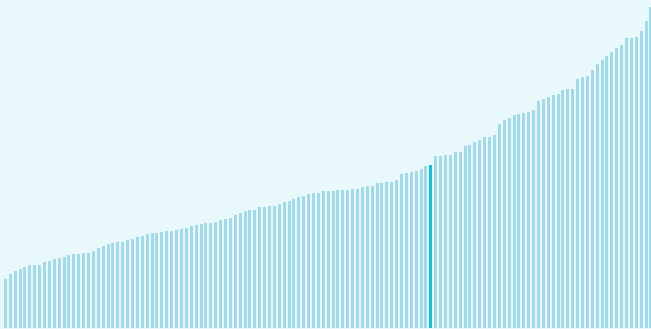




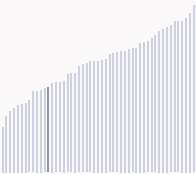
Slovakia ranking in the Global Innovation Index 2024

Slovakia ranks **46th** among the 133 economies featured in the GII 2024.

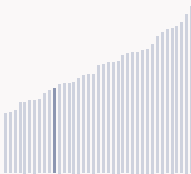
The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.



Slovakia ranks **39th** among the 51 high-income group economies.



Slovakia ranks **29th** among the 39 economies in Europe.



> Slovakia GII Ranking (2020-2024)

The table shows the rankings of Slovakia over the past four 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 2024 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

Slovakia performs better in innovation outputs than innovation inputs in 2024.

This year Slovakia ranks 52nd in innovation inputs. This position is lower than last year.

Slovakia ranks 44th in innovation outputs. This position is higher than last year.

Slovakia has no clusters in the top 100 S&T clusters of the Global Innovation Index.

Global Innovation Index 2024



> Global Innovation Tracker

The Global Innovation Tracker 2024 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, 9 indicators have improved in the short-term and 2 indicators have worsened.

Science and innovation investment

Scientific publications	R&D investments	Venture capital		International patent filings
		Deal numbers	Deal values	
▼ -3.2% 2022 - 2023	▲ 8.9% 2021 - 2022	▲ 37.5% 2022 - 2023	▲ 337.8% 2022 - 2023	▲ 36.4% 2022 - 2023
▲ 4% 2013 - 2023	▲ 4.5% 2012 - 2022	n/a	n/a	▲ 3.9% 2013 - 2023

Technology adoption

Safe sanitation	Connectivity		Robots	Electric vehicles
	Fixed broadband	5G		
0% 2021 - 2022	▲ 1.2% 2021 - 2022	▲ 292.9% 2021 - 2022	▲ 7% 2021 - 2022	n/a
0% 2012 - 2022	▲ 5.5% 2012 - 2022		▲ 15.6% 2012 - 2022	n/a
82.5 per 100 inhabitants in 2022	33 per 100 inhabitants in 2022	55 per 100 inhabitants in 2022		n/a

Socioeconomic impact

Labor productivity	Life expectancy	Temperature change
▲ 0.6% 2022 - 2023	▲ 3.3% 2021 - 2022	▲ 2.4°C 2023
▲ 2.2% 2013 - 2023	▲ 0.1% 2012 - 2022	n/a
94,571 USD in 2023	77.1 years in 2022	

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 country from 1951–1980. Figures are rounded.



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's performance is below expectations for its level of development.

