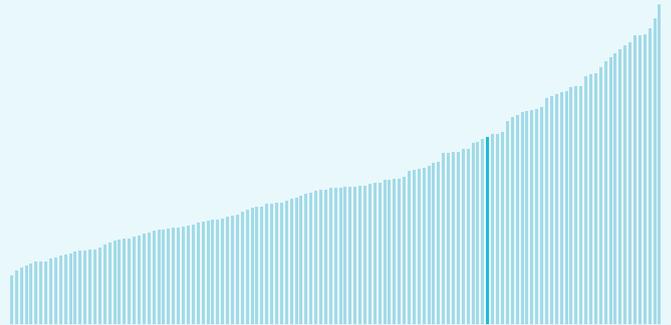


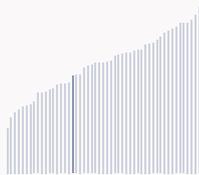
## Hungary ranking in the Global Innovation Index 2024

Hungary ranks **36th** among the 133 economies featured in the GII 2024.

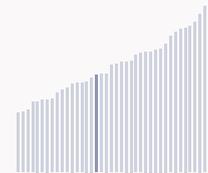
The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.



Hungary ranks **34th** among the 51 high-income group economies.



Hungary ranks **23rd** among the 39 economies in Europe.



### > Hungary GII Ranking (2020-2024)

The table shows the rankings of Hungary 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 Hungary in the GII 2024 is between ranks 32 and 38.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	35th	37th	32nd
2021	34th	34th	31st
2022	34th	36th	34th
2023	35th	36th	33rd
2024	<b>36th</b>	<b>37th</b>	<b>35th</b>

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

This year Hungary ranks **37th** in innovation inputs. This position is lower than last year.

Hungary ranks **35th** in innovation outputs. This position is lower than last year.

Hungary 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 Hungary, how rapidly is technology being embraced and what are the resulting societal impacts.



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

### Science and innovation investment

Scientific publications	R&D investments	Venture capital		International patent filings
		Deal numbers	Deal values	
▼ -2.4% 2022 - 2023	▼ -11.5% 2021 - 2022	▲ 60% 2022 - 2023	▼ -83.9% 2022 - 2023	▲ 14.6% 2022 - 2023
▲ 3.3% 2013 - 2023	▲ 4.4% 2012 - 2022	▲ 32% 2013 - 2023	n/a	▼ -0.4% 2013 - 2023

### Technology adoption

Safe sanitation	Connectivity		Robots	Electric vehicles
	Fixed broadband	5G		
0% 2021 - 2022	▲ 1.9% 2021 - 2022	▲ 132% 2021 - 2022	▲ 9.4% 2021 - 2022	n/a
▲ 1.2% 2012 - 2022	▲ 3.9% 2012 - 2022		▲ 14.1% 2012 - 2022	n/a
87.8 per 100 inhabitants in 2022	35.5 per 100 inhabitants in 2022	58 per 100 inhabitants in 2022		n/a

### Socioeconomic impact

Labor productivity	Life expectancy	Temperature change
▲ 0.2% 2022 - 2023	▲ 2.5% 2021 - 2022	▲ 2.5°C 2023
▲ 1.6% 2013 - 2023	▲ 0.1% 2012 - 2022	n/a
87,280 USD in 2023	76 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

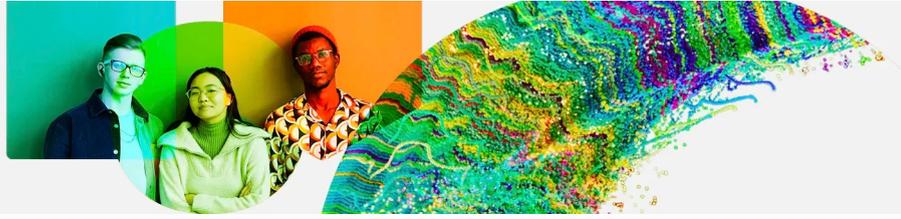
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected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



Relative to GDP, Hungary's performance is at 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.

