.9	51.4	63.7
Public administration (O-U)	4.6	5.3	7.2
Average number of employed persons per enterprise	n/a	n/a	5.1
GDP per capita (PPS)	13,800	14,400	32,400
GDP per capita growth (PPS)	4.9	6.0	2.5
Population density	87	91	106
Urbanisation	68.3	64.5	75.8
Population size (000s)	1,830	6,870	447,210
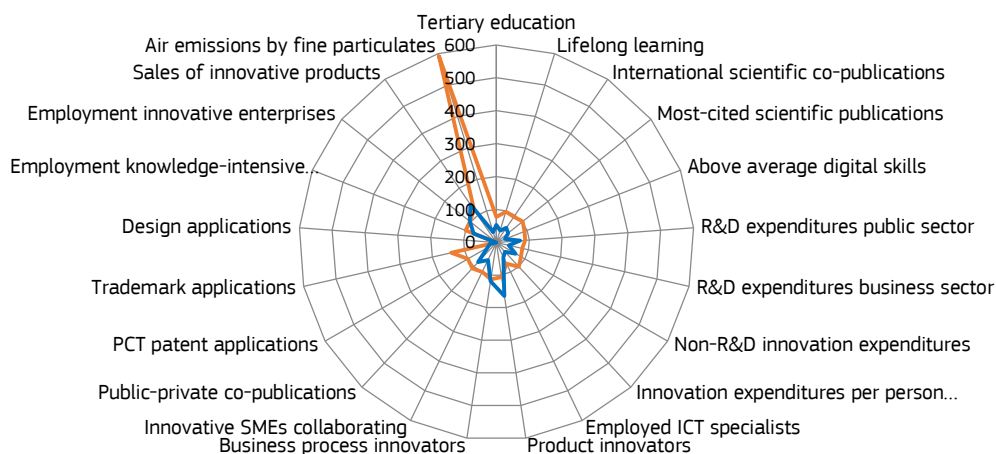
Relative to country
Relative to EU

Region Sumadije i Zapadne Srbije (RS21)

	Data	Normalised score	Relative to RS	Relative to EU
Tertiary education	28.3	0.239	66	46
Lifelong learning	3.1	0.080	55	21
International scientific co-publications	257	0.060	34	20
Most-cited scientific publications	563.3	0.268	110	49
Above average digital skills	12.0	0.139	95	30
R&D expenditures public sector	0.14	0.178	38	31
R&D expenditures business sector	0.04	0.110	34	16
Non-R&D innovation expenditures	±	0.465	146	115
Innovation expenditures per person employed	±	0.252	108	42
Employed ICT specialists	1.5	0.127	34	24
Product innovators	±	0.714	83	128
Business process innovators	±	0.616	90	95
Innovative SMEs collaborating	±	0.255	88	52
Public-private co-publications	18.9	0.145	49	37
PCT patent applications	0.30	0.187	100	30
Trademark applications	0.85	0.056	80	11
Design applications	0.02	0.037	78	6
Employment knowledge-intensive activities	8.5	0.204	48	36
Employment innovative enterprises	±	0.472	81	82
Sales of innovative products	±	0.641	116	133
Air emissions by fine particulates	23.9	0.000	0	0
Average normalised score	--	0.250	--	--
Country EIS-RIS correction factor	--	1.069	--	--
Regional Innovation Index (RII) 2023	--	0.267	--	--
Performance 2023 relative to EU in 2023	--	--	77.1	48.7
Performance 2023 relative to EU in 2016	--	--	--	52.9
Regional Innovation Index (RII) 2016	--	0.234	--	--
Performance 2016 relative to EU in 2016	--	--	86.6	46.3
Performance change over time	--	--	-9.5	6.6

± Scores are not shown as these would allow recalculating confidential regional CIS data.

Region Sumadije i Zapadne Srbije (RS21) is an Emerging Innovator. Innovation performance has increased over time (6.6%).

The first 21 rows and two data columns in the table on the left show the values and the normalised scores per indicator. The last two data columns show relative performance of the normalised scores compared to Serbia and the EU. The next 7 rows show the calculation of the Regional Innovation Index (RII), the RII relative to both Serbia (77.1) and the EU (48.7) in 2023, the RII in 2023 relative to the EU in 2016 (52.9), and the RII in 2016 relative to both Serbia (86.6) and the EU in 2016 (46.3). The last row shows performance change between 2016 and 2023 compared to Serbia (-9.5%) and to the EU (6.6%).

