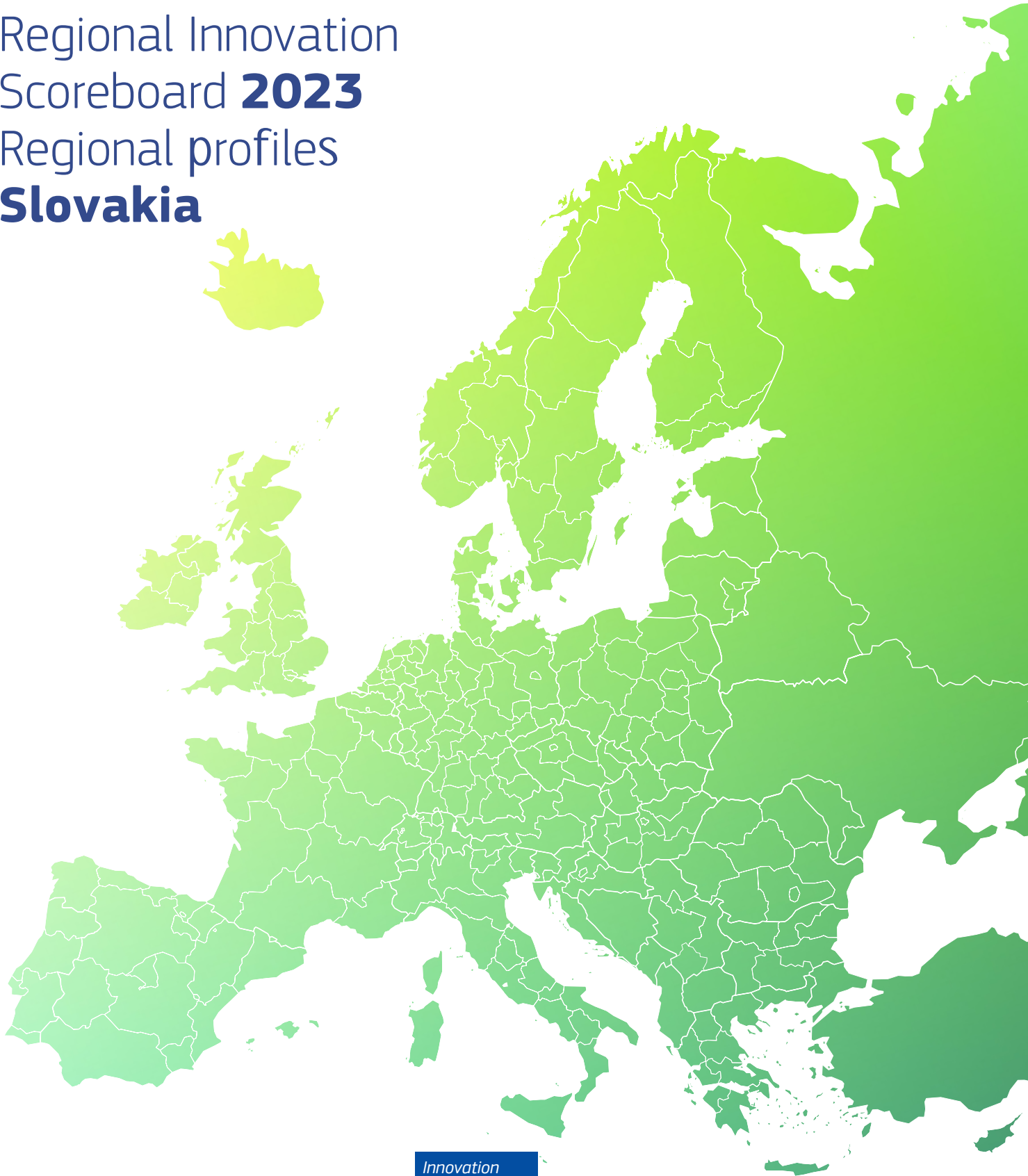




European
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Regional Innovation Scoreboard **2023** Regional profiles **Slovakia**



Innovation

Regional Innovation Scoreboard 2023 – Regional profiles Slovakia

European Commission

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Regional Innovation Scoreboard 2023