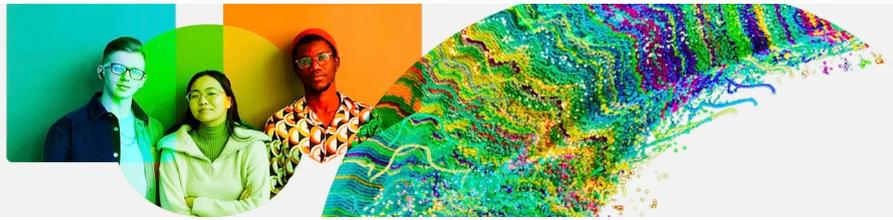


Hungary produces more innovation outputs relative to its level of innovation investments.

### > Relationship between innovation inputs and outputs

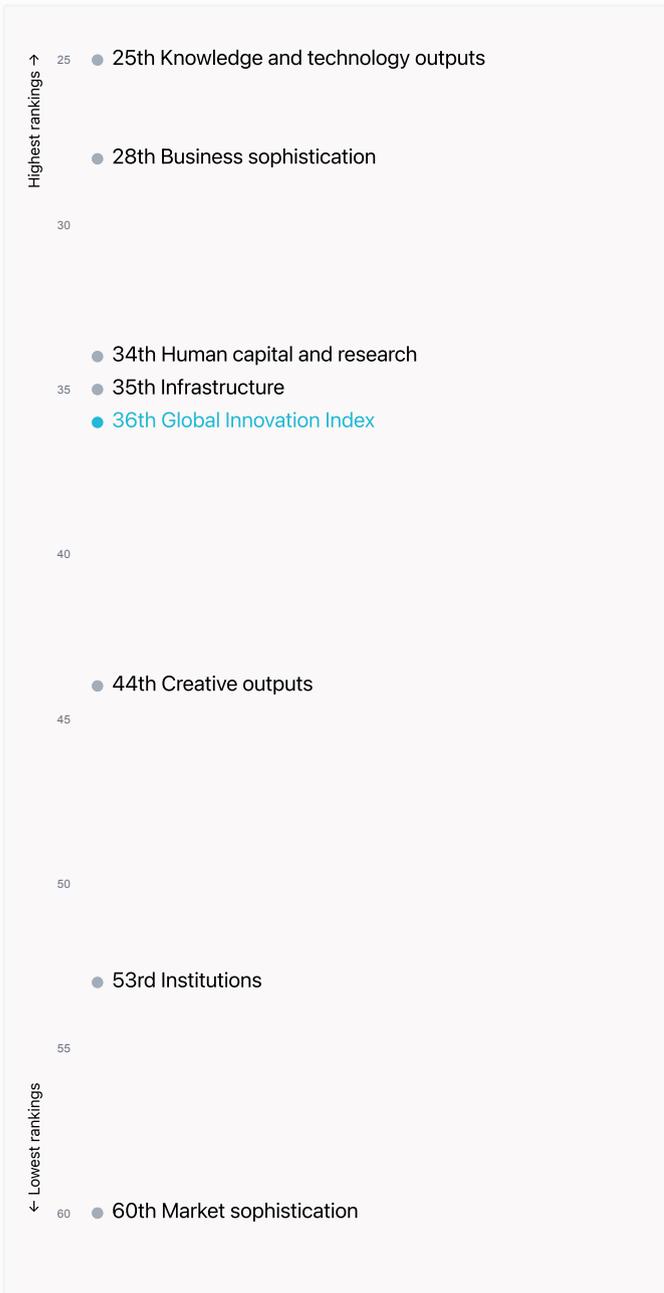


# Global Innovation Index 2024



## Overview of Hungary'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 Hungary are those that rank above the GII (shown in blue) and the weakest are those that rank below.



### Highest rankings



Hungary ranks highest in Knowledge and technology outputs (25th), Business sophistication (28th), Human capital and research (34th) and Infrastructure (35th).

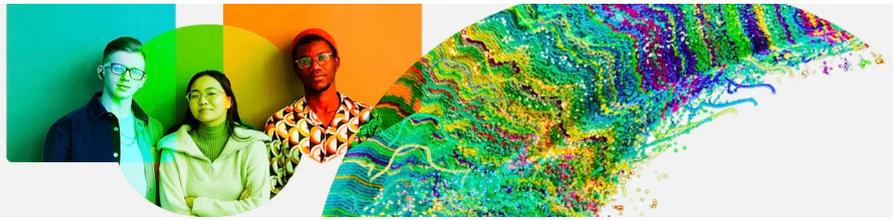
### Lowest rankings



Hungary ranks lowest in Market sophistication (60th), Institutions (53rd) and Creative outputs (44th).