The radar graph shows relative strengths compared to Serbia (orange line) and the EU (blue line), showing relative strengths (e.g. Product innovators) and weaknesses (e.g. Design applications).

The table below shows data highlighting possible structural differences, e.g. Employment in Agriculture & Mining (above EU average) and GDP per capita (below EU average).

	RS21	RS	EU
Share of employment in:			
Agriculture & Mining (A-B)	26.6	15.8	4.4
Manufacturing (C)	20.4	19.2	16.4
Utilities & Construction (D-F)	7.3	8.2	8.3
Services (G-N)	41.1	51.4	63.7
Public administration (O-U)	4.6	5.3	7.2
Average number of employed persons per enterprise	n/a	n/a	5.1
GDP per capita (PPS)	9,800	14,400	32,400
GDP per capita growth (PPS)	5.5	6.0	2.5
Population density	72	91	106
Urbanisation	47.1	64.5	75.8
Population size (000s)	1,880	6,870	447,210

Relative to country
Relative to EU
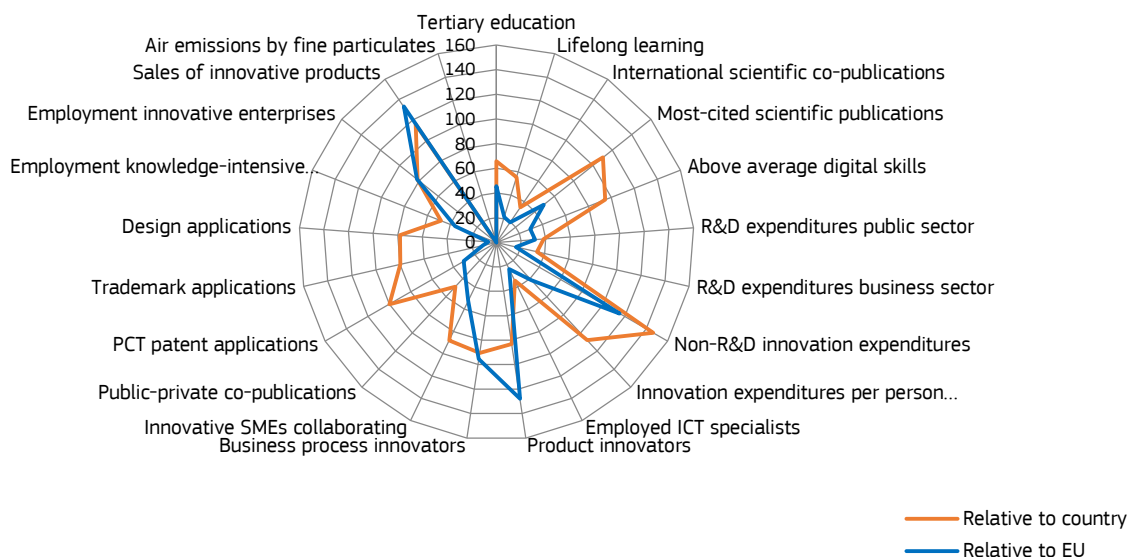
Region Juzne i Istocne Srbije (RS22)

	Data	Normalised score	Relative to RS	Relative to EU
Tertiary education	28.4	0.242	66	46
Lifelong learning	4.0	0.114	79	31
International scientific co-publications	495	0.118	67	38
Most-cited scientific publications	585.0	0.283	116	52
Above average digital skills	11.4	0.127	86	27
R&D expenditures public sector	0.24	0.267	57	47
R&D expenditures business sector	0.05	0.123	38	18
Non-R&D innovation expenditures	±	0.307	97	76
Innovation expenditures per person employed	±	0.242	104	40
Employed ICT specialists	1.1	0.080	22	15
Product innovators	±	0.911	106	163
Business process innovators	±	0.604	89	94
Innovative SMEs collaborating	±	0.155	54	32
Public-private co-publications	42.4	0.217	73	55
PCT patent applications	0.30	0.187	100	30
Trademark applications	1.07	0.070	101	14
Design applications	0.04	0.059	124	10
Employment knowledge-intensive activities	11.1	0.327	78	58
Employment innovative enterprises	±	0.608	105	106
Sales of innovative products	±	0.295	53	61
Air emissions by fine particulates	23.3	0.004	13	1
Average normalised score	--	0.254	--	--
Country EIS-RIS correction factor	--	1.069	--	--
Regional Innovation Index (RII) 2023	--	0.272	--	--
Performance 2023 relative to EU in 2023	--	--	78.5	49.6
Performance 2023 relative to EU in 2016	--	--	--	53.8
Regional Innovation Index (RII) 2016	--	0.213	--	--
Performance 2016 relative to EU in 2016	--	--	78.9	42.2
Performance change over time	--	--	-0.4	11.7

