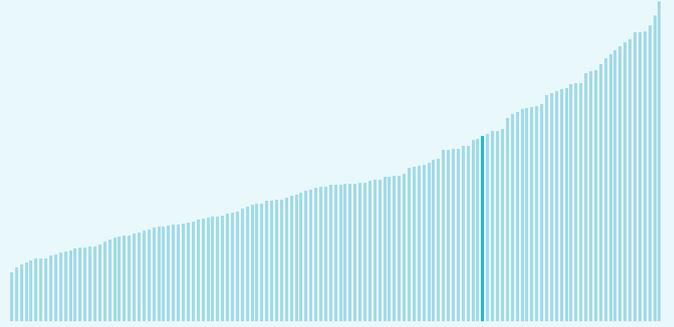


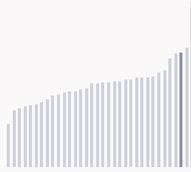
## Türkiye ranking in the Global Innovation Index 2024

Türkiye ranks **37th** among the 133 economies featured in the GII 2024.

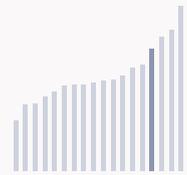
The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.



Türkiye ranks **3rd** among the 34 upper-middle-income group economies.



Türkiye ranks **4th** among the 18 economies in Northern Africa and Western Asia.



### > Türkiye GII Ranking (2020-2024)

The table shows the rankings of Türkiye 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 Türkiye in the GII 2024 is between ranks 32 and 39.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	51st	52nd	53rd
2021	41st	45th	41st
2022	37th	49th	33rd
2023	39th	52nd	32nd
2024	<b>37th</b>	<b>51st</b>	<b>28th</b>

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

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

Türkiye ranks **28th** in innovation outputs. This position is higher than last year.

Türkiye has 2 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 Türkiye, how rapidly is technology being embraced and what are the resulting societal impacts.



For Türkiye, 8 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	
▼ -0.5% 2022 - 2023	▼ -0.4% 2021 - 2022	▲ 47.2% 2022 - 2023	▼ -79.6% 2022 - 2023	▲ 8.5% 2022 - 2023
▲ 5.9% 2013 - 2023	▲ 10.3% 2012 - 2022	▲ 30.4% 2013 - 2023	▲ 0.6% 2013 - 2023	▲ 9.1% 2013 - 2023

### Technology adoption

Safe sanitation	Connectivity		Robots	Electric vehicles
	Fixed broadband	5G		
▲ 2.5% 2021 - 2022	▲ 4.1% 2021 - 2022	n/a	▲ 17.6% 2021 - 2022	▲ 402.5% 2022 - 2023
▲ 2.9% 2012 - 2022	▲ 7.9% 2012 - 2022		▲ 19.1% 2012 - 2022	▲ 80% 2013 - 2023
78.7 per 100 inhabitants in 2022	22.3 per 100 inhabitants in 2022	n/a		0.6 per 100 inhabitants in 2023

### Socioeconomic impact

Labor productivity	Life expectancy	Temperature change
▲ 2.3% 2022 - 2023	▲ 3.2% 2021 - 2022	▲ 2.1°C 2023
▲ 2.7% 2013 - 2023	▲ 0.4% 2012 - 2022	n/a
114,811 USD in 2023	78.5 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

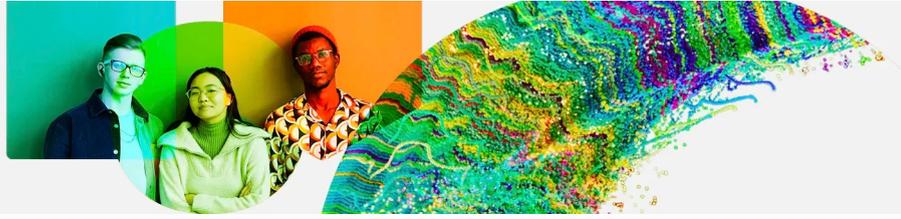
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected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



Relative to GDP, Türkiye's performance is at expectations for its level of development.