> Innovation overperformers relative to their economic development





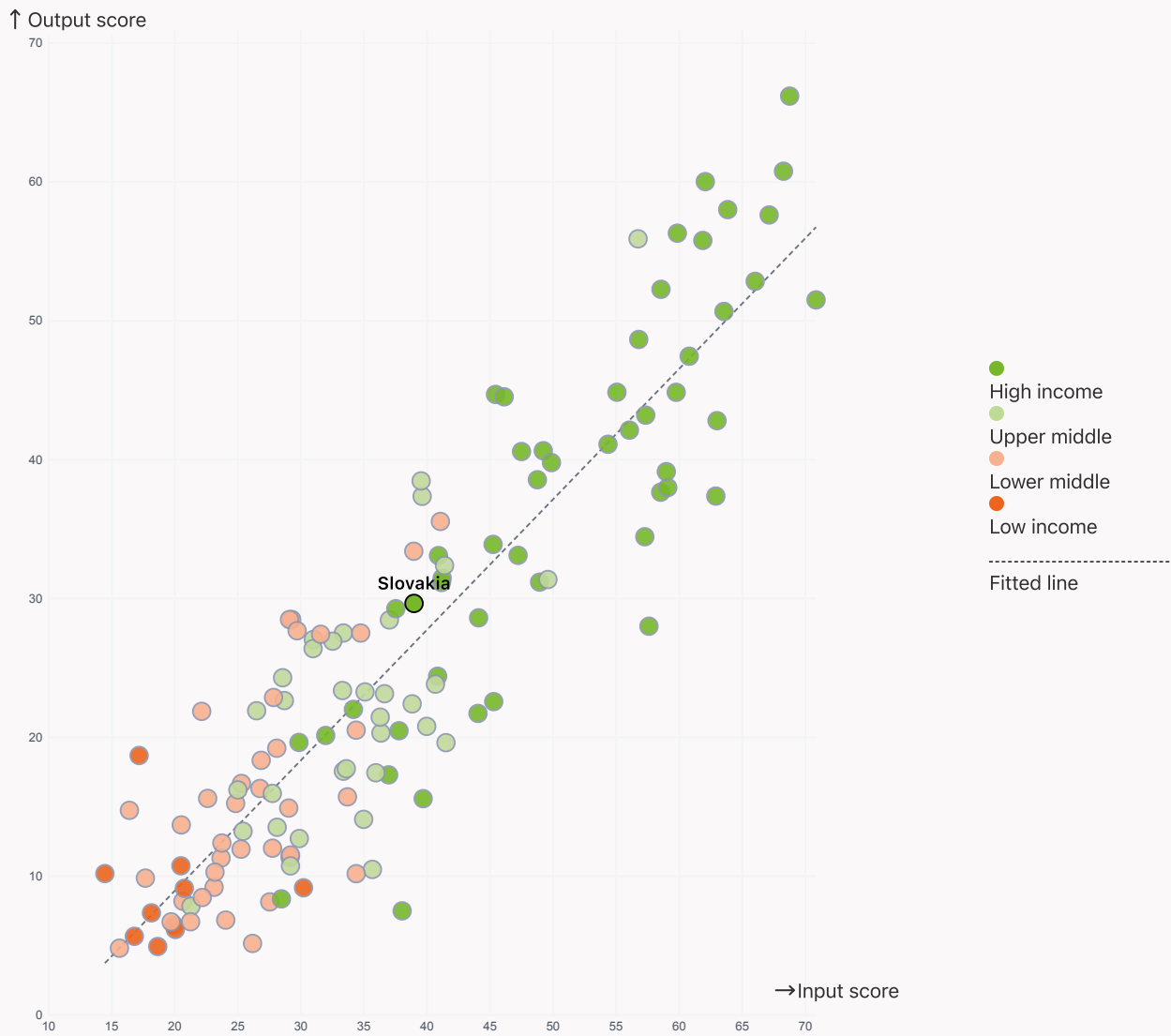
Effectively translating innovation investments into innovation outputs

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.

