

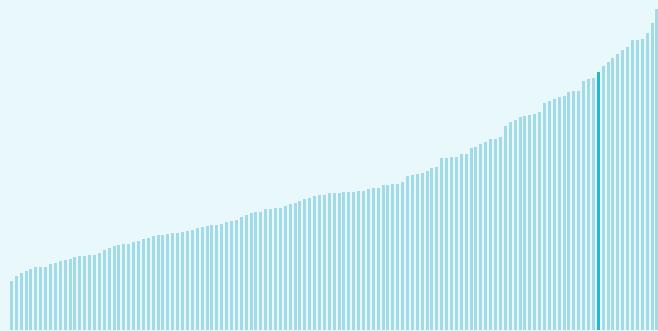
# Global Innovation Index 2024



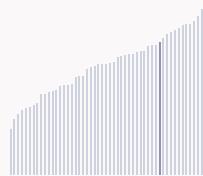
## Japan ranking in the Global Innovation Index 2024

Japan ranks **13th** among the 133 economies featured in the GII 2024.

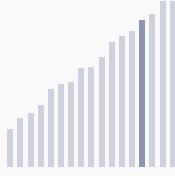
The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.



Japan ranks **12th** among the 51 high-income group economies.



Japan ranks **4th** among the 17 economies in South East Asia, East Asia, and Oceania.



### ➤ Japan GII Ranking (2020-2024)

The table shows the rankings of Japan 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 Japan in the GII 2024 is between ranks 12 and 13.

| Year | GII Position | Innovation Inputs | Innovation Outputs |
|------|--------------|-------------------|--------------------|
| 2020 | 16th         | 12th              | 18th               |
| 2021 | 13th         | 11th              | 14th               |
| 2022 | 13th         | 11th              | 12th               |
| 2023 | 13th         | 11th              | 14th               |
| 2024 | 13th         | 12th              | 14th               |

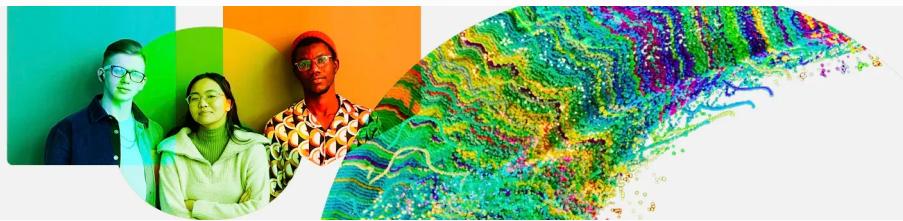
Japan performs worse in innovation outputs than innovation inputs in 2024.

This year Japan ranks 12th in innovation inputs. This position is lower than last year.

Japan ranks 14th in innovation outputs. This position is the same as last year.

Japan has 3 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 Japan, how rapidly is technology being embraced and what are the resulting societal impacts.



For Japan, 7 indicators have improved in the short-term and 6 indicators have worsened.

### Science and innovation investment

| Scientific publications | R&D investments       | Venture capital         |                         | International patent filings |
|-------------------------|-----------------------|-------------------------|-------------------------|------------------------------|
|                         |                       | Deal numbers            | Deal values             |                              |
| ▼ -8.2%<br>2022 - 2023  | ▲ 4.7%<br>2021 - 2022 | ▼ -17.3%<br>2022 - 2023 | ▼ -23.8%<br>2022 - 2023 | ▼ -2.9%<br>2022 - 2023       |
| ▲ 0.3%<br>2013 - 2023   | ▲ 1.2%<br>2012 - 2022 | ▲ 22.1%<br>2013 - 2023  | ▲ 22%<br>2013 - 2023    | ▲ 1.1%<br>2013 - 2023        |

### Technology adoption

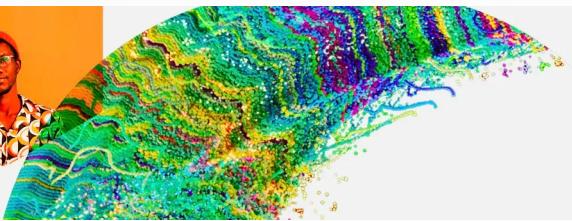
| Safe sanitation                     | Connectivity                        |                                     | Robots                | Electric vehicles                  |
|-------------------------------------|-------------------------------------|-------------------------------------|-----------------------|------------------------------------|
|                                     | Fixed broadband                     | 5G                                  |                       |                                    |
| ▲ 0.1%<br>2021 - 2022               | ▲ 2.5%<br>2021 - 2022               | ▲ 3.6%<br>2021 - 2022               | ▲ 5.3%<br>2021 - 2022 | ▲ 31.7%<br>2022 - 2023             |
| ▲ 0.1%<br>2012 - 2022               | ▲ 2.8%<br>2012 - 2022               |                                     | ▲ 2.9%<br>2012 - 2022 | ▲ 22.8%<br>2013 - 2023             |
| 99.1<br>per 100 inhabitants in 2022 | 37.2<br>per 100 inhabitants in 2022 | 96.6<br>per 100 inhabitants in 2022 |                       | 0.8<br>per 100 inhabitants in 2023 |

### Socioeconomic impact

| Labor productivity    | Life expectancy        | Temperature change |
|-----------------------|------------------------|--------------------|
| ▲ 1.7%<br>2022 - 2023 | ▼ -0.5%<br>2021 - 2022 | ▲ 1.8°C<br>2023    |
| ▲ 0.7%<br>2013 - 2023 | ▲ 0.1%<br>2012 - 2022  | n/a                |
| 94,877<br>USD in 2023 | 84<br>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.