### > Innovation overperformers relative to their economic development





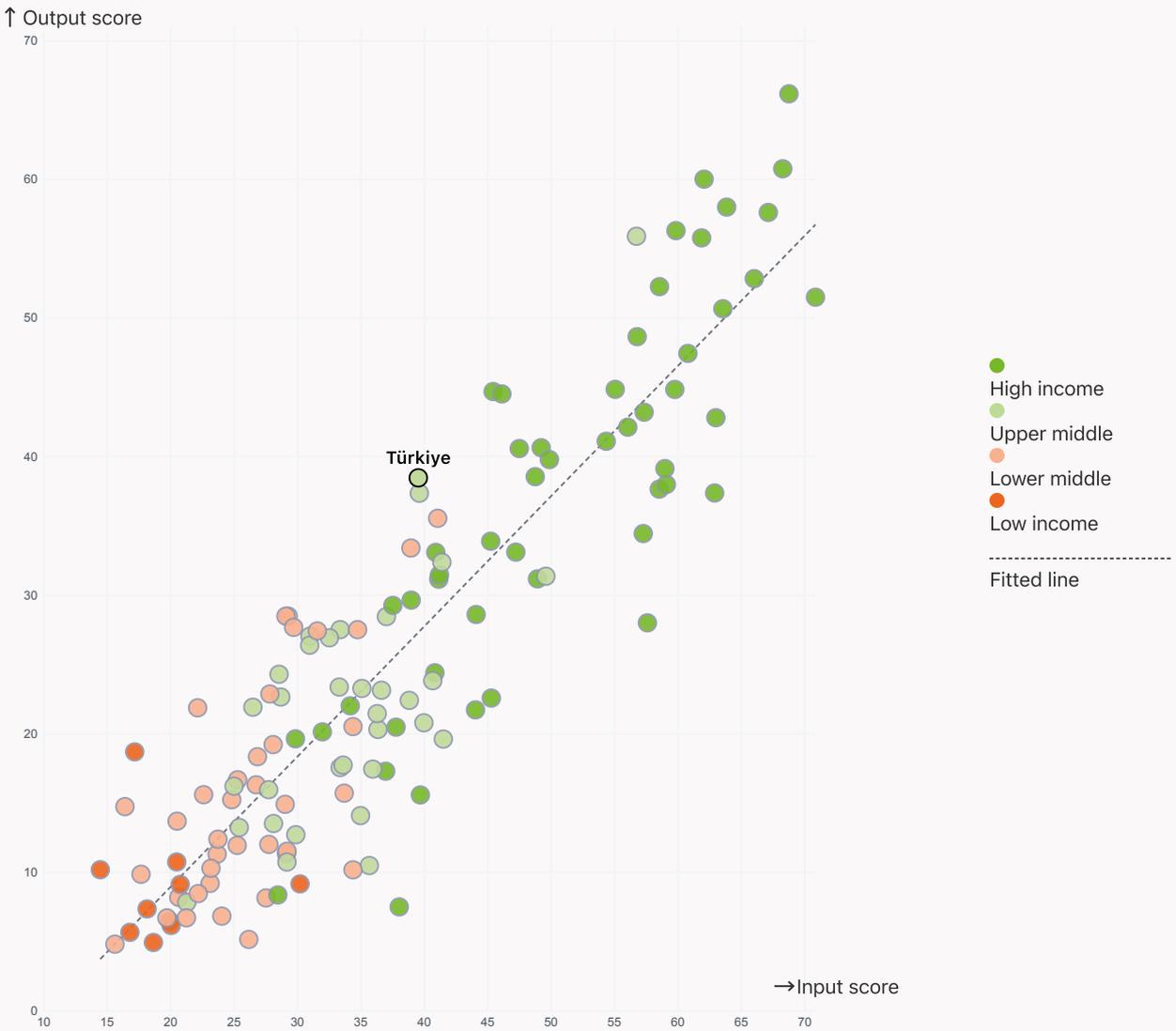
## Effectively translating innovation investments into innovation outputs

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.



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

### > Relationship between innovation inputs and outputs

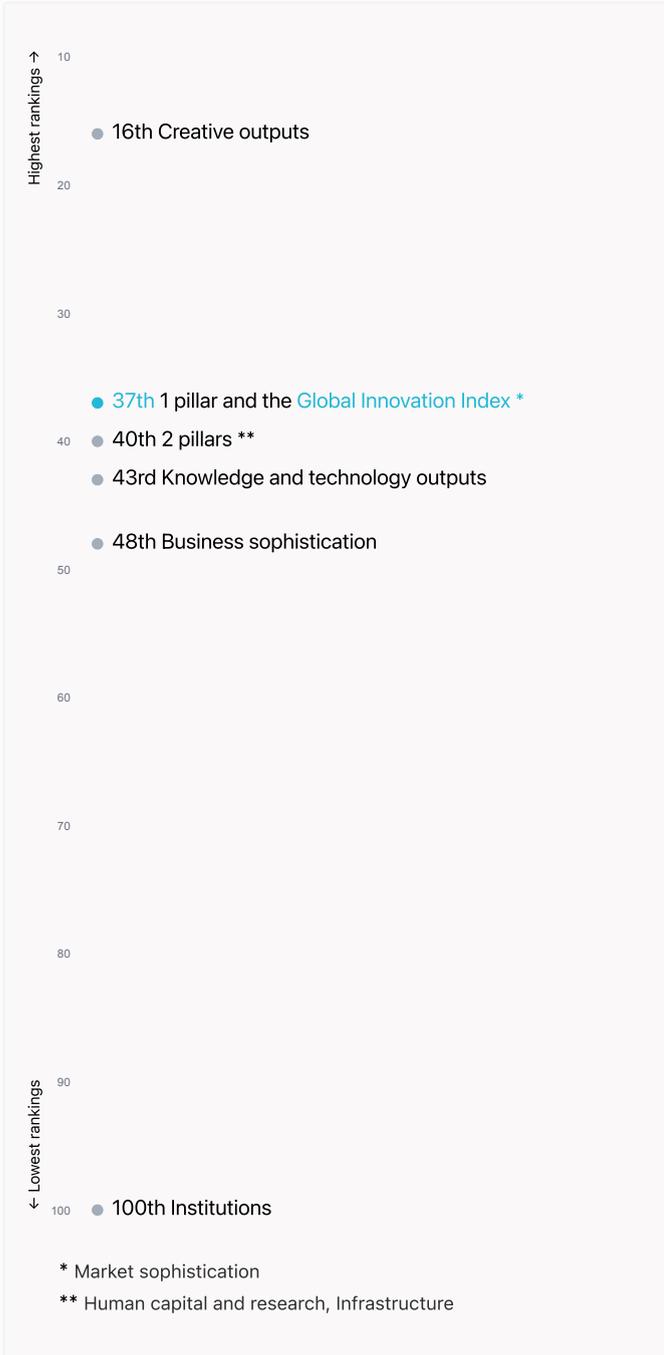


# Global Innovation Index 2024



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



### Highest rankings



Türkiye ranks highest in Creative outputs (16th) and Market sophistication (37th).

### Lowest rankings



Türkiye ranks lowest in Institutions (100th), Business sophistication (48th) and Knowledge and technology outputs (43rd).

