Global Innovation Index 2025

Slovakia ranking in the Global Innovation Index 2025

Slovakia ranks 47th among the 139 economies featured in the GII 2025.

The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.

Slovakia ranks 41st among the 54 High-income group economies.

Slovakia ranks 29th among the 39 economies in Europe.

Slovakia GII Ranking (2020-2025)

The table shows the rankings of Slovakia over the past six years. Data availability and changes to the GII model framework influence year-on-year comparisons of the GII rankings. The statistical confidence interval for the ranking of Slovakia in the GII 2025 is between ranks 43 and 47.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	39th	43rd	34th
2021	37th	42nd	35th
2022	46th	54th	45th
2023	45th	51st	45th
2024	46th	52nd	44th
2025	47th	51st	45th

Slovakia performs better in innovation outputs than innovation inputs in 2025.

This year Slovakia ranks 51st in innovation inputs. This position is higher than last year.

Slovakia ranks 45th in innovation outputs. This position is lower than last year.

Slovakia has no clusters in the world's top innovation clusters of the Global Innovation Index.

Global Innovation Index 2025

> Global Innovation Tracker

The Global Innovation Tracker 2025 shows what is the current state of innovation in Slovakia, how rapidly is technology being embraced and what are the resulting societal impacts.

For Slovakia, 7 indicators have improved in the short-term and 4 indicators have worsened.

Science and innovation investment

	Scientific publications	R&D investments	Venture capital deal numbers	International patent filings
Short term	▼ -0.9 % 2023 - 2024	▲ 8.1 % 2022 - 2023	▲ 7.4 % 2023 - 2024	▼ -19 % 2023 - 2024
Long term (annual growth)	▲ 3.2 % 2014 - 2024	▲ 4.9 % 2013 - 2023	▼ -1.7 % 2020 - 2024	▼ -3.2 % 2014 - 2024

Technology adoption

	Safe sanitation	Connectivity		Robots	Electric vehicles
		Fixed broadband	5G		
Short term	▲ 0.1% 2023 - 2024	▼ -1.6% 2022 - 2023	▲ 13.8% 2022 - 2023	▲ 18.1% 2022 - 2023	n/a
Long term (annual growth)	▲ 0.1% 2014 - 2024	▲ 5.1% 2013 - 2023	n/a	▲ 12.4% 2013 - 2023	n/a
Penetration	83.4 per 100 inhabitants in 2024	33.2 per 100 inhabitants in 2023	62.6 per 100 inhabitants in 2023	n/a	n/a

Socioeconomic impact

	Labor productivity	Life expectancy	Temperature change
Short term	▲ 2 % 2023 - 2024	▲ 1.7 % 2022 - 2023	+ 3.3 °C 2024
Long term (annual growth)	▲ 2.2 % 2014 - 2024	▲ 0.2 % 2013 - 2023	+ 2.4 °C 2014
Level	96,435.2 USD in 2024	78.3 years in 2023	n/a

Notes: Not all indicators of the Global Innovation Tracker are used to calculate the Global Innovation Index. Long-term annual growth refers to the compound annual growth rate (CAGR) over the indicated period. For each variable, a one-year growth rate is set for the short run, and ten-year CAGR is set for the long run; time windows might differ when gaps exist in data availability. The end period corresponds to the most recent available observation, which may differ among countries. Temperature change is an exception: it indicates the change in degrees Celsius with respect to the average temperature in the countries. from 1951–1980. Figures are rounded.