± Scores are not shown as these would allow recalculating confidential regional CIS data.

Region Juzne i Istocne Srbije (RS22) is an Emerging Innovator. Innovation performance has increased over time (11.7%). The first 21 rows and two data columns in the table on the left show the values and the normalised scores per indicator. The last two data columns show relative performance of the normalised scores compared to Serbia and the EU. The next 7 rows show the calculation of the Regional Innovation Index (RII), the RII relative to both Serbia (78.5) and the EU (49.6) in 2023, the RII in 2023 relative to the EU in 2016 (53.8), and the RII in 2016 relative to both Serbia (78.9) and the EU in 2016 (42.2). The last row shows performance change between 2016 and 2023 compared to Serbia (-0.4%) and to the EU (11.7%).
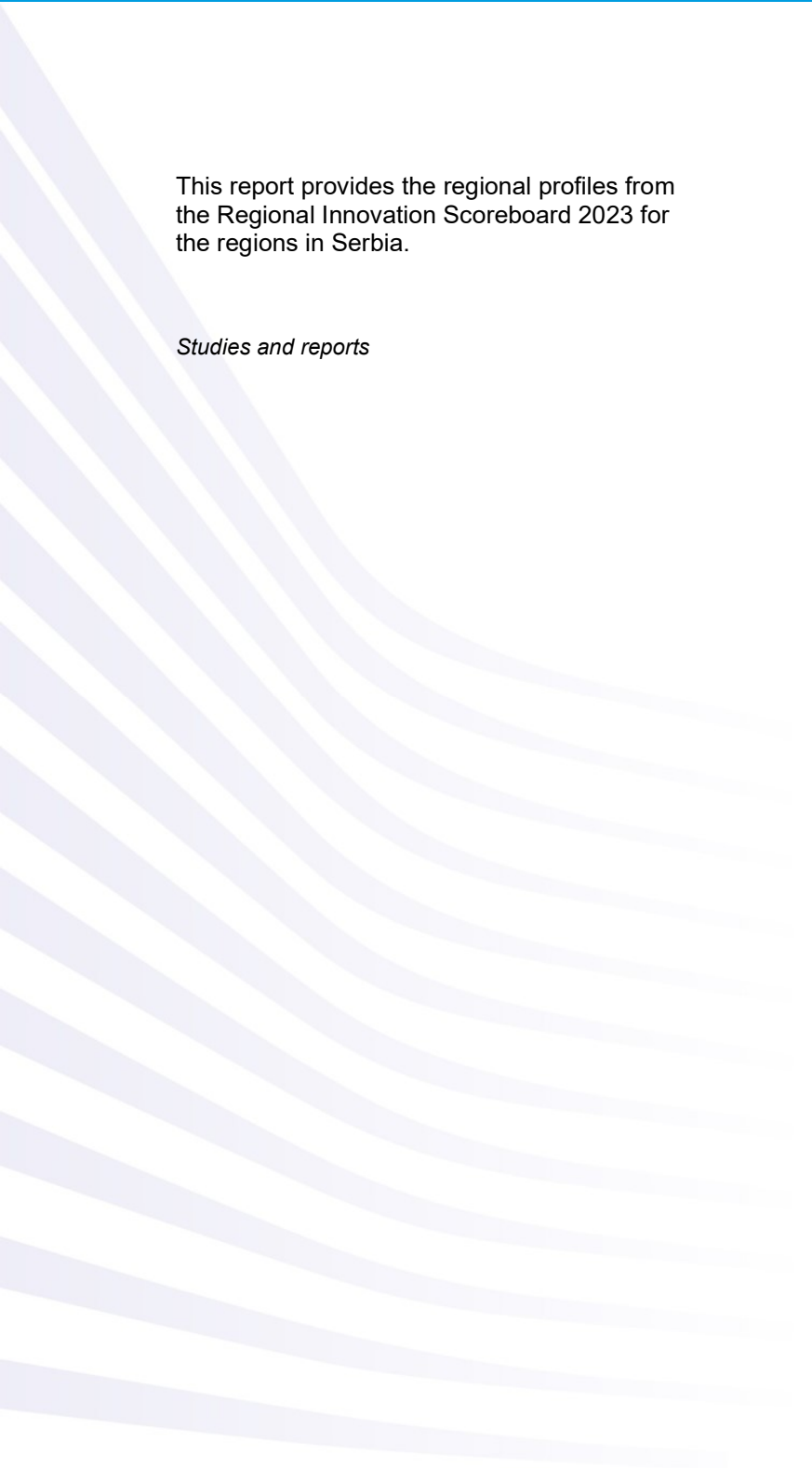
The radar graph shows relative strengths compared to Serbia (orange line) and the EU (blue line), showing relative strengths (e.g. Product innovators) and weaknesses (e.g. Design applications).