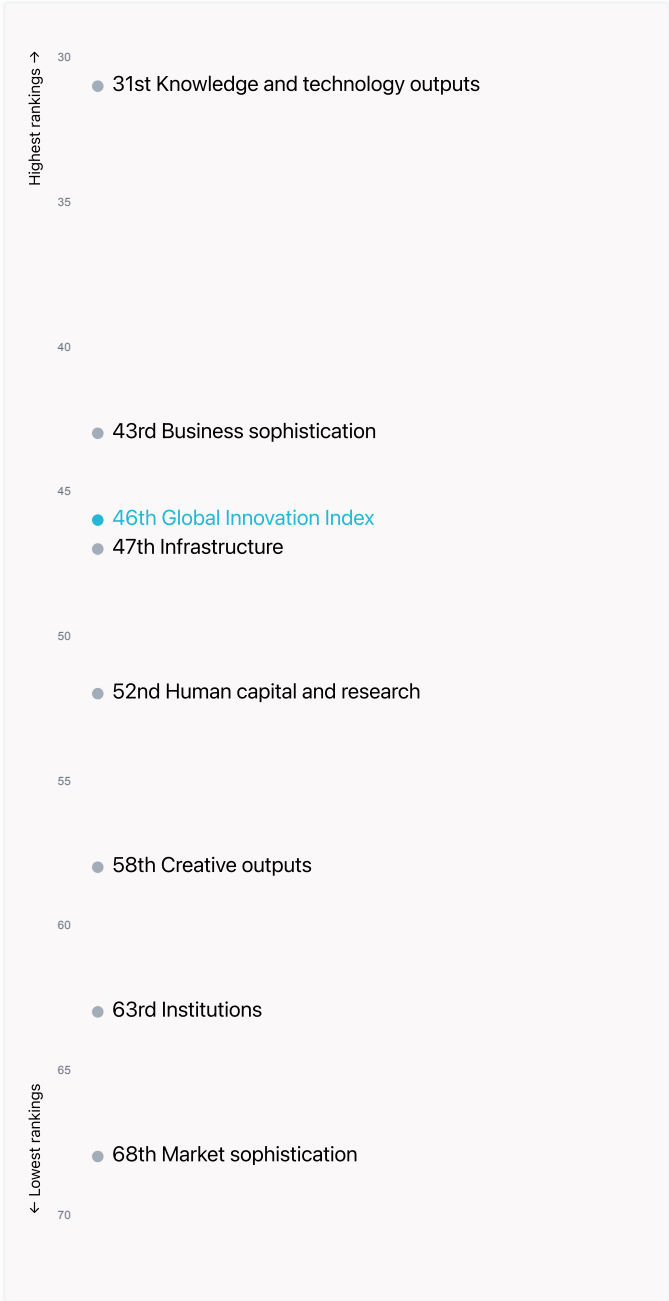
> Relationship between innovation inputs and outputs





Overview of Slovakia's rankings in the seven areas of the GII in 2024

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.




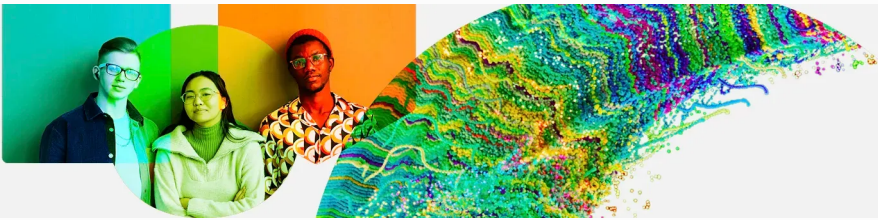
Highest rankings

Slovakia ranks highest in Knowledge and technology outputs (31st) and Business sophistication (43rd).

Lowest rankings

Slovakia ranks lowest in Market sophistication (68th), Institutions (63rd) and Creative outputs (58th).

The full WIPO Intellectual Property  Statistics profile for Slovakia can be found on [this link](#).



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

The charts shows the relative position of Slovakia (blue bar) against other economy groupings (grey bars), for each of the seven areas of the GII Index.



High-Income economies

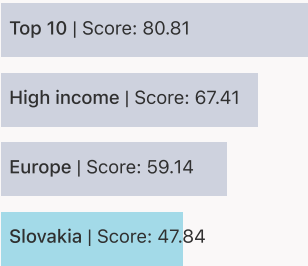
Slovakia performs below the high-income group average in all pillars.