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

# Global Innovation Index 2024



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

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



### High-Income economies

Hungary performs above the high-income group average in Business sophistication.



### Europe

Hungary performs above the regional average in Business sophistication.

#### Institutions

Top 10 | Score: 80.81

High income | Score: 67.41

Europe | Score: 59.14

Hungary | Score: 52.18

#### Human capital and research

Top 10 | Score: 61.30

High income | Score: 46.99

Europe | Score: 44.92

Hungary | Score: 42.95

#### Infrastructure

Top 10 | Score: 58.57

High income | Score: 51.96

Europe | Score: 51.74

Hungary | Score: 51.05

#### Market sophistication

Top 10 | Score: 62.12

High income | Score: 44.90

Europe | Score: 42.79

Hungary | Score: 34.05

#### Business sophistication

Top 10 | Score: 63.64

Hungary | Score: 46.30

High income | Score: 44.71

Europe | Score: 42.68

#### Knowledge and technology outputs

Top 10 | Score: 57.29

Europe | Score: 36.30

High income | Score: 35.79

Hungary | Score: 35.58

#### Creative outputs

Top 10 | Score: 56.54

High income | Score: 39.44

Europe | Score: 39.15

Hungary | Score: 32.09



## Innovation strengths and weaknesses in Hungary

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

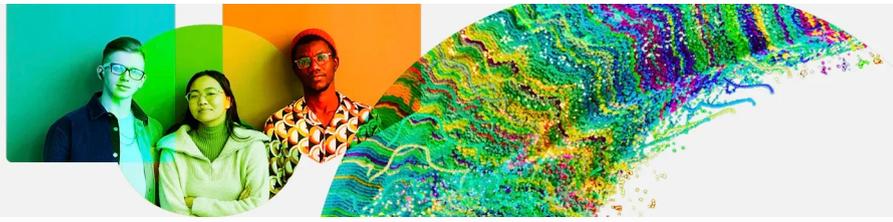


Hungary's main innovation strengths are **FDI net inflows, % GDP (rank 1)**, **High-tech manufacturing, % (rank 7)** and **ISO 9001 quality/bn PPP\$ GDP (rank 7)**.

### Strengths

### Weaknesses

Rank	Code	Indicator name	Rank	Code	Indicator name
1	5.3.4	FDI net inflows, % GDP	89	1.3.1	Policy stability for doing business <sup>†</sup>
7	6.2.4	High-tech manufacturing, %	85	4.1.2	Domestic credit to private sector, % GDP
7	6.3.5	ISO 9001 quality/bn PPP\$ GDP	85	7.1.2	Trademarks by origin/bn PPP\$ GDP
8	7.2.4	Creative goods exports, % total trade	84	4.2.3	VC recipients, deals/bn PPP\$ GDP
8	3.3.3	ISO 14001 environment/bn PPP\$ GDP	67	4.2.1	Market capitalization, % GDP
9	5.2.1	Public Research-Industry co-publications, %	67	2.2.2	Graduates in science and engineering, %
11	6.3.2	Production and export complexity	67	4.2.4	VC received, value, % GDP
12	6.3.3	High-tech exports, % total trade	56	2.1.2	Government funding/pupil, secondary, % GDP/cap
16	2.2.3	Tertiary inbound mobility, %	50	1.3.2	Entrepreneurship policies and culture <sup>†</sup>
17	5.3.2	High-tech imports, % total trade	49	6.2.2	Unicorn valuation, % GDP



## Hungary's innovation system

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

### > Innovation inputs in Hungary



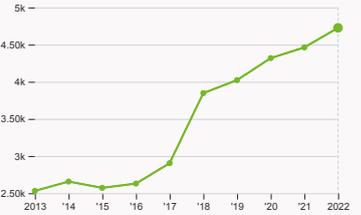
#### 2.1.1 Expenditure on education

was equal to 5.01 % GDP in 2021, up by 0.85 percentage points from the year prior – and equivalent to an indicator rank of 43.



#### 2.2.2 Graduates in science and engineering

was equal to 21.57 % of total graduates in 2021, up by 6.07 percentage points from the year prior – and equivalent to an indicator rank of 67.