Regional profiles Slovakia

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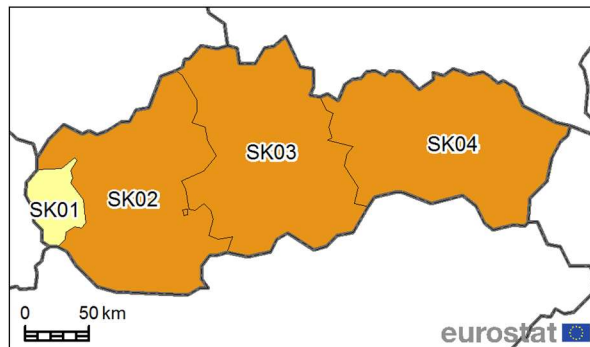
as part of the European Innovation Scoreboard project

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SLOVAKIA



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

NUTS	Region	RII	Rank	Group	Change
SK	Slovakia	65.6	--	Emerging Innovator	6.4
SK01	Bratislavský kraj	91.3	130	Moderate Innovator +	1.9
SK02	Západné Slovensko	56.0	211	Emerging Innovator +	8.0
SK03	Stredné Slovensko	61.7	193	Emerging Innovator +	8.8
SK04	Východné Slovensko	62.1	192	Emerging Innovator +	4.4

Slovakia is an Emerging Innovator and includes four regions.

Bratislavský kraj (SK01), the capital region, is a Moderate Innovator +, the other three regions are Emerging Innovators +.

Performance has increased for all regions. Only for *Stredné Slovensko* (SK03) performance increased at a higher rate than that of the EU (8.5), for the other regions performance increased at a lower rate.

Bratislavský kraj (SK01)

	Data	Normalised score	Relative to	
			SK	EU
Tertiary education	54.7	0.825	169	157
Lifelong learning	8.7	0.292	203	79
International scientific co-publications	2975	0.720	363	235
Most-cited scientific publications	376.0	0.144	75	26
Above average digital skills	22.3	0.374	110	80
R&D expenditures public sector	0.84	0.594	153	104
R&D expenditures business sector	0.66	0.446	116	66
Non-R&D innovation expenditures	±	0.292	75	72
Innovation expenditures per person employed	±	0.380	107	63
Employed ICT specialists	13.5	1.000	200	190
Product innovators	±	0.329	135	59
Business process innovators	±	0.445	135	69
Innovative SMEs collaborating	±	0.360	123	74
Public-private co-publications	529.2	0.767	217	195
PCT patent applications	0.58	0.262	106	42
Trademark applications	7.19	0.487	149	98
Design applications	1.16	0.313	81	54
Employment knowledge-intensive activities	23.5	0.915	123	161
Employment innovative enterprises	±	0.376	115	65
Sales of innovative products	±	0.556	141	116
Air emissions by fine particulates	13.0	0.511	117	85
Average normalised score	--	0.495	--	--
Country EIS-RIS correction factor	--	1.011	--	--
Regional Innovation Index (RII) 2023	--	0.500	--	--
Performance 2023 relative to EU in 2023	--	--	139.1	91.3
Performance 2023 relative to EU in 2016	--	--	--	99.0
Regional Innovation Index (RII) 2016	--	0.490	--	--
Performance 2016 relative to EU in 2016	--	--	149.8	97.1
Performance change over time	--	--	-10.7	1.9