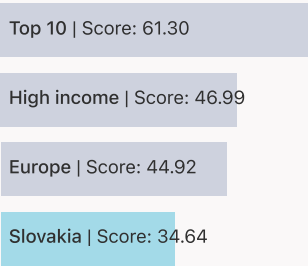
Europe

Slovakia performs below the regional average in all pillars.

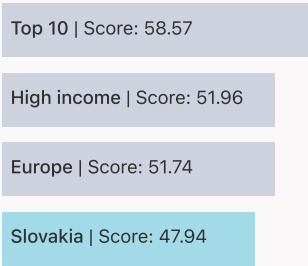
Institutions



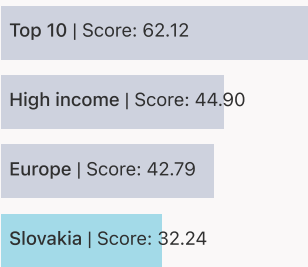
Human capital and research



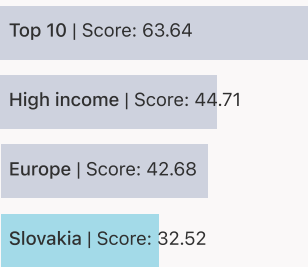
Infrastructure



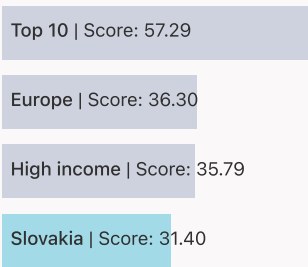
Market sophistication



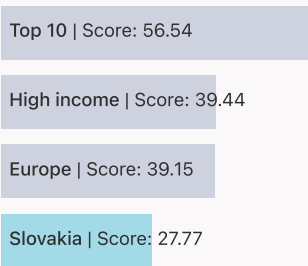
Business sophistication



Knowledge and technology outputs



Creative outputs





Innovation strengths and weaknesses in Slovakia

The table below gives an overview of the indicator strengths and weaknesses of Slovakia in the GII 2024.



Slovakia’s main innovation strengths are **High-tech manufacturing, %** (rank 6), **Creative goods exports, % total trade** (rank 9) and **ISO 14001 environment/bn PPP\$ GDP** (rank 10).

Strengths

Rank	Code	Indicator name
6	6.2.4	High-tech manufacturing, %
9	7.2.4	Creative goods exports, % total trade
10	3.3.3	ISO 14001 environment/bn PPP\$ GDP
12	6.3.2	Production and export complexity
13	6.3.5	ISO 9001 quality/bn PPP\$ GDP
15	7.2.2	National feature films/mn pop. 15–69
16	6.1.3	Utility models by origin/bn PPP\$ GDP
19	2.2.3	Tertiary inbound mobility, %
26	5.3.2	High-tech imports, % total trade
29	6.3.3	High-tech exports, % total trade

Weaknesses

Rank	Code	Indicator name
110	1.3.1	Policy stability for doing business [†]
101	5.2.2	University-industry R&D collaboration [†]
98	5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP
97	5.3.4	FDI net inflows, % GDP
95	3.2.3	Gross capital formation, % GDP
80	1.3.2	Entrepreneurship policies and culture [†]
77	4.2.4	VC received, value, % GDP
49	6.2.2	Unicorn valuation, % GDP
41	2.3.3	Global corporate R&D investors, top 3, mn USD



Slovakia's innovation system

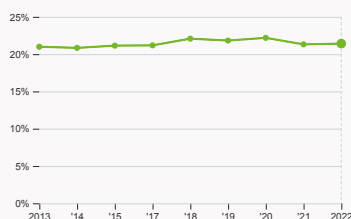
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in Slovakia



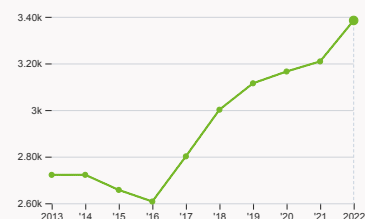
2.1.1 Expenditure on education

was equal to 4.26 % GDP in 2021, down by 0.5 percentage points from the year prior – and equivalent to an indicator rank of 61.