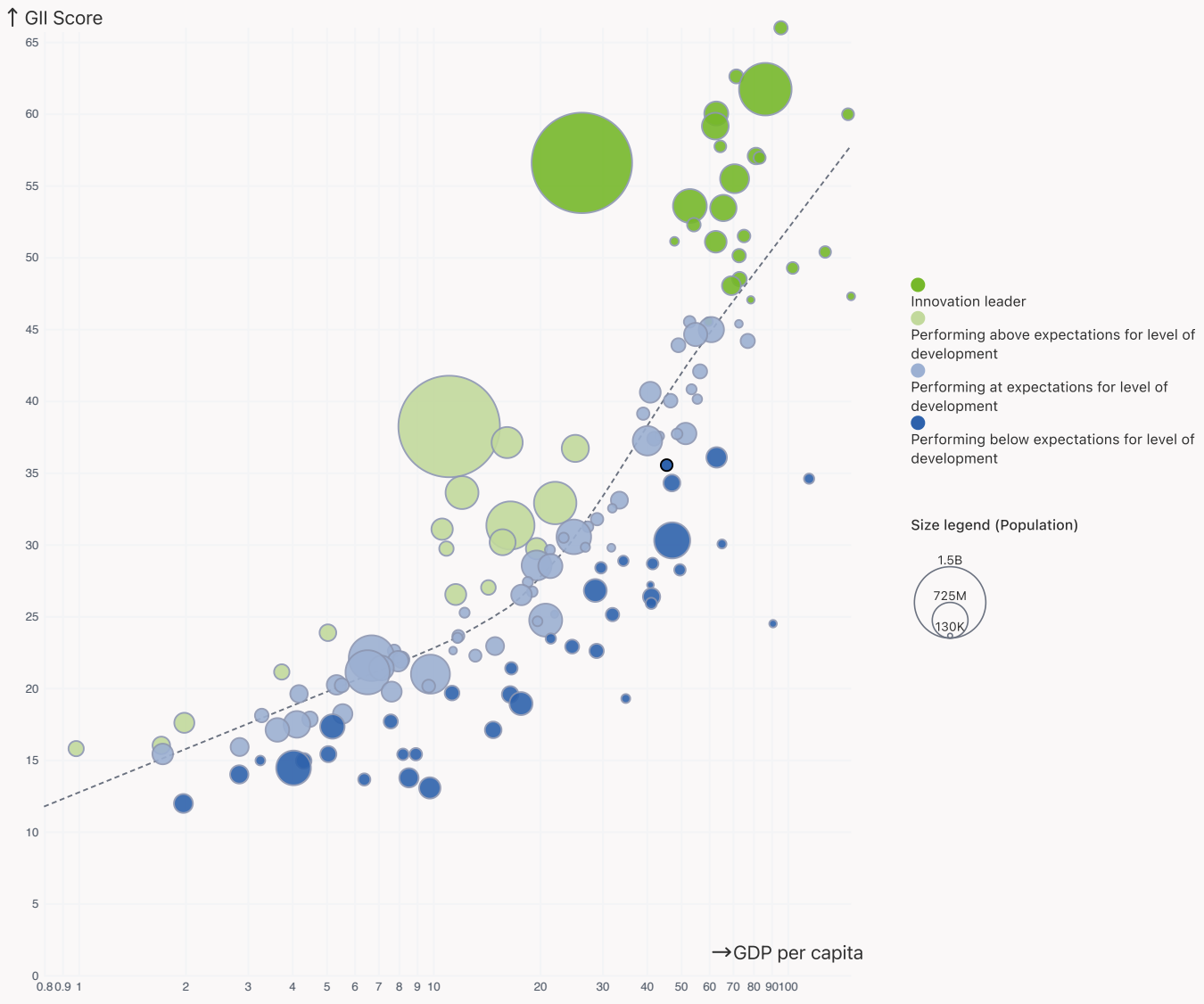
Global Innovation Index 2025

Expected vs. Observed Innovation Performance

The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected and those below are performing below expectations.

Relative to GDP Slovakia performs below expectations for its level of development.

> Innovation overperformers relative to their economic development



Global Innovation Index 2025

Effectively translating innovation investments into innovation outputs

The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.