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

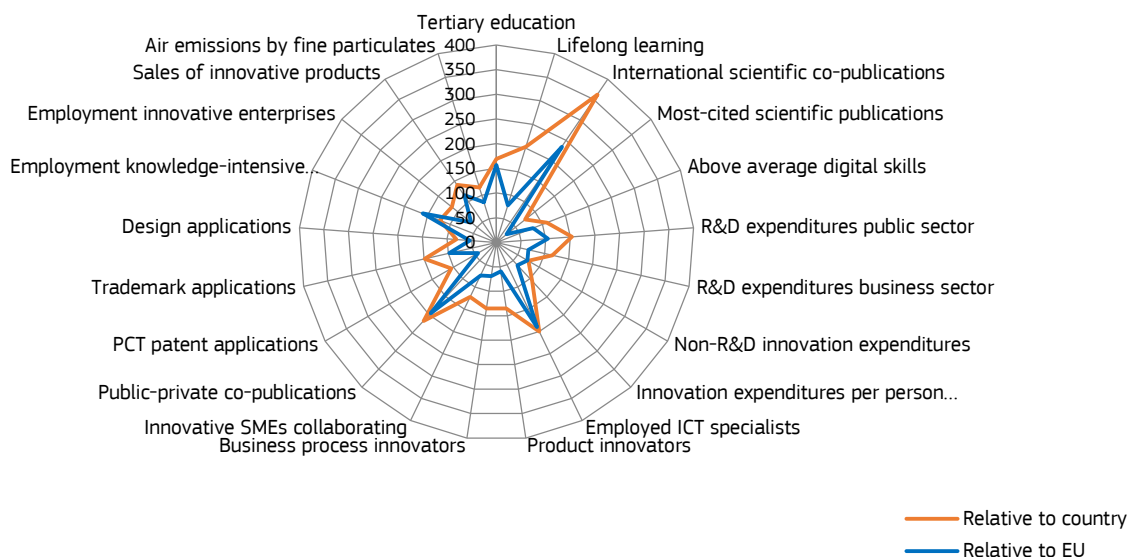
Bratislavský kraj (SK01) is a Moderate Innovator +. Innovation performance has increased over time (1.9%).

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 Slovakia and the EU. The next 7 rows show the calculation of the Regional Innovation Index (RII), the RII relative to both Slovakia (139.1) and the EU (91.3) in 2023, the RII in 2023 relative to the EU in 2016 (99), and the RII in 2016 relative to both Slovakia (149.8) and the EU in 2016 (97.1). The last row shows performance change between 2016 and 2023 compared to Slovakia (-10.7%) and to the EU (1.9%).

The radar graph shows relative strengths compared to Slovakia (orange line) and the EU (blue line), showing relative strengths (e.g. International scientific co-publications) and weaknesses (e.g. Most-cited scientific publications).

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

	SK01	SK	EU
Share of employment in:			
Agriculture & Mining (A-B)	0.5	2.9	4.4
Manufacturing (C)	11.3	24.9	16.4
Utilities & Construction (D-F)	7.8	11.3	8.3
Services (G-N)	69.6	52.4	63.7
Public administration (O-U)	10.8	8.5	7.2
Average number of employed persons per enterprise	4.2	3.2	5.1
GDP per capita (PPS)	48,200	22,500	32,400
GDP per capita growth (PPS)	-0.9	2.1	2.5
Population density	330	111	106
Urbanisation	87.4	62.4	75.8
Population size (000s)	680	5,460	447,210



Západné Slovensko (SK02)

	Data	Normalised score	Relative to	
			SK	EU
Tertiary education	35.4	0.397	81	76
Lifelong learning	3.2	0.083	58	22
International scientific co-publications	438	0.104	52	34
Most-cited scientific publications	443.3	0.189	98	35
Above average digital skills	20.7	0.338	99	72
R&D expenditures public sector	0.15	0.189	49	33
R&D expenditures business sector	0.50	0.388	101	58
Non-R&D innovation expenditures	±	0.459	117	114
Innovation expenditures per person employed	±	0.384	108	64
Employed ICT specialists	2.0	0.191	38	36
Product innovators	±	0.161	66	29
Business process innovators	±	0.236	72	37
Innovative SMEs collaborating	±	0.212	72	44
Public-private co-publications	55.2	0.248	70	63
PCT patent applications	0.68	0.282	114	46
Trademark applications	3.50	0.236	72	47
Design applications	1.81	0.391	101	67
Employment knowledge-intensive activities	23.6	0.919	124	162
Employment innovative enterprises	±	0.278	85	48
Sales of innovative products	±	0.228	58	47
Air emissions by fine particulates	14.1	0.458	105	76
Average normalised score	--	0.303	--	--
Country EIS-RIS correction factor	--	1.011	--	--
Regional Innovation Index (RII) 2023	--	0.307	--	--
Performance 2023 relative to EU in 2023	--	--	85.3	56.0
Performance 2023 relative to EU in 2016	--	--	--	60.7
Regional Innovation Index (RII) 2016	--	0.266	--	--
Performance 2016 relative to EU in 2016	--	--	81.4	52.7
Performance change over time	--	--	3.9	8.0