#### 2.3.1 Researchers

was equal to 4725.96 FTE per million population in 2022, up by 5.92% from the year prior – and equivalent to an indicator rank of 25.



#### 2.3.2 Gross expenditure on R&D

was equal to 1.39 % GDP in 2022, down by 0.25 percentage points from the year prior – and equivalent to an indicator rank of 31.



#### 2.3.4 QS university ranking

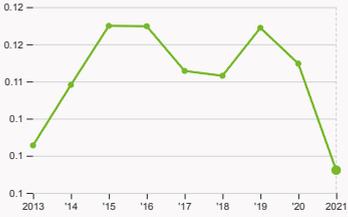
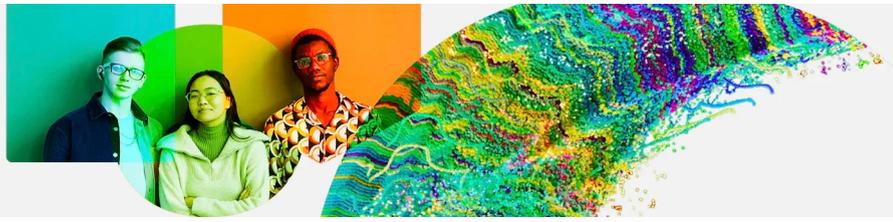
was equal to an average score of 17.87 for the top three universities in 2023, down by 8.03% from the year prior – and equivalent to an indicator rank of 51.



#### 4.2.4 VC received, value

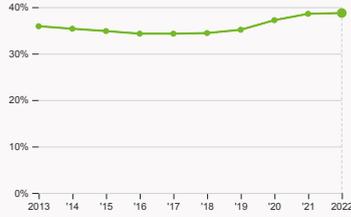
was equal to 23.27 thousand USD in 2023, down by 83.92% from the year prior – and equivalent to an indicator rank of 67.

# Global Innovation Index 2024



### 4.3.2 Domestic industry diversification

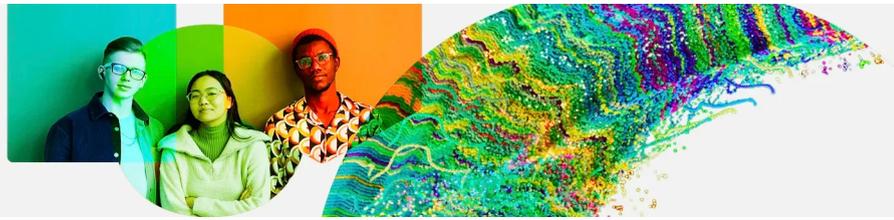
was equal to an index score of 0.1 in 2021, down by 12.76% from the year prior – and equivalent to an indicator rank of 26.



### 5.1.1 Knowledge-intensive employment

was equal to 38.73 % in 2022, up by 0.17 percentage points from the year prior – and equivalent to an indicator rank of 33.

# Global Innovation Index 2024



## › Innovation outputs in Hungary



### 6.1.1 Patents by origin

was equal to 511 patents in 2022, down by 7.59% from the year prior – and equivalent to an indicator rank of 45.



### 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 56.53 % of total manufacturing output in 2021, down by 2.06 percentage points from the year prior – and equivalent to an indicator rank of 7.



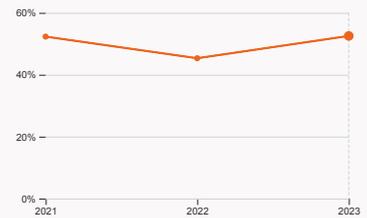
### 6.3.2 Production and export complexity

was equal to a score of 1.52 in 2021 with no change from the year prior – and equivalent to an indicator rank of 11.



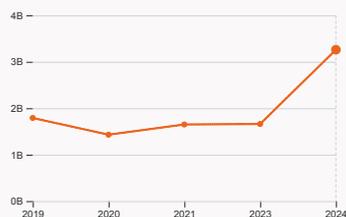
### 6.3.3 High-tech exports

was equal to 22.3 billion USD in 2022, up by 3.43% from the year prior – and equivalent to an indicator rank of 12.



### 7.1.1 Intangible asset intensity

was equal to 52.52 % for the top 15 companies in 2023, up by 7.2 percentage points from the year prior – and equivalent to an indicator rank of 43.