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



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

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



### Upper-Middle-Income economies

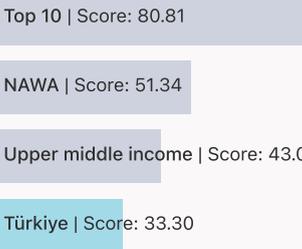
Türkiye performs above the upper-middle-income group average in Human capital and research, Infrastructure, Market sophistication, Business sophistication, Knowledge and technology outputs, Creative outputs.



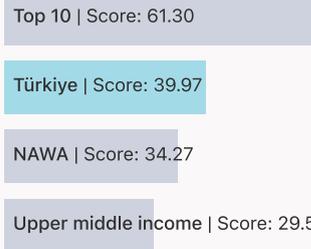
### Northern Africa And Western Asia

Türkiye performs above the regional average in Human capital and research, Infrastructure, Market sophistication, Business sophistication, Knowledge and technology outputs, Creative outputs.

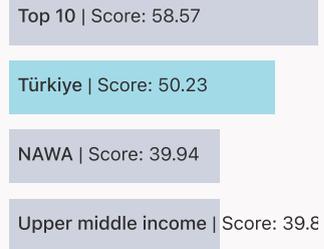
#### Institutions



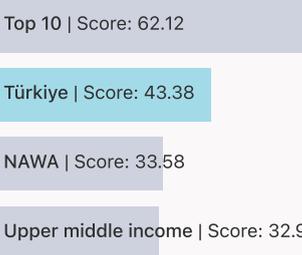
#### Human capital and research



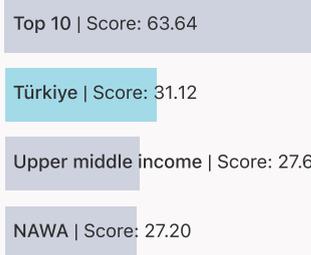
#### Infrastructure



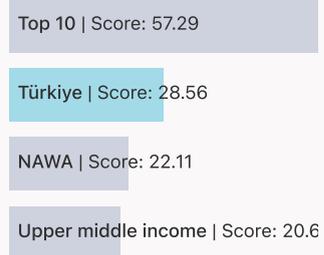
#### Market sophistication



#### Business sophistication



#### Knowledge and technology outputs



#### Creative outputs





## Innovation strengths and weaknesses in Türkiye

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



Türkiye's main innovation strengths are **Industrial designs by origin/bn PPP\$ GDP (rank 1)**, **Trademarks by origin/bn PPP\$ GDP (rank 1)** and **Tertiary enrolment, % gross (rank 2)**.

### Strengths

### Weaknesses

Rank	Code	Indicator name	Rank	Code	Indicator name
1	7.1.4	Industrial designs by origin/bn PPP\$ GDP	111	2.1.1	Expenditure on education, % GDP
1	7.1.2	Trademarks by origin/bn PPP\$ GDP	111	1.3.1	Policy stability for doing business <sup>†</sup>
2	2.2.1	Tertiary enrolment, % gross	110	5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP
3	2.1.3	School life expectancy, years	109	1.1.1	Operational stability for businesses*
9	7.1.1	Intangible asset intensity, top 15, %	98	2.2.2	Graduates in science and engineering, %
9	4.3.2	Domestic industry diversification	97	5.3.3	ICT services imports, % total trade
9	6.1.3	Utility models by origin/bn PPP\$ GDP	93	6.3.4	ICT services exports, % total trade
11	4.3.3	Domestic market scale, bn PPP\$	82	7.2.1	Cultural and creative services exports, % total trade
14	6.2.1	Labor productivity growth, %	78	2.1.2	Government funding/pupil, secondary, % GDP/cap
15	3.1.1	ICT access*	51	7.2.3	Entertainment and media market/th pop. 15–69



## Türkiye's innovation system

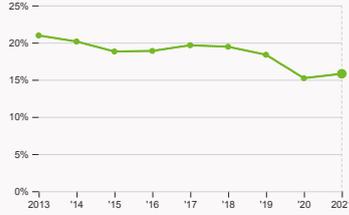
As far as practicable, the plots below present unscaled indicator data.

### › Innovation inputs in Türkiye



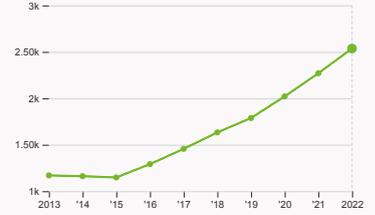
#### 2.1.1 Expenditure on education

was equal to 2.62 % GDP in 2022, down by 0.23 percentage points from the year prior – and equivalent to an indicator rank of 111.



#### 2.2.2 Graduates in science and engineering

was equal to 15.8 % of total graduates in 2021, up by 0.59 percentage points from the year prior – and equivalent to an indicator rank of 98.



#### 2.3.1 Researchers

was equal to 2536.07 FTE per million population in 2022, up by 11.74% from the year prior – and equivalent to an indicator rank of 37.



#### 2.3.2 Gross expenditure on R&D

was equal to 1.32 % GDP in 2022, down by 0.08 percentage points from the year prior – and equivalent to an indicator rank of 33.



#### 2.3.4 QS university ranking

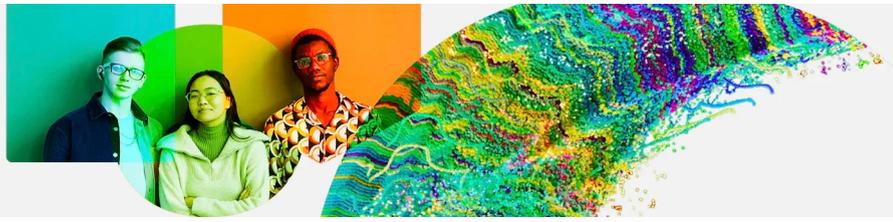
was equal to an average score of 28.67 for the top three universities in 2023, up by 19.11% from the year prior – and equivalent to an indicator rank of 43.