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

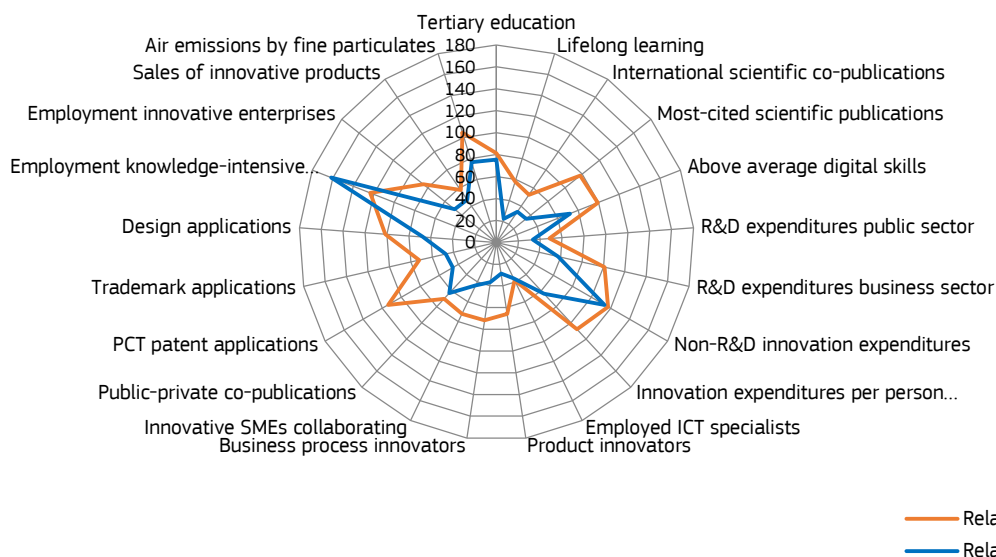
Západné Slovensko (SK02) is an Emerging Innovator +. Innovation performance has increased over time (8%).

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 Slovakia and the EU. The next 7 rows show the calculation of the Regional Innovation Index (RII), the RII relative to both Slovakia (85.3) and the EU (56) in 2023, the RII in 2023 relative to the EU in 2016 (60.7), and the RII in 2016 relative to both Slovakia (81.4) and the EU in 2016 (52.7). The last row shows performance change between 2016 and 2023 compared to Slovakia (3.9%) and to the EU (8%).

The radar graph shows relative strengths compared to Slovakia (orange line) and the EU (blue line), showing relative strengths (e.g. Employment knowledge-intensive activities) and weaknesses (e.g. Lifelong learning).

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

	SK02	SK	EU
Share of employment in:			
Agriculture & Mining (A-B)	3.2	2.9	4.4
Manufacturing (C)	32.8	24.9	16.4
Utilities & Construction (D-F)	10.4	11.3	8.3
Services (G-N)	46.6	52.4	63.7
Public administration (O-U)	6.9	8.5	7.2
Average number of employed persons per enterprise	3.1	3.2	5.1
GDP per capita (PPS)	20,400	22,500	32,400
GDP per capita growth (PPS)	2.2	2.1	2.5
Population density	121	111	106
Urbanisation	56.1	62.4	75.8
Population size (000s)	1,820	5,460	447,210



— Relative to country
— Relative to EU

Stredné Slovensko (SK03)