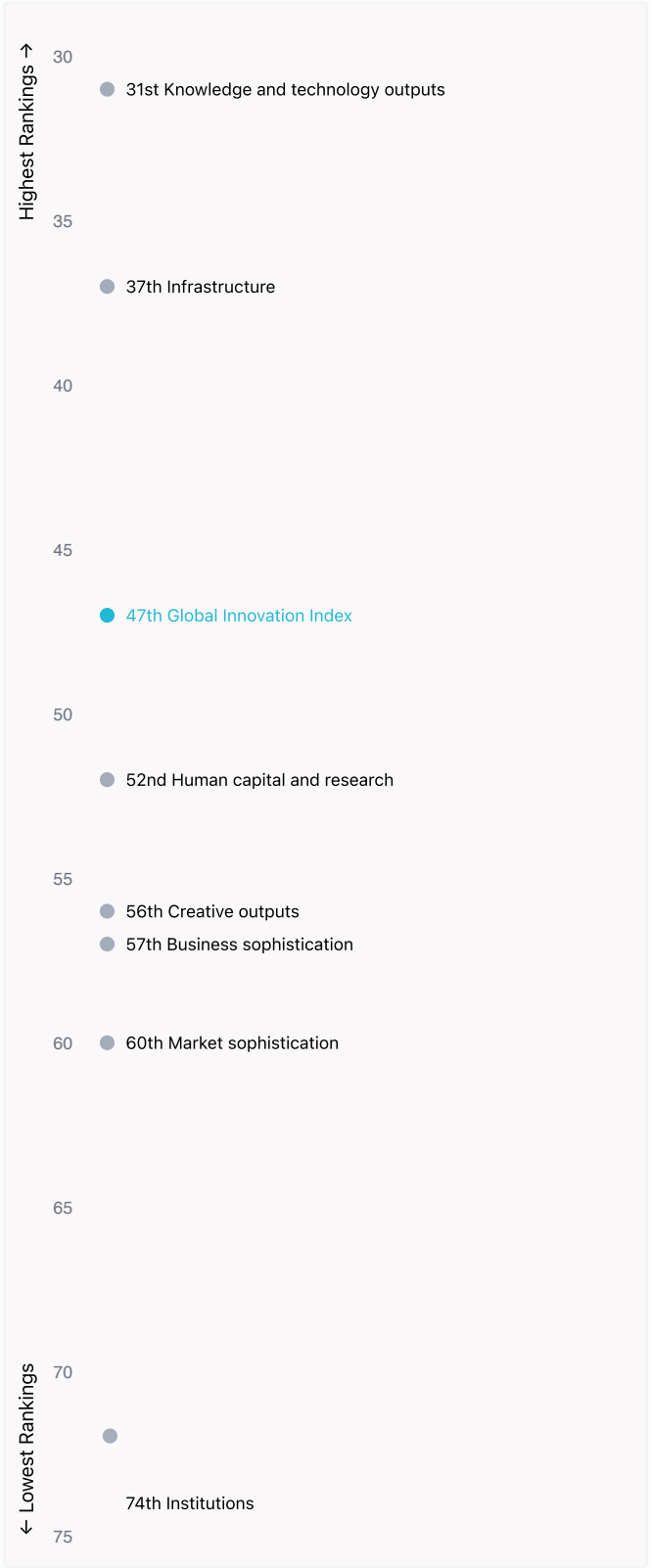
Slovakia produces more innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

Global Innovation Index 2025

Overview of Slovakia's rankings in the seven areas of the GII in 2025

The chart shows the ranking for each of the seven areas that the GII comprises. The strongest areas for Slovakia are those that rank above the GII (shown in blue) and the weakest are those that rank below.



Highest Rankings

Slovakia ranks highest in Knowledge and technology outputs (31st) and Infrastructure (37th).

Lowest Rankings

Slovakia ranks lowest in Institutions (74th), Market sophistication (60th) and Business sophistication (57th).

The full WIPO Intellectual Property Statistics profile for Slovakia can be found on https://www.wipo.int/edocs/statistics-country-profile/en/sk.pdf

Global Innovation Index 2025

Benchmark of Slovakia against other economy groupings for each of the seven areas of the GII Index

High-income economies

Slovakia performs below the High-income group average in all pillars.