#### 4.2.4 VC received, value

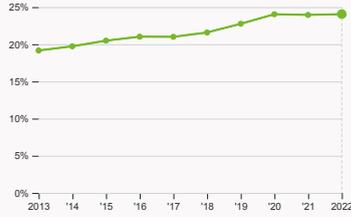
was equal to 309.07 thousand USD in 2023, down by 79.61% from the year prior – and equivalent to an indicator rank of 36.

# Global Innovation Index 2024



### 4.3.2 Domestic industry diversification

was equal to an index score of 0.08 in 2022, up by 1.75% from the year prior – and equivalent to an indicator rank of 9.



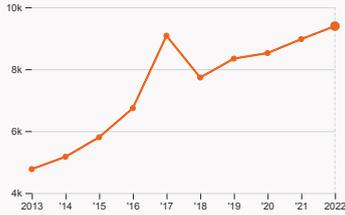
### 5.1.1 Knowledge-intensive employment

was equal to 24.06 % in 2022, up by 0.11 percentage points from the year prior – and equivalent to an indicator rank of 62.

# Global Innovation Index 2024

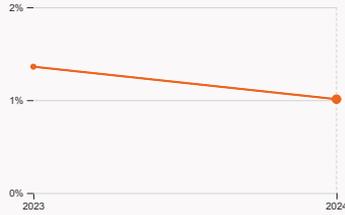


## > Innovation outputs in Türkiye



### 6.1.1 Patents by origin

was equal to 9.39 thousand patents in 2022, up by 4.68% from the year prior – and equivalent to an indicator rank of 25.



### 6.2.2 Unicorn valuation

was equal to 1.01 % GDP in 2024, down by 0.35 percentage points from the year prior – and equivalent to an indicator rank of 32.



### 6.2.4 High-tech manufacturing

was equal to 27.81 % of total manufacturing output in 2022, down by 0.74 percentage points from the year prior – and equivalent to an indicator rank of 43.



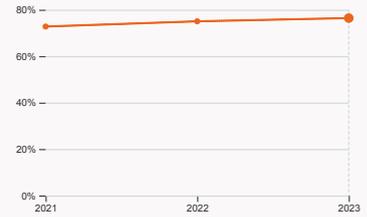
### 6.3.2 Production and export complexity

was equal to a score of 0.61 in 2021, down by 1.61% from the year prior – and equivalent to an indicator rank of 40.



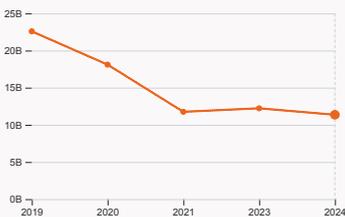
### 6.3.3 High-tech exports

was equal to 7.04 billion USD in 2022, up by 4.14% from the year prior – and equivalent to an indicator rank of 65.



### 7.1.1 Intangible asset intensity

was equal to 76.43 % for the top 15 companies in 2023, up by 1.39 percentage points from the year prior – and equivalent to an indicator rank of 9.



### 7.1.3 Global brand value

was equal to 11.35 billion USD for the brands in the top 5,000 in 2024, down by 7.12% from the year prior – and equivalent to an indicator rank of 57.



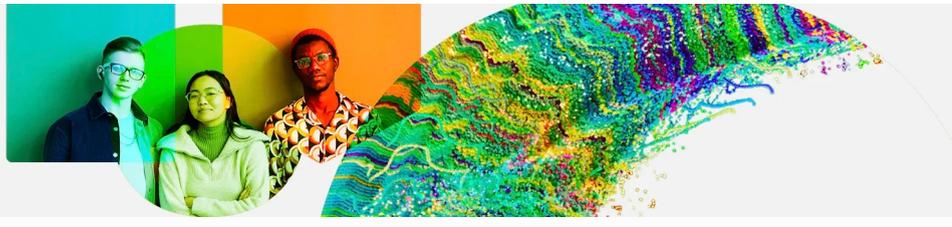
### 7.2.2 National feature films

was equal to 189 films in 2022, up by 142.31% from the year prior – and equivalent to an indicator rank of 44.



### 7.3.3 Mobile app creation

was equal to 2.96 billion global downloads of mobile apps in 2023, down by 8.92% from the year prior – and equivalent to an indicator rank of 24.



## Türkiye's innovation top performers

### 2.3.3 Global corporate R&D investors from Türkiye

Rank	Firm	Industry	R&D	R&D Growth	R&D Intensity
			[mn EUR]	[%]	[%]
822	ASELSAN ELEKTRONIK SANAYI VE TICARET	Electronic & Electrical Equipment	215	97	12
924	TUSAS TURK HAVACILIK VE UZAY SANAYII	Aerospace & Defence	188	93	12
1013	FORD OTOMOTIV	Automobiles & Parts	169	151	2
1227	KOC	General Industrials	136	102	0.3

Source: European Commission's Joint Research Centre (<https://iri.jrc.ec.europa.eu/scoreboard/2022-eu-industrial-rd-investment-scoreboard>).  
Note: European Commission's Joint Research Centre ranks the top 2,500 firms by R&D investment annually.

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

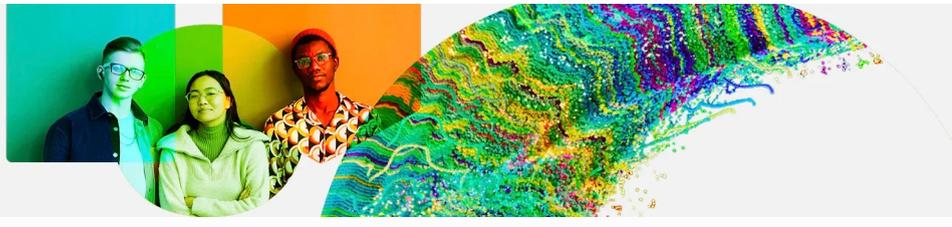
Rank	University	Score
336	MIDDLE EAST TECHNICAL UNIVERSITY	32.20
404	ISTANBUL TECHNICAL UNIVERSITY	27.60
431	KOC UNIVERSITY	26.20

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".