	Data	Normalised score	Relative to	
			SK	EU
Tertiary education	35.0	0.388	80	74
Lifelong learning	4.3	0.125	87	34
International scientific co-publications	636	0.152	77	50
Most-cited scientific publications	616.2	0.304	157	56
Above average digital skills	21.0	0.344	101	73
R&D expenditures public sector	0.39	0.370	95	65
R&D expenditures business sector	0.35	0.325	85	48
Non-R&D innovation expenditures	±	0.390	100	96
Innovation expenditures per person employed	±	0.309	87	51
Employed ICT specialists	2.6	0.278	56	53
Product innovators	±	0.298	123	53
Business process innovators	±	0.418	127	65
Innovative SMEs collaborating	±	0.413	141	85
Public-private co-publications	83.9	0.305	86	78
PCT patent applications	0.34	0.199	80	32
Trademark applications	4.18	0.282	86	57
Design applications	2.41	0.452	117	78
Employment knowledge-intensive activities	17.8	0.645	87	113
Employment innovative enterprises	±	0.362	111	63
Sales of innovative products	±	0.246	62	51
Air emissions by fine particulates	14.9	0.419	96	70
Average normalised score	--	0.334	--	--
Country EIS-RIS correction factor	--	1.011	--	--
Regional Innovation Index (RII) 2023	--	0.338	--	--
Performance 2023 relative to EU in 2023	--	--	94.1	61.7
Performance 2023 relative to EU in 2016	--	--	--	66.9
Regional Innovation Index (RII) 2016	--	0.293	--	--
Performance 2016 relative to EU in 2016	--	--	89.6	58.1
Performance change over time	--	--	4.4	8.8

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

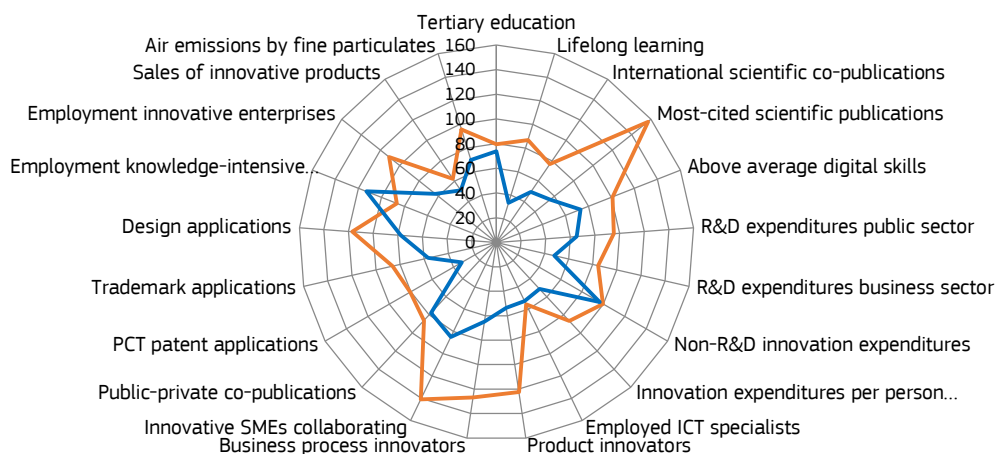
Stredné Slovensko (SK03) is an Emerging Innovator +. Innovation performance has increased over time (8.8%).

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 Slovakia and the EU. The next 7 rows show the calculation of the Regional Innovation Index (RII), the RII relative to both Slovakia (94.1) and the EU (61.7) in 2023, the RII in 2023 relative to the EU in 2016 (66.9), and the RII in 2016 relative to both Slovakia (89.6) and the EU in 2016 (58.1). The last row shows performance change between 2016 and 2023 compared to Slovakia (4.4%) and to the EU (8.8%).

The radar graph shows relative strengths compared to Slovakia (orange line) and the EU (blue line), showing relative strengths (e.g. Employment knowledge-intensive activities) and weaknesses (e.g. PCT patent applications).

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

	SK03	SK	EU
Share of employment in:			
Agriculture & Mining (A-B)	3.9	2.9	4.4
Manufacturing (C)	25.2	24.9	16.4
Utilities & Construction (D-F)	12.4	11.3	8.3
Services (G-N)	49.8	52.4	63.7
Public administration (O-U)	8.7	8.5	7.2
Average number of employed persons per enterprise	2.9	3.2	5.1
GDP per capita (PPS)	18,600	22,500	32,400
GDP per capita growth (PPS)	3.2	2.1	2.5
Population density	82	111	106
Urbanisation	61.5	62.4	75.8
Population size (000s)	1,330	5,460	447,210



— Relative to country
— Relative to EU

Východné Slovensko (SK04)