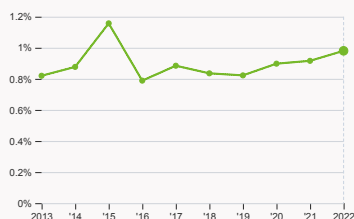
2.2.2 Graduates in science and engineering

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 69.



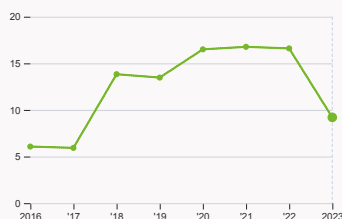
2.3.1 Researchers

was equal to 3384.45 FTE per million population in 2022, up by 5.48% from the year prior – and equivalent to an indicator rank of 31.



2.3.2 Gross expenditure on R&D

was equal to 0.98 % GDP in 2022, up by 0.06 percentage points from the year prior – and equivalent to an indicator rank of 39.



2.3.4 QS university ranking

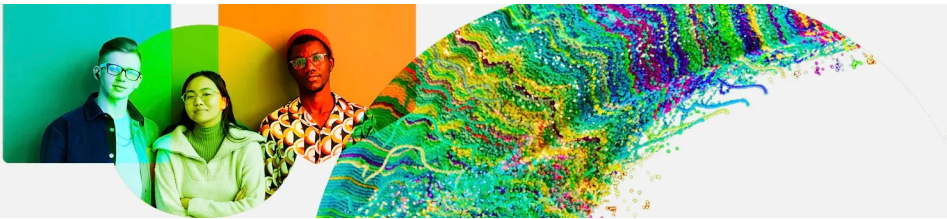
was equal to an average score of 9.2 for the top three universities in 2023, down by 44.58% from the year prior – and equivalent to an indicator rank of 66.



4.2.4 VC received, value

was equal to 35.94 thousand USD in 2023, up by 337.76% from the year prior – and equivalent to an indicator rank of 77.

Global Innovation Index 2024

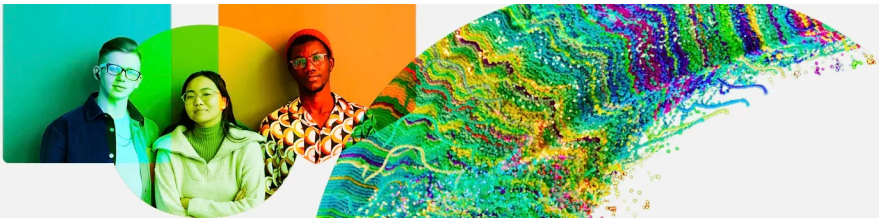


4.3.2 Domestic industry diversification was equal to an index score of 0.19 in 2021, down by 5.19% from the year prior – and equivalent to an indicator rank of 74.



5.1.1 Knowledge-intensive employment was equal to 38.32 % in 2022, up by 19.43 percentage points from the year prior – and equivalent to an indicator rank of 36.

Global Innovation Index 2024



> Innovation outputs in Slovakia



6.1.1 Patents by origin

was equal to 233 patents in 2022, up by 23.28% from the year prior – and equivalent to an indicator rank of 57.



6.2.2 Unicorn valuation

was equal to 0 % GDP in 2024 with no change from the year prior – and equivalent to an indicator rank of 49.



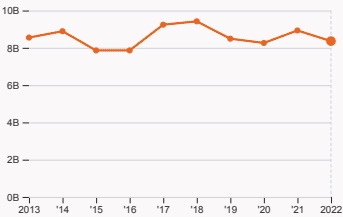
6.2.4 High-tech manufacturing

was equal to 57.26 % of total manufacturing output in 2021, down by 2.96 percentage points from the year prior – and equivalent to an indicator rank of 6.



6.3.2 Production and export complexity

was equal to a score of 1.46 in 2021 with no change from the year prior – and equivalent to an indicator rank of 12.