Europe

Slovakia performs below the regional average in all pillars.

Institutions

- Top 10 | Score: 78.63
- High-income | Score: 65.99
- Europe | Score: 59.42
- Slovakia | Score: 47.90

Human capital and research

- Top 10 | Score: 59.30
- High-income | Score: 45.45
- Europe | Score: 44.67
- Slovakia | Score: 35.51

Infrastructure

- Top 10 | Score: 61.36
- High-income | Score: 54.18
- Europe | Score: 54.13
- Slovakia | Score: 52.80

Market sophistication

- Top 10 | Score: 61.82
- High-income | Score: 47.12
- Europe | Score: 44.89
- Slovakia | Score: 38.65

Business sophistication

- Top 10 | Score: 59.10
- High-income | Score: 42.22
- Europe | Score: 40.79
- Slovakia | Score: 31.33

Knowledge and technology outputs

- Top 10 | Score: 54.93
- Europe | Score: 34.99
- High-income | Score: 33.94
- Slovakia | Score: 32.66

Creative outputs

- Top 10 | Score: 55.98
- High-income | Score: 38.68
- Europe | Score: 38.66
- Slovakia | Score: 26.89

Global Innovation Index 2025

Innovation strengths and weaknesses in Slovakia

The table below gives an overview of the indicator strengths and weaknesses of Slovakia in the GII 2025.

Slovakia's best-ranked innovation strengths are **ISO 14001 environment/bn PPP$ GDP** (rank 7), **High-tech manufacturing, %** (rank 8) and **Creative goods exports, % total trade** (rank 11).

Strengths

Rank	Code	Indicator name
7	3.3.3	ISO 14001 environment/bn PPP$ GDP
8	6.2.4	High-tech manufacturing, %
11	7.2.4	Creative goods exports, % total trade
13	6.3.5	ISO 9001 quality/bn PPP$ GDP
13	6.1.3	Utility models by origin/bn PPP$ GDP
15	2.2.3	Tertiary inbound mobility, %
16	6.3.2	Production and export complexity
20	5.3.2	High-tech imports, % total trade
25	6.3.3	High-tech exports, % total trade
29	3.3.2	Low-carbon energy use, %

Weaknesses

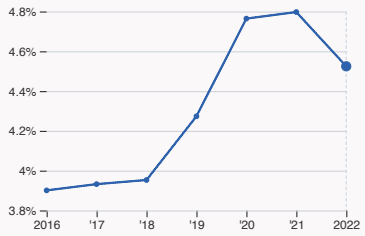
Rank	Code	Indicator name
118	5.1.3	Youth demographic dividend, %
115	1.3.1	Policy stability for doing business†
98	3.2.3	Gross capital formation, % GDP
92	5.2.2	University–industry R&D collaboration†
87	1.3.2	Entrepreneurship policies and culture†
87	5.3.4	FDI net inflows, % GDP
81	7.1.3	Global brand value, top 5,000, % GDP
70	5.2.3	University industry & international engagement, top 5*
53	6.2.2	Unicorn valuation, % GDP
44	2.3.3	Global corporate R&D investors, top 3, mn USD

Global Innovation Index 2025

Slovakia's innovation system

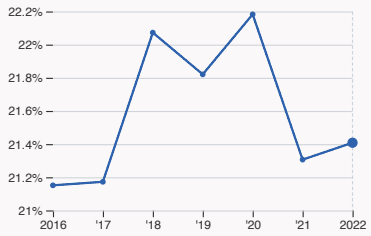
As far as practicable, the plots below present unscaled indicator data.

Innovation inputs in Slovakia



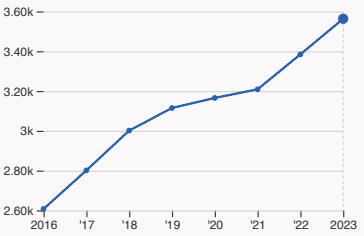
2.1.1 Expenditure on education

was equal to 4.52 % GDP in 2022, down by 0.27 percentage points from the year prior – and equivalent to an indicator rank of 55.