	Data	Normalised score	Relative to	
			SK	EU
Tertiary education	41.4	0.530	109	101
Lifelong learning	5.3	0.163	113	44
International scientific co-publications	723	0.173	87	56
Most-cited scientific publications	486.1	0.217	112	40
Above average digital skills	20.2	0.326	96	69
R&D expenditures public sector	0.27	0.290	75	51
R&D expenditures business sector	0.38	0.338	88	50
Non-R&D innovation expenditures	±	0.467	119	116
Innovation expenditures per person employed	±	0.317	89	53
Employed ICT specialists	4.1	0.473	94	90
Product innovators	±	0.240	98	43
Business process innovators	±	0.266	81	41
Innovative SMEs collaborating	±	0.229	78	47
Public-private co-publications	103.3	0.339	96	86
PCT patent applications	0.39	0.214	87	35
Trademark applications	4.26	0.288	88	58
Design applications	1.88	0.399	103	69
Employment knowledge-intensive activities	15.6	0.540	73	95
Employment innovative enterprises	±	0.309	95	54
Sales of innovative products	±	0.542	138	113
Air emissions by fine particulates	15.2	0.403	92	67
Average normalised score	--	0.336	--	--
Country EIS-RIS correction factor	--	1.011	--	--
Regional Innovation Index (RII) 2023	--	0.340	--	--
Performance 2023 relative to EU in 2023	--	--	94.6	62.1
Performance 2023 relative to EU in 2016	--	--	--	67.3
Regional Innovation Index (RII) 2016	--	0.318	--	--
Performance 2016 relative to EU in 2016	--	--	97.1	62.9
Performance change over time	--	--	-2.5	4.4

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

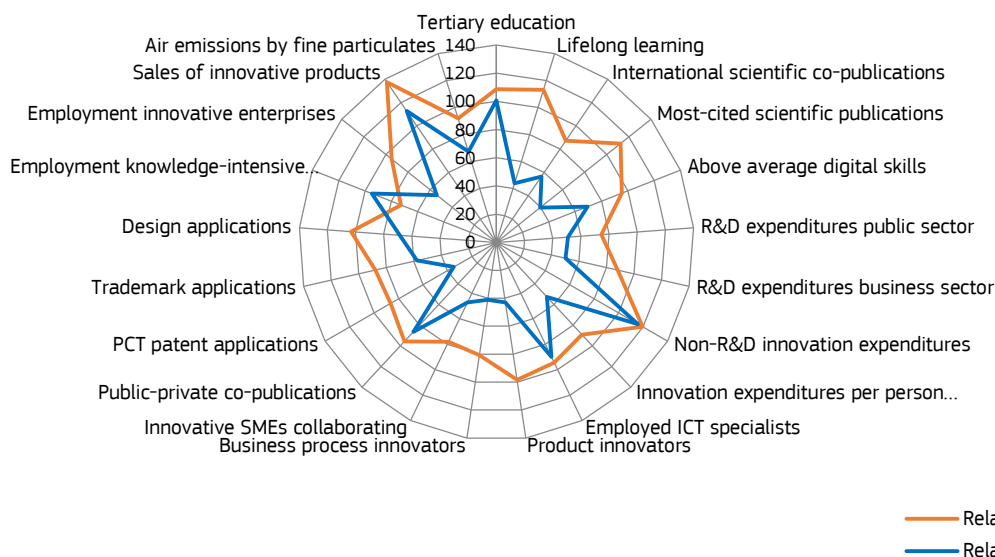
Východné Slovensko (SK04) is an Emerging Innovator +. Innovation performance has increased over time (4.4%).