The table below shows data highlighting possible structural differences, e.g. GDP per capita growth (above EU average) and GDP per capita (below EU average).

	RS22	RS	EU
Share of employment in:			
Agriculture & Mining (A-B)	16.6	15.8	4.4
Manufacturing (C)	21.5	19.2	16.4
Utilities & Construction (D-F)	9.4	8.2	8.3
Services (G-N)	46.4	51.4	63.7
Public administration (O-U)	6.1	5.3	7.2
Average number of employed persons per enterprise	n/a	n/a	5.1
GDP per capita (PPS)	10,300	14,400	32,400
GDP per capita growth (PPS)	9.0	6.0	2.5
Population density	57	91	106
Urbanisation	52.9	64.5	75.8
Population size (000s)	1,460	6,870	447,210

Relative to country
Relative to EU
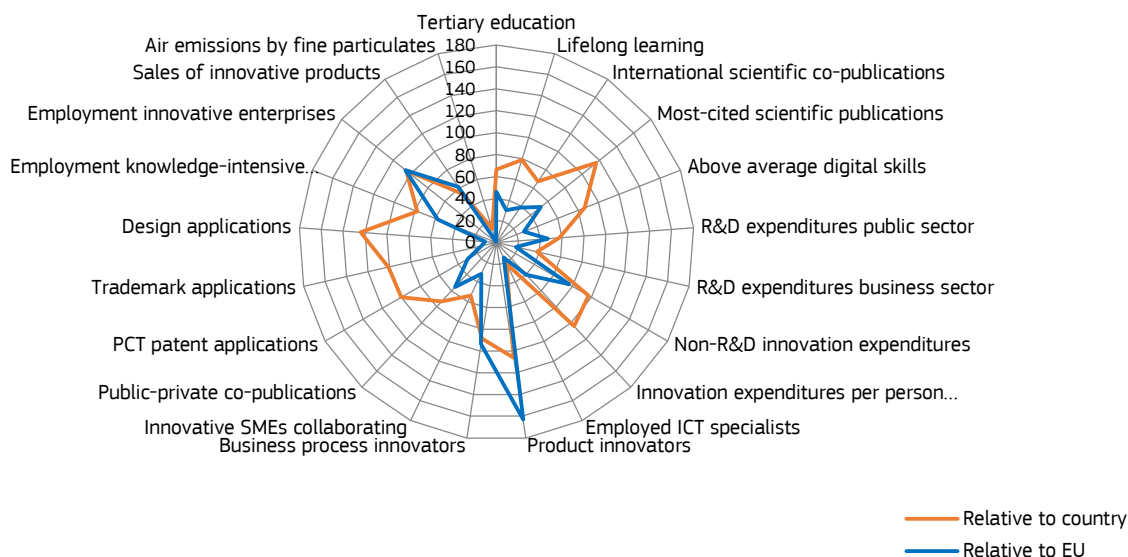
This report provides the regional profiles from the Regional Innovation Scoreboard 2023 for the regions in Serbia.

Studies and reports