2.2.2 Graduates in science and engineering

was equal to 21.41 % of total graduates in 2022, up by 0.1 percentage points from the year prior – and equivalent to an indicator rank of 72.



2.3.1 Researchers

was equal to 3563.3 FTE per million population in 2023, up by 5.28% from the year prior – and equivalent to an indicator rank of 31.

2.3.2 Gross expenditure on R&D

was equal to 1.04 % GDP in 2023, up by 0.07 percentage points from the year prior – and equivalent to an indicator rank of 39.

2.3.4 QS university ranking

was equal to an average score of 10.77 for the top three universities in 2024, up by 17.07% from the year prior – and equivalent to an indicator rank of 67.

4.3.2 Domestic industry diversification

was equal to an index score of 0.172 in 2022, down by 9.02% from the year prior – and equivalent to an indicator rank of 69.

5.1.1 Knowledge-intensive employment

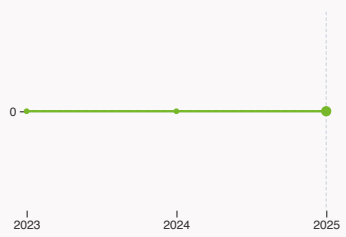
was equal to 40.21 % of total workforce in 2024, up by 1.76 percentage points from the year prior – and equivalent to an indicator rank of 34.

Global Innovation Index 2025

Innovation outputs in Slovakia

6.1.1 Patents by origin

was equal to 288 patents in 2023, up by 23.61% from the year prior – and equivalent to an indicator rank of 45.

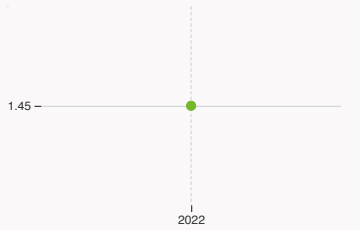


6.2.2 Unicorn valuation

The country does not have unicorns in 2025.

6.2.4 High-tech manufacturing

was equal to 56.52 high-tech manufacturing output in billion USD in 2022, up by 1.07% from the year prior – and equivalent to an indicator rank of 8.

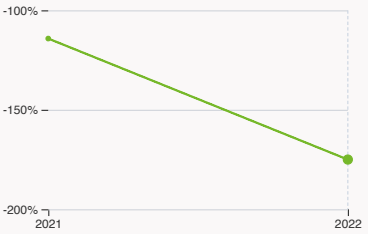


6.3.2 Production and export complexity

was equal to a score of 1.45 in 2022 – and equivalent to an indicator rank of 16.

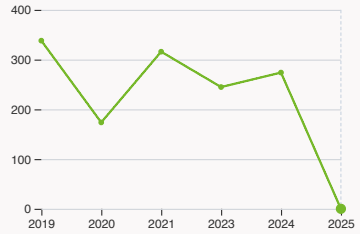
6.3.3 High-tech exports

was equal to 10.46 billion USD in 2023, up by 25.12% from the year prior – and equivalent to an indicator rank of 25.



7.1.1 Intangible asset intensity, top 15

was equal to -175.02 % for the top 15 companies in 2022, down by 60.82 percentage points from the year prior – and equivalent to an indicator rank of NA.



7.1.3 Global brand value, top 5,000

The country does not have any brands that make the top 5,000 ranking in 2025.

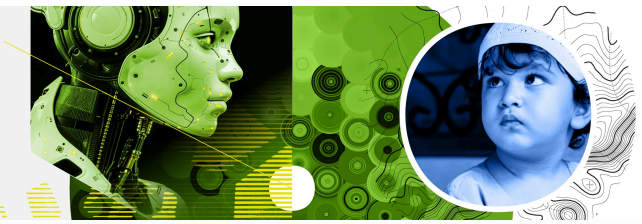
7.2.2 National feature films

was equal to 27 films in 2023, down by 3.57% from the year prior – and equivalent to an indicator rank of 25.