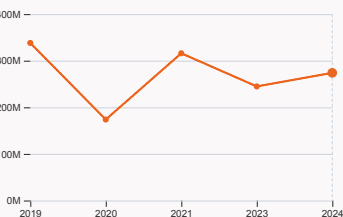
6.3.3 High-tech exports

was equal to 8.36 billion USD in 2022, down by 6.38% from the year prior – and equivalent to an indicator rank of 29.



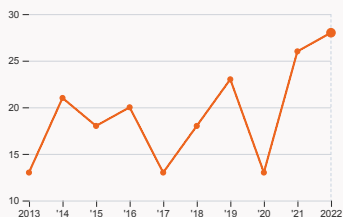
7.1.1 Intangible asset intensity

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

was equal to 273.9 million USD for the brands in the top 5,000 in 2024, up by 11.89% from the year prior – and equivalent to an indicator rank of 73.



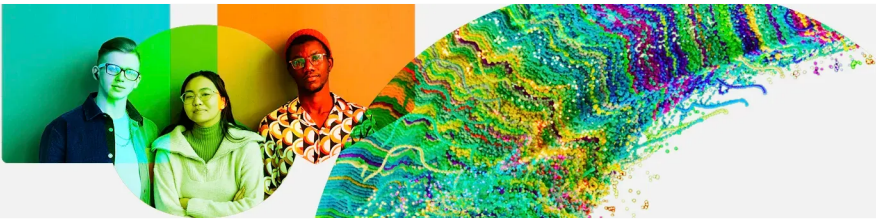
7.2.2 National feature films

was equal to 28 films in 2022, up by 7.69% from the year prior – and equivalent to an indicator rank of 15.



7.3.3 Mobile app creation

was equal to 106.76 million global downloads of mobile apps in 2023, up by 2.84% from the year prior – and equivalent to an indicator rank of 43.



Slovakia's innovation top performers

2.3.4 QS university ranking of Slovakia's top universities

Rank	University	Score
771-780	COMENIUS UNIVERSITY IN BRATISLAVA	15.30
851-900	PAVOL JOZEF SAFARIK UNIVERSITY IN KOSICE	12.30
1001-1200	UNIVERSITY OF ZILINA	9.50

Source: QS Quacquarelli Symonds Ltd (<https://www.topuniversities.com/university-rankings/world-university-rankings/2023>).
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".

7.1.1 Top 15 intangible-asset intensive companies in Slovakia

Rank	Firm	Intensity, %
1	TATRY MOUNTAIN RESORTS, A.S.	29.99
2	GEVORKYAN, S.R.O.	57.23
3	VIPO, A.S.	--

Source: Brand Finance (<https://brandirectory.com/reports/gift-2022>).
Note: Brand Finance only provides within economy ranks.

7.1.3 Top 5,000 companies in Slovakia with highest global brand value

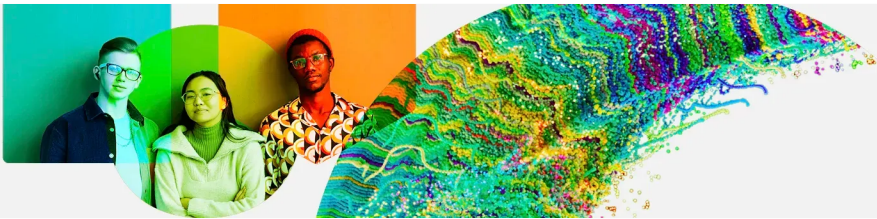
Rank	Brand	Industry	Brand Value, mn USD
1	SLOVNAFT	Oil & Gas	273.9

Source: Brand Finance (<https://brandirectory.com>).
Note: Rank corresponds to within economy ranks.

Slovakia

46

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 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.



Data availability

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



Slovakia has missing data for three indicators and outdated data for six indicators.