### 6.2.2 Top Unicorn Companies in Türkiye

Rank	Unicorn Company	Industry	City	Valuation, bn USD
1	GETIR	Consumer & Retail	Istanbul	9
2	DREAM GAMES	Media & Entertainment	Istanbul	3
3	INSIDER	Enterprise Tech	Istanbul	2

Source: CBInsights, Tracker – The Complete List of Unicorn Companies: <https://www.cbinsights.com/research-unicorn-companies>



## 7.1.1 Top 15 intangible-asset intensive companies in Türkiye

Rank	Firm	Intensity, %
1	FORD OTOMOTIV SANAYI A.S.	82.63
2	KOC HOLDING A.S.	29.15
3	TURKIYE PETROL RAFINERILERI A.S.	61.83

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 Türkiye with highest global brand value

Rank	Brand	Industry	Brand Value, mn USD
1	TURKISH AIRLINES	Airlines	1,985.1
2	ARCELIK	Electronics	870.6
3	ISBANK	Banking	858.9

Source: Brand Finance (<https://brandirectory.com>).

Note: Rank corresponds to within economy ranks.

# Global Innovation Index 2024

## Türkiye

GII 2024 rank

37

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
28	51	Upper middle	NAWA	87.3	3,613.5	41,887.5
			Score / Value Rank	Score / Value Rank		

### Institutions

<b>1.1 Institutional environment</b>	40.4	97	○
1.1.1 Operational stability for businesses*	42	109	○◇
1.1.2 Government effectiveness*	38.8	81	
<b>1.2 Regulatory environment</b>	33.1	90	
1.2.1 Regulatory quality*	35.4	86	
1.2.2 Rule of law*	30.7	90	
<b>1.3 Business environment</b>	26.5	108	○
1.3.1 Policy stability for doing business*	25.6	111	○
1.3.2 Entrepreneurship policies and culture*	27.3	56	●

### Human capital and research

<b>2.1 Education</b>	50.7	67	
2.1.1 Expenditure on education, % GDP	2.6	111	○◇
2.1.2 Government funding/pupil, secondary, % GDP/cap	12.9	78	○
2.1.3 School life expectancy, years	19.7	3	●◆
2.1.4 PISA scales in reading, maths and science	461.7	38	◆
2.1.5 Pupil-teacher ratio, secondary	15.3	82	●
<b>2.2 Tertiary education</b>	37.4	48	
2.2.1 Tertiary enrolment, % gross	125.8	2	●◆
2.2.2 Graduates in science and engineering, %	15.8	98	○
2.2.3 Tertiary inbound mobility, %	2.7	70	●
<b>2.3 Research and development (R&amp;D)</b>	31.8	32	◆
2.3.1 Researchers, FTE/mn pop.	2,536.1	37	◆
2.3.2 Gross expenditure on R&D, % GDP	1.3	33	◆
2.3.3 Global corporate R&D investors, top 3, mn USD	51	28	◆
2.3.4 QS university ranking, top 3*	29	43	

### Infrastructure

<b>3.1 Information and communication technologies (ICTs)</b>	85.6	23	◆
3.1.1 ICT access*	99.8	15	●◆
3.1.2 ICT use*	80.1	53	
3.1.3 Government's online service*	84.5	24	◆
3.1.4 E-participation*	77.9	18	◆
<b>3.2 General infrastructure</b>	41.4	33	◆
3.2.1 Electricity output, GWh/mn pop.	3,836.3	57	
3.2.2 Logistics performance*	59.1	37	◆
3.2.3 Gross capital formation, % GDP	30.3	24	◆
<b>3.3 Ecological sustainability</b>	23.7	53	
3.3.1 GDP/unit of energy use	18.2	15	◆
3.3.2 Low-carbon energy use, %	18.8	59	
3.3.3 ISO 14001 environment/bn PPP\$ GDP	1.1	69	

### Market sophistication

<b>4.1 Credit</b>	36.7	39	
4.1.1 Finance for startups and scaleups*	55.3	32	●
4.1.2 Domestic credit to private sector, % GDP	54.5	57	
4.1.3 Loans from microfinance institutions, % GDP	n/a	n/a	
<b>4.2 Investment</b>	10.7	58	
4.2.1 Market capitalization, % GDP	28.7	50	
4.2.2 Venture capital (VC) investors, deals/bn PPP\$ GDP	0.04	71	
4.2.3 VC recipients, deals/bn PPP\$ GDP	0.03	66	
4.2.4 VC received, value, % GDP	0.002	36	
<b>4.3 Trade, diversification and market scale</b>	82.7	11	●◆
4.3.1 Applied tariff rate, weighted avg., %	2.5	72	
4.3.2 Domestic industry diversification	96.4	9	●◆
4.3.3 Domestic market scale, bn PPP\$	3,613.5	11	●◆