7.3.3 Mobile app creation

was equal to 76.65 million global downloads of mobile apps in 2024, down by 28.2% from the year prior – and equivalent to an indicator rank of 47.

Global Innovation Index 2025



Slovakia's innovation top performers

Data not available for 2.3.3 Global corporate R&D investors, 6.2.2 Top Unicorn Companies, 7.1.1 Top 15 intangible-asset intensive companies and 7.1.3 Global brand value, top 5,000.

Disclaimer: This section contains only the top performers per country. For the complete list, please visit the GII Innovation Ecosystems and Data Explorer website.

2.3.4 QS university ranking of Slovakia's top universities

Rank	University	Score
661-670	COMENIUS UNIVERSITY IN BRATISLAVA	18.90
851-900	PAVOL JOZEF SAFARIK UNIVERSITY IN KOSICE	13.40
1001-1200	UNIVERSITY OF ZILINA	9.90

Source: QS Quacquarelli Symonds Ltd (https://www.topuniversities.com/university-rankings/world-university-rankings/2024).
Note: QS Quacquarelli Symonds Ltd annually assesses over 1,200 universities across the globe and scores them between [0,100].
Ranks can represent a single value 'x', a tie 'x=' or a range 'x-y'.

5.2.3 University industry and international engagement, top 5 universities

Rank	University	Score
1	PAVOL JOZEF SAFARIK UNIVERSITY IN KOSICE	43.55
2	SLOVAK UNIVERSITY OF TECHNOLOGY IN BRATISLAVA	42.65
3	COMENIUS UNIVERSITY IN BRATISLAVA	40.50

Source: Times Higher Education (THE), World University Rankings 2025.
Note: Rank corresponds to within economy ranks. The score is calculated as the average of the International Outlook score (encompassing international staff, students, and co-authorship) and the industry score (reflecting industry income and patent citations). The 2025 ranking corresponds to data from the academic year that ended in 2022.

Slovakia

GII 2025 rank **47**

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
45	51	High	Europe	5.5	247.5	45,632.2