### 7.1.3 Global brand value

was equal to 3.26 billion USD for the brands in the top 5,000 in 2024, up by 96.39% from the year prior – and equivalent to an indicator rank of 50.



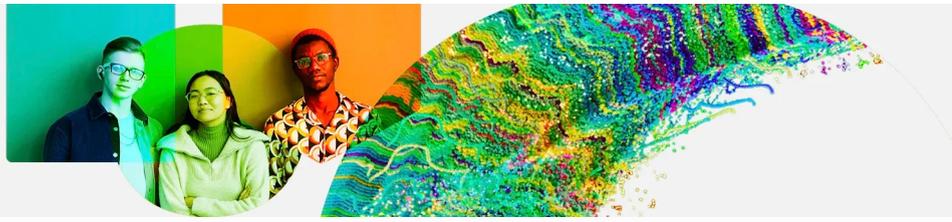
### 7.2.2 National feature films

was equal to 21 films in 2022, up by 23.53% from the year prior – and equivalent to an indicator rank of 43.



### 7.3.3 Mobile app creation

was equal to 92.42 million global downloads of mobile apps in 2023, up by 8.32% from the year prior – and equivalent to an indicator rank of 61.



## Hungary's innovation top performers

### 2.3.4 QS university ranking of Hungary's top universities

Rank	University	Score
601-610	UNIVERSITY OF SZEGED	19.50
671-680	UNIVERSITY OF DEBRECEN	17.30
701-710	EOTVOS LORAND UNIVERSITY	16.80

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 Hungary

Rank	Firm	Intensity, %
1	RICHTER GEDEON VEGYESZETI GYAR NYILVANOSAN MUKODO RT.	50.79
2	OTP BANK NYRT.	14.54
3	4IG NYRT.	20.97

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 Hungary with highest global brand value

Rank	Brand	Industry	Brand Value, mn USD
1	OTP BANK	Banking	1,348.1
2	MOL	Oil & Gas	985.4
3	WIZZ AIR	Airlines	928.6