### Business sophistication

<b>5.1 Knowledge workers</b>	38.9	52	
5.1.1 Knowledge-intensive employment, %	24.1	62	
5.1.2 Firms offering formal training, %	30.7	56	●
5.1.3 GERD performed by business, % GDP	0.8	28	◆
5.1.4 GERD financed by business, %	50.2	29	◆
5.1.5 Females employed w/advanced degrees, %	12.3	63	
<b>5.2 Innovation linkages</b>	20.9	79	
5.2.1 Public Research-Industry co-publications, %	1.4	70	
5.2.2 University-industry R&D collaboration*	36.6	87	
5.2.3 State of cluster development*	45.4	70	
5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.004	110	○
5.2.5 Patent families/bn PPP\$ GDP	0.3	40	
<b>5.3 Knowledge absorption</b>	33.5	48	
5.3.1 Intellectual property payments, % total trade	0.9	40	
5.3.2 High-tech imports, % total trade	7.5	75	
5.3.3 ICT services imports, % total trade	0.8	97	○
5.3.4 FDI net inflows, % GDP	1.4	91	
5.3.5 Research talent, % in businesses	61.6	11	◆

### Knowledge and technology outputs

<b>6.1 Knowledge creation</b>	29.5	34	◆
6.1.1 Patents by origin/bn PPP\$ GDP	2.8	25	◆
6.1.2 PCT patents by origin/bn PPP\$ GDP	0.5	32	
6.1.3 Utility models by origin/bn PPP\$ GDP	1.6	9	●◆
6.1.4 Scientific and technical articles/bn PPP\$ GDP	12	58	
6.1.5 Citable documents H-index	29.4	33	◆
<b>6.2 Knowledge impact</b>	39.7	24	◆
6.2.1 Labor productivity growth, %	2.8	14	●◆
6.2.2 Unicorn valuation, % GDP	1	32	
6.2.3 Software spending, % GDP	0.4	25	◆
6.2.4 High-tech manufacturing, %	27.8	43	
<b>6.3 Knowledge diffusion</b>	16.5	70	
6.3.1 Intellectual property receipts, % total trade	0.1	55	
6.3.2 Production and export complexity	58.5	40	
6.3.3 High-tech exports, % total trade	1.9	65	
6.3.4 ICT services exports, % total trade	0.7	93	○
6.3.5 ISO 9001 quality/bn PPP\$ GDP	2.8	80	

### Creative outputs

<b>7.1 Intangible assets</b>	74	4	●◆
7.1.1 Intangible asset intensity, top 15, %	76.4	9	●◆
7.1.2 Trademarks by origin/bn PPP\$ GDP	133.2	1	●◆
7.1.3 Global brand value, top 5,000, % GDP	0.8	57	
7.1.4 Industrial designs by origin/bn PPP\$ GDP	23.4	1	●◆
<b>7.2 Creative goods and services</b>	15.4	63	
7.2.1 Cultural and creative services exports, % total trade	0.2	82	○
7.2.2 National feature films/mn pop. 15-69	3	44	
7.2.3 Entertainment and media market/th pop. 15-69	2.3	51	○◇
7.2.4 Creative goods exports, % total trade	2.9	21	
<b>7.3 Online creativity</b>	29.6	54	
7.3.1 Top-level domains (TLDs)/th pop. 15-69	6.7	51	
7.3.2 GitHub commits/mn pop. 15-69	7.3	65	
7.3.3 Mobile app creation/bn PPP\$ GDP	74.8	24	

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 Türkiye.



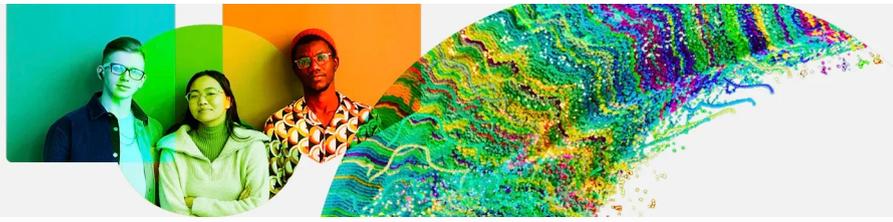
Türkiye has missing data for one indicator and outdated data for seven indicators.

### Missing data for Türkiye

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 Türkiye

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture <sup>†</sup>	2021	2023	Global Entrepreneurship Monitor
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
4.1.1	Finance for startups and scaleups <sup>†</sup>	2021	2023	Global Entrepreneurship Monitor
5.1.2	Firms offering formal training, %	2019	2023	World Bank Enterprise Surveys