	Score / Value	Rank	
Institutions	**47.9**	**74**	◇
1.1 Institutional environment	**62**	**48**	
1.1.1 Operational stability for businesses*	75.3	35	
1.1.2 Government effectiveness*	48.7	60	◇
1.2 Regulatory environment	**63.8**	**42**	
1.2.1 Regulatory quality*	60.6	45	
1.2.2 Rule of law*	66.9	40	
1.3 Business environment	**17.9**	**128**	◇
1.3.1 Policy stability for doing business†	24.9	115	○ ◇
1.3.2 Entrepreneurship policies and culture†	10.9	87	○ ◇
Human capital and research	**35.5**	**52**	
2.1 Education	**55.8**	**54**	
2.1.1 Expenditure on education, % GDP	4.5	55	
2.1.2 Government funding/pupil, secondary, % GDP/cap	23.6	27	
2.1.3 School life expectancy, years	15.2	49	
2.1.4 PISA scales in reading, maths and science	457.7	40	
2.1.5 Pupil–teacher ratio, secondary	12.6	59	
2.2 Tertiary education	**35.3**	**47**	
2.2.1 Tertiary enrolment, % gross	53.4	69	
2.2.2 Graduates in science and engineering, %	21.4	72	
2.2.3 Tertiary inbound mobility, %	15.2	15	●
2.3 Research and development (R&D)	**15.4**	**52**	
2.3.1 Researchers, FTE/mn pop.	3,563.3	31	
2.3.2 Gross expenditure on R&D, % GDP	1	39	
2.3.3 Global corporate R&D investors, top 3, mn USD	0	44	○ ◇
2.3.4 QS university ranking, top 3*	11	67	
Infrastructure	**52.8**	**37**	
3.1 Information and communication technologies (ICTs)	**79.7**	**59**	
3.1.1 ICT access*	94.3	46	
3.1.2 ICT use*	79.8	59	
3.1.3 Government's online service*	65.1	73	
3.2 General infrastructure	**35**	**60**	
3.2.1 Electricity output, GWh/mn pop.	5,303.8	42	
3.2.2 Logistics performance*	54.5	42	
3.2.3 Gross capital formation, % GDP	21	98	○
3.3 Ecological sustainability	**43.7**	**10**	◆
3.3.1 GDP/unit of energy use	10.9	67	
3.3.2 Low-carbon energy use, %	34.5	29	●
3.3.3 ISO 14001 environment/bn PPP$ GDP	7.9	7	● ◆
Market sophistication	**38.7**	**60**	
4.1 Credit	**35.8**	**44**	
4.1.1 Finance for startups and scaleups†	49.3	48	
4.1.2 Domestic credit to private sector, % GDP	61.8	50	
4.1.3 Loans from microfinance institutions, % GDP	n/a	n/a	
4.2 Investment	**6.8**	**61**	◇
4.2.1 Market capitalization, % GDP	n/a	n/a	
4.2.2 Venture capital (VC) received, deal count/bn PPP$ GDP	0.1	47	
4.2.3 Late-stage VC deal count, % global VC	0.03	53	
4.2.4 VC investors, deal count/bn PPP$ GDP	0.2	55	
4.2.5 VC investor co-participation/bn PPP$ GDP	0.1	42	
4.3 Trade, diversification and market scale	**73.3**	**58**	
4.3.1 Applied tariff rate, weighted avg., %	1.3	24	
4.3.2 Domestic industry diversification	78.2	69	
4.3.3 Domestic market scale, bn PPP$	247.5	73	

	Score / Value	Rank	
Business sophistication	**31.3**	**57**	
5.1 Knowledge workers	**41.2**	**51**	
5.1.1 Knowledge-intensive employment, %	40.2	34	
5.1.2 Females employed w/advanced degrees, %	18.4	42	
5.1.3 Youth demographic dividend, %	25.5	118	○
5.1.4 GERD performed by business, % GDP	0.6	37	
5.1.5 GERD financed by business, %	47.1	33	
5.2 Innovation linkages	**22.3**	**80**	◇
5.2.1 Public research–industry co-publications, %	2.1	44	
5.2.2 University–industry R&D collaboration†	27.7	92	○ ◇
5.2.3 University industry & international engagement, top 5*	18	70	○ ◇
5.2.4 State of cluster development†	41.1	85	◇
5.2.5 Patent families/bn PPP$ GDP	0.2	43	
5.3 Knowledge absorption	**30.4**	**54**	
5.3.1 Intellectual property payments, % total trade	0.7	58	
5.3.2 High-tech imports, % total trade	12.3	20	●
5.3.3 ICT services imports, % total trade	1.1	87	
5.3.4 FDI net inflows, % GDP	2.1	87	○
5.3.5 Research talent, % in businesses	33.3	40	
Knowledge and technology outputs	**32.7**	**31**	
6.1 Knowledge creation	**24.2**	**43**	
6.1.1 Patents by origin/bn PPP$ GDP	1.2	45	
6.1.2 PCT patents by inventor origin/bn PPP$ GDP	0.3	37	
6.1.3 Utility models by origin/bn PPP$ GDP	1.3	13	● ◆
6.1.4 Scientific and technical articles/bn PPP$ GDP	17.6	38	
6.1.5 Citable documents H-index	16.4	52	
6.2 Knowledge impact	**37.8**	**27**	
6.2.1 Labor productivity growth, %	1.5	46	
6.2.2 Unicorn valuation, % GDP	0	53	○ ◇
6.2.3 Software spending, % GDP	0.3	32	
6.2.4 High-tech manufacturing, %	55.2	8	● ◆
6.3 Knowledge diffusion	**36**	**32**	
6.3.1 Intellectual property receipts, % total trade	0.05	81	
6.3.2 Production and export complexity	81.3	16	●
6.3.3 High-tech exports, % total trade	8.7	25	●
6.3.4 ICT services exports, % total trade	1.8	65	
6.3.5 ISO 9001 quality/bn PPP$ GDP	16	13	● ◆
Creative outputs	**26.9**	**56**	
7.1 Intangible assets	**17.7**	**82**	◇
7.1.1 Intangible asset intensity, top 15, %	n/a	n/a	
7.1.2 Trademarks by origin/bn PPP$ GDP	47	35	
7.1.3 Global brand value, top 5,000, % GDP	0	81	○ ◇
7.1.4 Industrial designs by origin/bn PPP$ GDP	1.6	43	
7.2 Creative goods and services	**34.6**	**20**	
7.2.1 Cultural and creative services exports, % total trade	0.4	71	
7.2.2 National feature films/mn pop. 15–69	6.8	25	
7.2.3 Entertainment and media market/th pop. 15–69	n/a	n/a	
7.2.4 Creative goods exports, % total trade	4.8	11	● ◆
7.3 Online creativity	**37.7**	**38**	
7.3.1 Top-level domains (TLDs)/th pop. 15–69	22.4	33	
7.3.2 GitHub commits/mn pop. 15–69	21	43	
7.3.3 Mobile app creation/bn PPP$ GDP	69.8	47	