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

# Global Innovation Index 2024

## Hungary

GII 2024 rank

36

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
35	37	High	EUR	9.7	421.7	43,601.4
			Score / Value Rank			
<b>Institutions</b>			52.2 53	<b>Business sophistication</b> 46.3 28		
<b>1.1 Institutional environment</b>			66 40	<b>5.1 Knowledge workers</b> 48.2 36		
1.1.1 Operational stability for businesses*			74 37	5.1.1 Knowledge-intensive employment, %		
1.1.2 Government effectiveness*			57.9 45	5.1.2 Firms offering formal training, %		
<b>1.2 Regulatory environment</b>			54.3 48	5.1.3 GERD performed by business, % GDP		
1.2.1 Regulatory quality*			52.5 54	5.1.4 GERD financed by business, %		
1.2.2 Rule of law*			56 46	5.1.5 Females employed w/advanced degrees, %		
<b>1.3 Business environment</b>			36.3 87	<b>5.2 Innovation linkages</b> 35.4 35		
1.3.1 Policy stability for doing business*			40.4 89	5.2.1 Public Research-Industry co-publications, %		
1.3.2 Entrepreneurship policies and culture*			32.3 50	5.2.2 University-industry R&D collaboration†		
<b>Human capital and research</b>			42.9 34	5.2.3 State of cluster development†		
<b>2.1 Education</b>			57.2 50	5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP		
2.1.1 Expenditure on education, % GDP			5 43	5.2.5 Patent families/bn PPP\$ GDP		
2.1.2 Government funding/pupil, secondary, % GDP/cap			18.9 56	<b>5.3 Knowledge absorption</b> 55.4 6		
2.1.3 School life expectancy, years			15.1 48	5.3.1 Intellectual property payments, % total trade		
2.1.4 PISA scales in reading, maths and science			477.2 29	5.3.2 High-tech imports, % total trade		
2.1.5 Pupil-teacher ratio, secondary			9.6 28	5.3.3 ICT services imports, % total trade		
<b>2.2 Tertiary education</b>			36.8 52	5.3.4 FDI net inflows, % GDP		
2.2.1 Tertiary enrolment, % gross			56.5 62	5.3.5 Research talent, % in businesses		
2.2.2 Graduates in science and engineering, %			21.6 67	<b>Knowledge and technology outputs</b> 35.6 25		
2.2.3 Tertiary inbound mobility, %			13.2 16	<b>6.1 Knowledge creation</b> 22.5 48		
<b>2.3 Research and development (R&amp;D)</b>			34.9 29	6.1.1 Patents by origin/bn PPP\$ GDP		
2.3.1 Researchers, FTE/mn pop.			4,726 25	6.1.2 PCT patents by origin/bn PPP\$ GDP		
2.3.2 Gross expenditure on R&D, % GDP			1.4 31	6.1.3 Utility models by origin/bn PPP\$ GDP		
2.3.3 Global corporate R&D investors, top 3, mn USD			50.8 29	6.1.4 Scientific and technical articles/bn PPP\$ GDP		
2.3.4 QS university ranking, top 3*			18.1 51	6.1.5 Citable documents H-index		
<b>Infrastructure</b>			51 35	<b>6.2 Knowledge impact</b> 37.2 33		
<b>3.1 Information and communication technologies (ICTs)</b>			74.3 60	6.2.1 Labor productivity growth, %		
3.1.1 ICT access*			96.8 37	6.2.2 Unicorn valuation, % GDP		
3.1.2 ICT use*			78.2 64	6.2.3 Software spending, % GDP		
3.1.3 Government's online service*			72 56	6.2.4 High-tech manufacturing, %		
3.1.4 E-participation*			50 75	<b>6.3 Knowledge diffusion</b> 47.1 15		
<b>3.2 General infrastructure</b>			37.1 45	6.3.1 Intellectual property receipts, % total trade		
3.2.1 Electricity output, GWh/mn pop.			3,686.5 59	6.3.2 Production and export complexity		
3.2.2 Logistics performance*			50 50	6.3.3 High-tech exports, % total trade		
3.2.3 Gross capital formation, % GDP			29.3 29	6.3.4 ICT services exports, % total trade		
<b>3.3 Ecological sustainability</b>			41.8 13	6.3.5 ISO 9001 quality/bn PPP\$ GDP		
3.3.1 GDP/unit of energy use			13 42	<b>Creative outputs</b> 32.1 44		
3.3.2 Low-carbon energy use, %			22.7 57	<b>7.1 Intangible assets</b> 27.5 68		
3.3.3 ISO 14001 environment/bn PPP\$ GDP			8.8 8	7.1.1 Intangible asset intensity, top 15, %		
<b>Market sophistication</b>			34.1 60	7.1.2 Trademarks by origin/bn PPP\$ GDP		
<b>4.1 Credit</b>			33.1 47	7.1.3 Global brand value, top 5,000, % GDP		
4.1.1 Finance for startups and scaleups†			55.4 31	7.1.4 Industrial designs by origin/bn PPP\$ GDP		
4.1.2 Domestic credit to private sector, % GDP			36 85	<b>7.2 Creative goods and services</b> 32.9 24		
4.1.3 Loans from microfinance institutions, % GDP			n/a n/a	7.2.1 Cultural and creative services exports, % total trade		
<b>4.2 Investment</b>			5 79	7.2.2 National feature films/mn pop. 15-69		
4.2.1 Market capitalization, % GDP			16.2 67	7.2.3 Entertainment and media market/th pop. 15-69		
4.2.2 Venture capital (VC) investors, deals/bn PPP\$ GDP			0.07 56	7.2.4 Creative goods exports, % total trade		
4.2.3 VC recipients, deals/bn PPP\$ GDP			0.02 84	<b>7.3 Online creativity</b> 40.6 34		
4.2.4 VC received, value, % GDP			0.0004 67	7.3.1 Top-level domains (TLDs)/th pop. 15-69		
<b>4.3 Trade, diversification and market scale</b>			64 32	7.3.2 GitHub commits/mn pop. 15-69		
4.3.1 Applied tariff rate, weighted avg., %			1.1 21	7.3.3 Mobile app creation/bn PPP\$ GDP		
4.3.2 Domestic industry diversification			92.9 26			
4.3.3 Domestic market scale, bn PPP\$			421.7 52			

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 Hungary.



Hungary has missing data for one indicator and outdated data for five indicators.