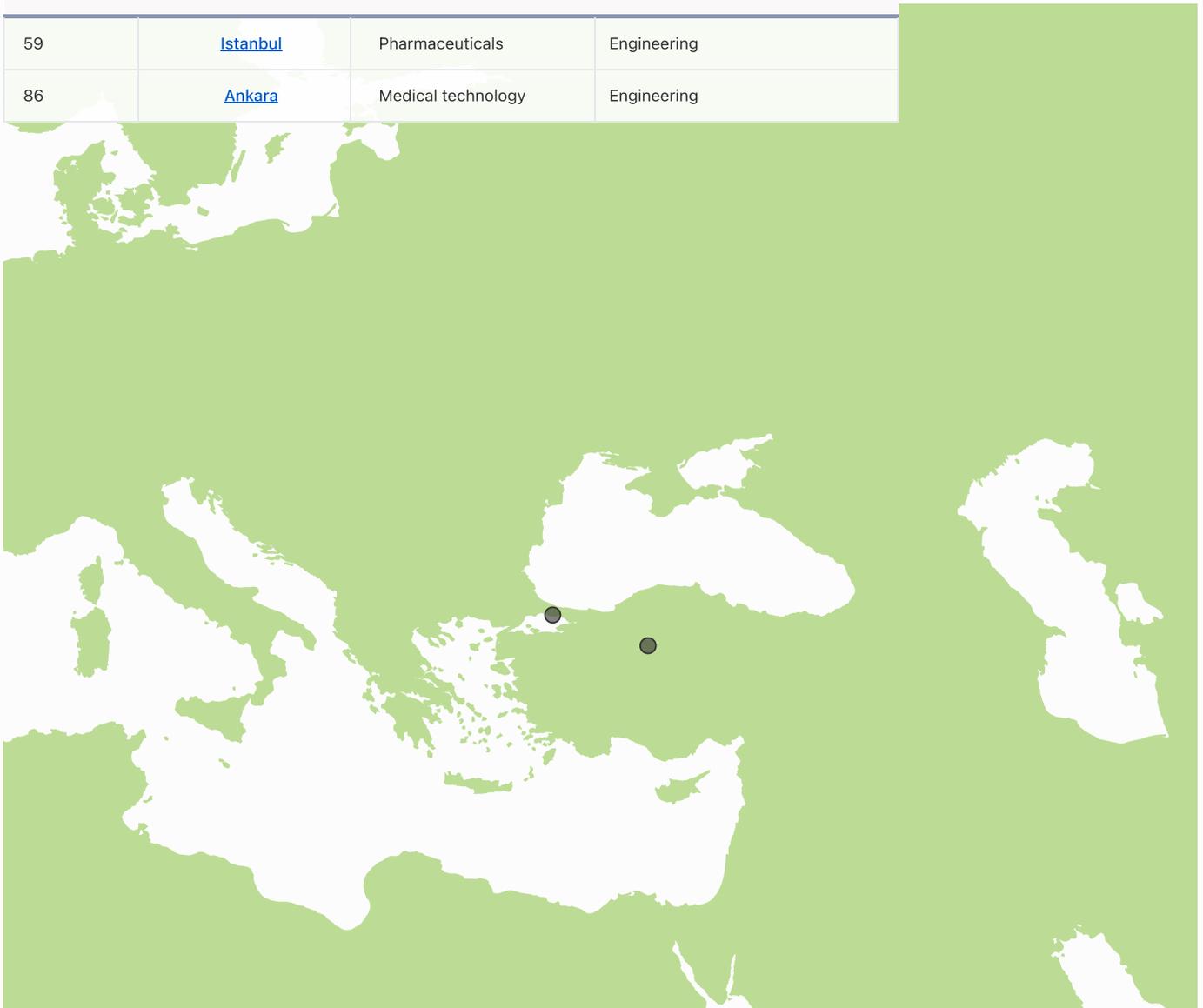
## Top science and technology clusters in Türkiye



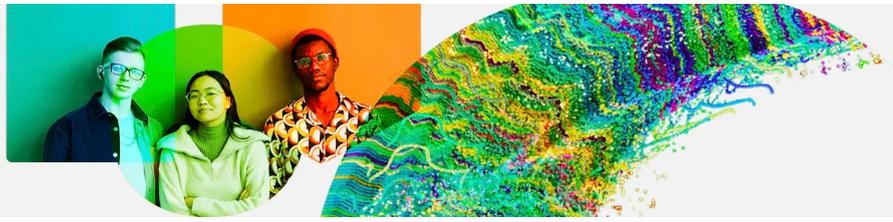
Türkiye has 2 clusters in the top 100 S&T clusters of the Global Innovation Index, the same number as in 2023.

The table and map below give an overview of the top science and technology clusters in Türkiye.

Rank	Cluster name	Top patent field	Top academic subject
59	<a href="#">Istanbul</a>	Pharmaceuticals	Engineering
86	<a href="#">Ankara</a>	Medical technology	Engineering