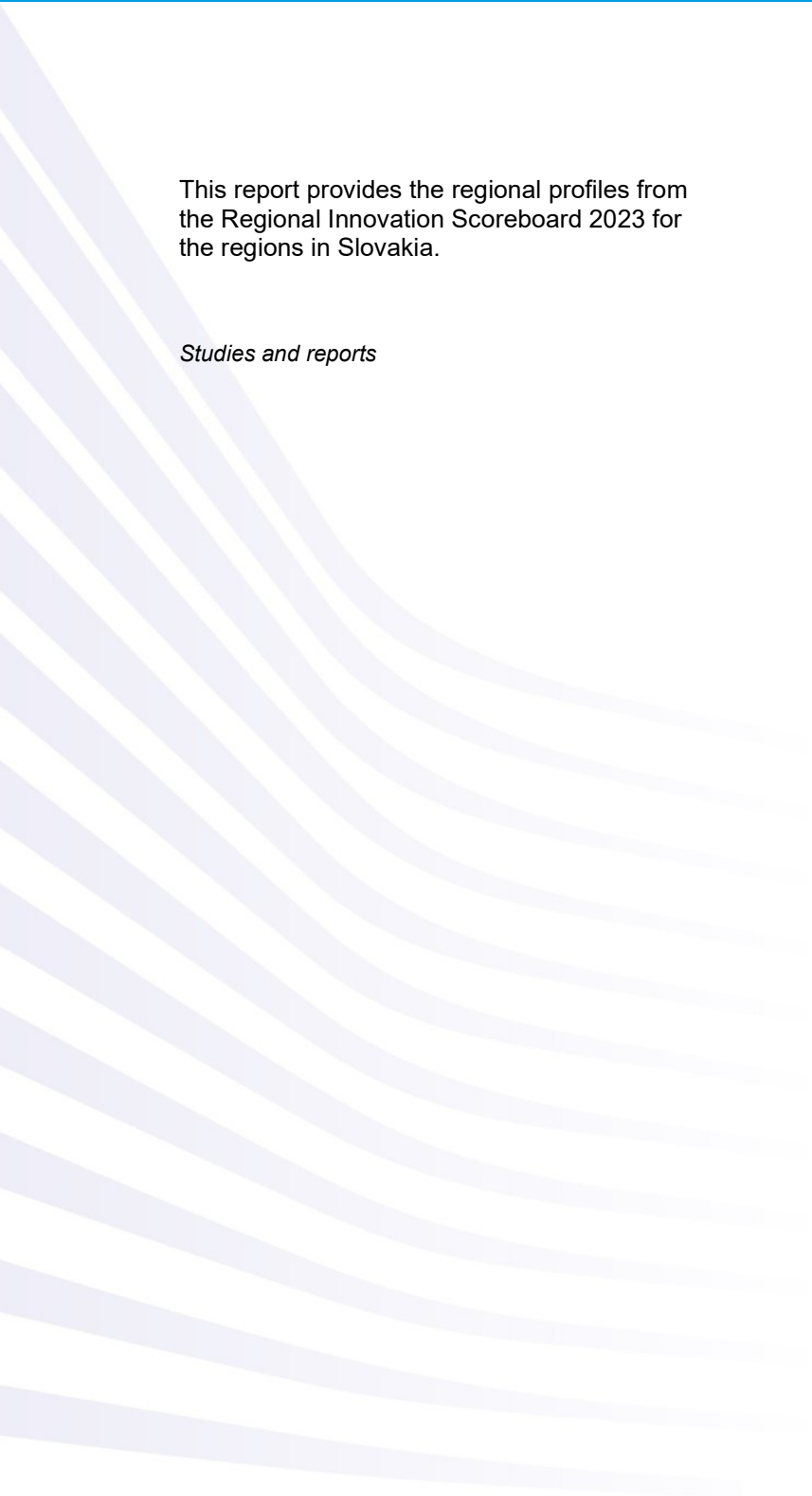

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The radar graph shows relative strengths compared to Slovakia (orange line) and the EU (blue line), showing relative strengths (e.g. Non-R&D innovation expenditures) and weaknesses (e.g. PCT patent applications).

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

	SK04	SK	EU
Share of employment in:			
Agriculture & Mining (A-B)	2.9	2.9	4.4
Manufacturing (C)	21.2	24.9	16.4
Utilities & Construction (D-F)	13.1	11.3	8.3
Services (G-N)	53.5	52.4	63.7
Public administration (O-U)	9.3	8.5	7.2
Average number of employed persons per enterprise	2.7	3.2	5.1
GDP per capita (PPS)	16,400	22,500	32,400
GDP per capita growth (PPS)	2.6	2.1	2.5
Population density	104	111	106
Urbanisation	59.3	62.4	75.8
Population size (000s)	1,630	5,460	447,210





This report provides the regional profiles from the Regional Innovation Scoreboard 2023 for the regions in Slovakia.

Studies and reports