Missing data for Slovakia

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

Outdated data for Slovakia

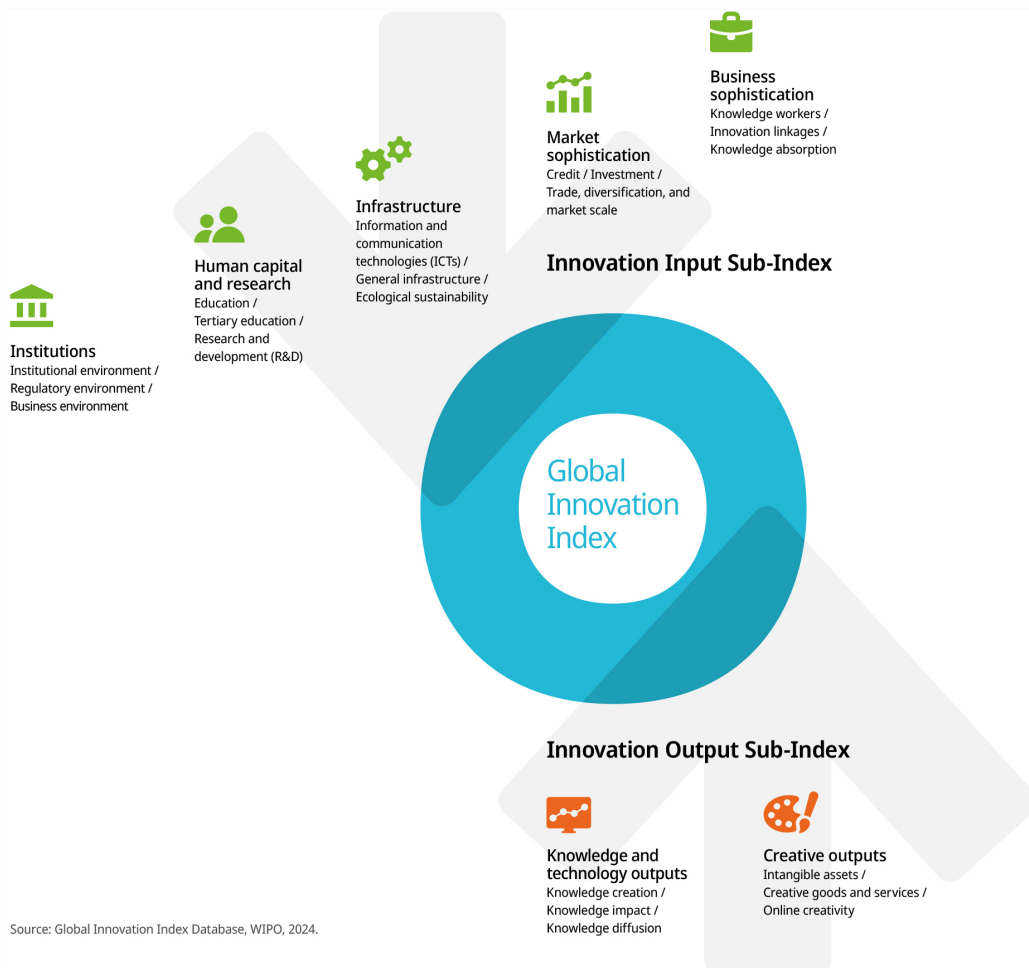
Code	Indicator name	Economy Year	Model Year	Source
1.3.1	Policy stability for doing business [†]	2022	2023	World Economic Forum, Executive Opinion Survey (EOS)
2.1.1	Expenditure on education, % GDP	2021	2022	UNESCO Institute for Statistics
4.2.1	Market capitalization, % GDP	2014	2022	World Federation of Exchanges; World Bank
5.1.2	Firms offering formal training, %	2019	2023	World Bank Enterprise Surveys
5.2.2	University–industry R&D collaboration [†]	2022	2023	World Economic Forum, Executive Opinion Survey (EOS)
5.2.3	State of cluster development [†]	2022	2023	World Economic Forum, Executive Opinion Survey (EOS)

Global Innovation Index 2024



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 130 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.