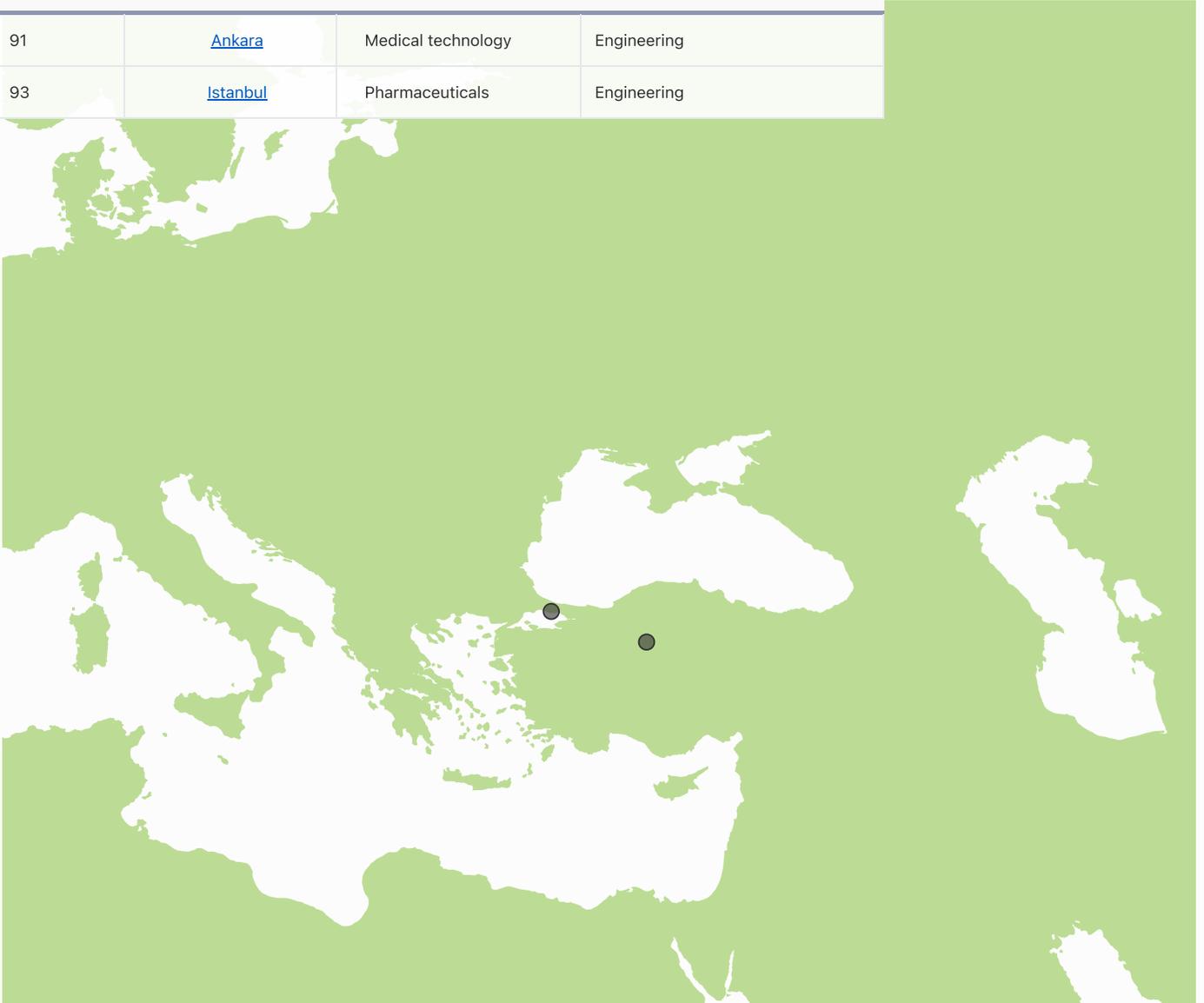


# Global Innovation Index 2024

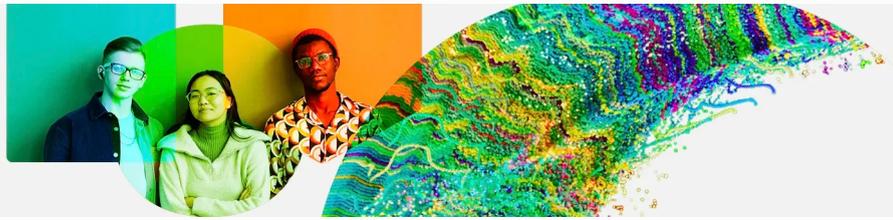


The table and map below give an overview of the top science and technology clusters by intensity in Türkiye.

Rank	Cluster name	Top patent field	Top academic subject
91	<a href="#">Ankara</a>	Medical technology	Engineering
93	<a href="#">Istanbul</a>	Pharmaceuticals	Engineering

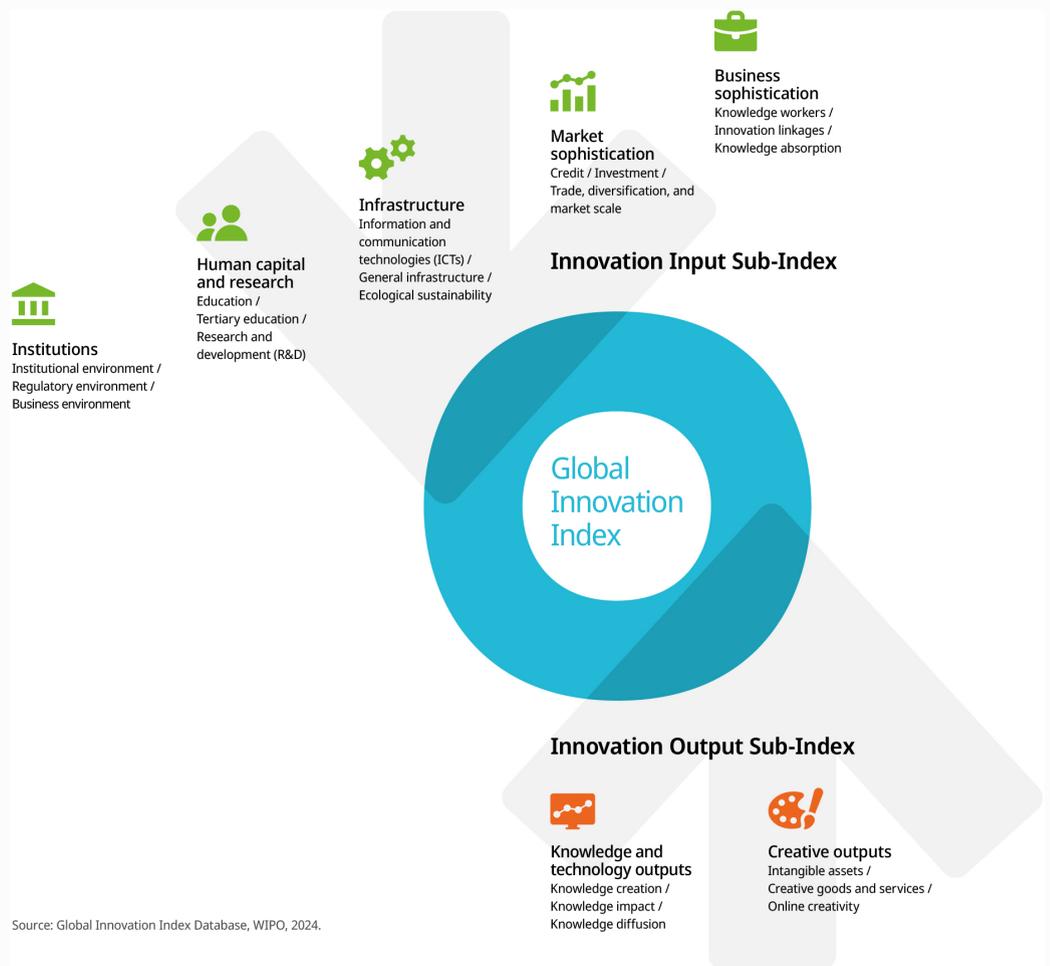


# Global Innovation Index 2024



## 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.