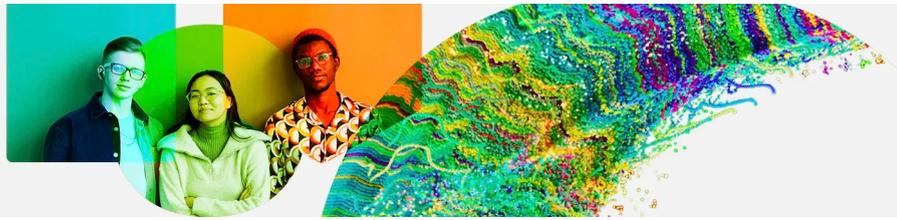
### Missing data for Hungary

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)

### Outdated data for Hungary

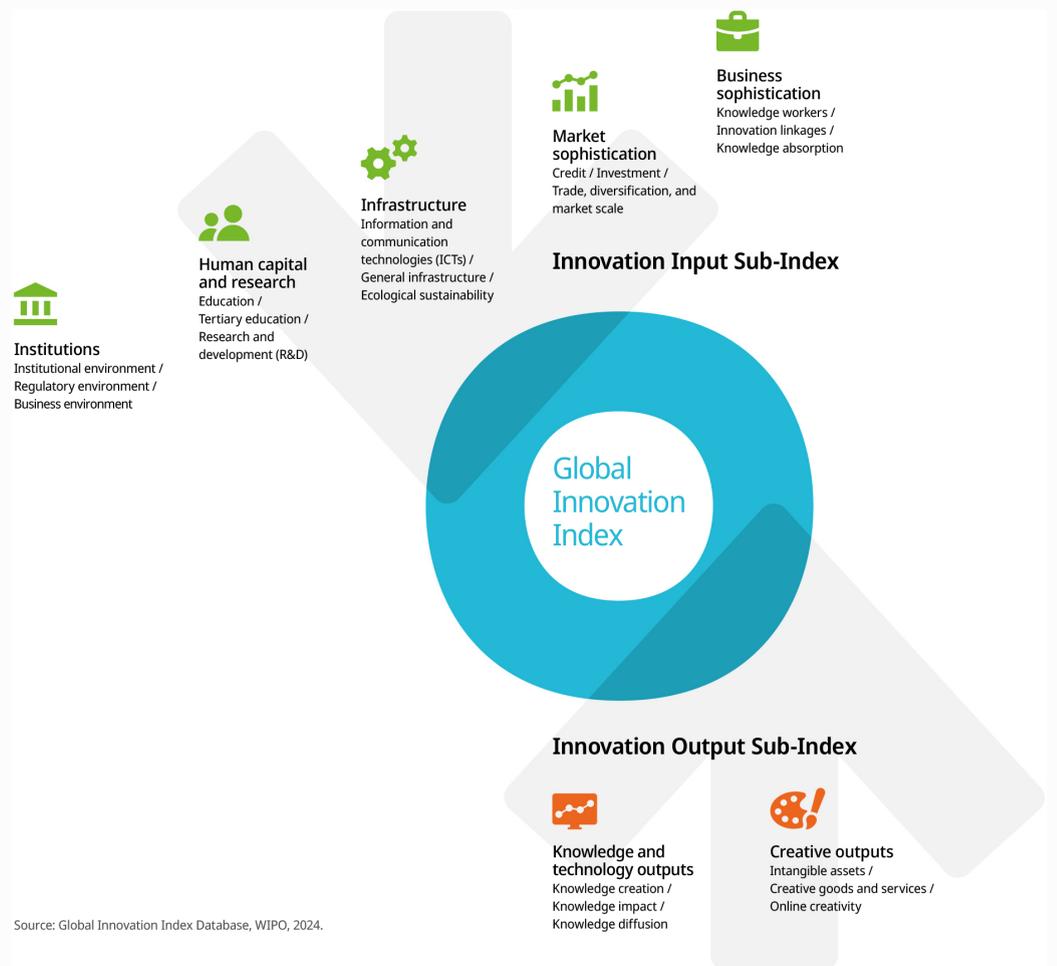
Code	Indicator name	Economy Year	Model Year	Source
2.1.1	Expenditure on education, % GDP	2021	2022	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2021	2022	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2021	2022	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2021	2022	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2021	2022	UNESCO Institute for Statistics

# 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.