NOTES: ● indicates a strength ○ a weakness ◆ an income group strength ◇ an income group weakness * an index † a survey question 🕓 that the economy's data is outdated. Square brackets [ ] indicate the the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level, n/a represents missing values, a dash - indicates an indicator which is not relevant to this economy and thus not considered for DMC thresholds.

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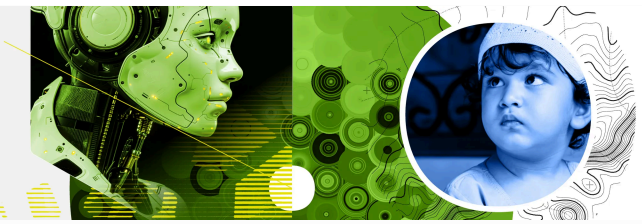

Data Availability

The following tables list indicators that are either missing or outdated for Slovakia.

Slovakia has missing data for four indicators and outdated data for one indicator.

Missing data for Slovakia

Code	Indicator name	Economy year	Model year*	Source
4.1.3	Loans from microfinance institutions, % GDP	n/a	2023	International Monetary Fund, Financial Access Survey (FAS)
4.2.1	Market capitalization, % GDP	n/a	2022	World Federation of Exchanges; World Bank
7.1.1	Intangible asset intensity, top 15, %	n/a	2024	Brand Finance
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2024	PwC, GEMO; United Nations, World Population Prospects; International Monetary Fund

*Model year corresponds to the most frequent data year (the year that appears most often across all economies in the GII).

Outdated data for Slovakia

Code	Indicator name	Economy year	Model year*	Source
2.1.1	Expenditure on education, % GDP	2022	2023	UNESCO Institute for Statistics

*Model year corresponds to the most frequent data year (the year that appears most often across all economies in the GII).

Global Innovation Index 2025

About the Global Innovation Index

- The Global Innovation Index (GII) is published by the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations.
- Recognizing that innovation is a key driver of economic development, the GII aims to provide an innovation ranking and rich analysis referencing around 140 economies. Over the last decade, the GII has established itself as both a leading reference on innovation and a "tool for action" for economies that incorporate the GII into their innovation agendas.

The Index is a ranking of the innovation capabilities and results of world economies. It measures innovation based on criteria that include institutions, human capital and research infrastructure, credit, investment, linkages, the creation, absorption and diffusion of knowledge and creative outputs.

The GII has two sub-indices: the Innovation Input Sub-Index and the Innovation Output Sub-Index, and seven pillars, each consisting of three sub-pillars.