# Global Innovation Index 2024



## 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.

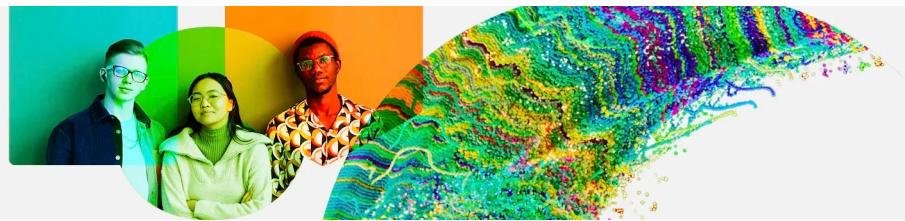


Japan is an innovation leader, ranking in the top 25 of the GII.

> Innovation overperformers relative to their economic development



# Global Innovation Index 2024



## 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.

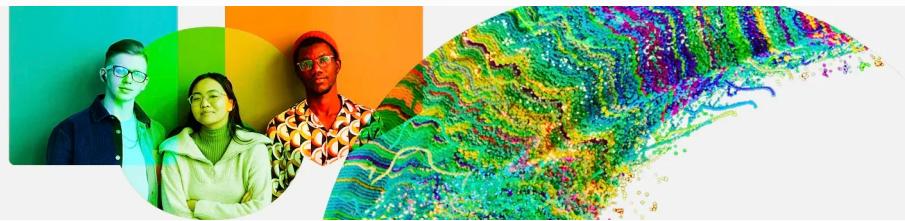


Japan produces more innovation outputs relative to its level of innovation investments.

### > Relationship between innovation inputs and outputs

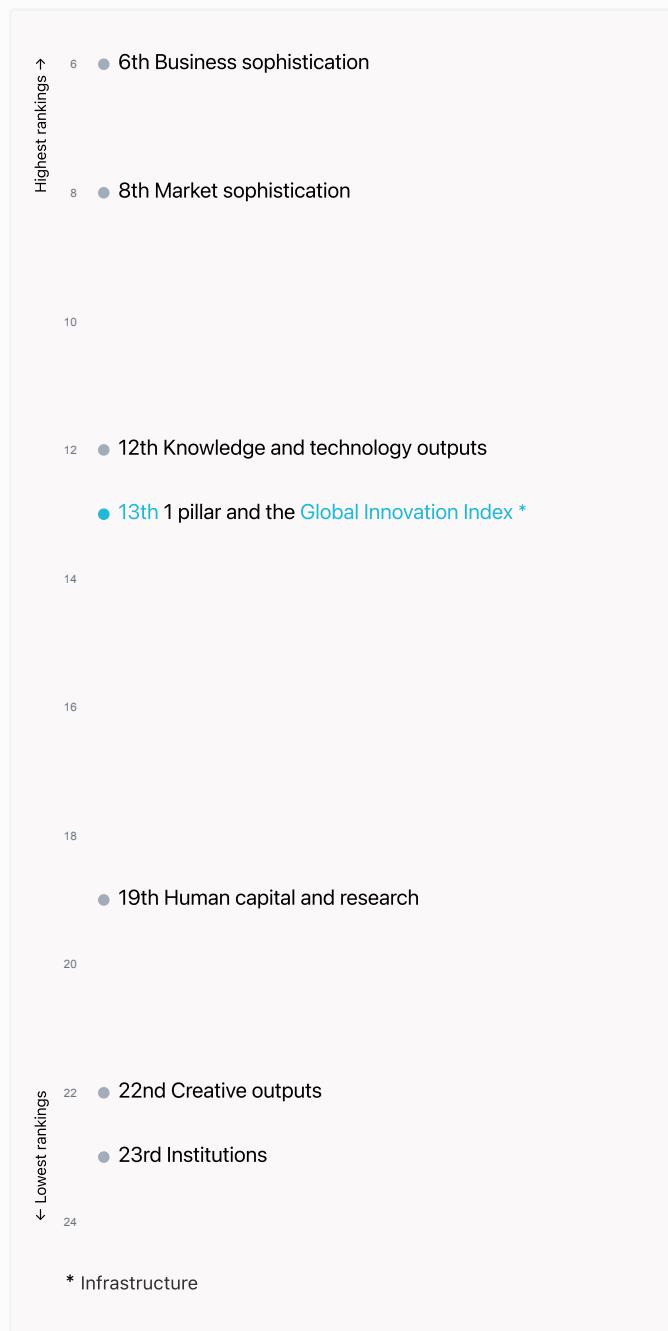


# Global Innovation Index 2024



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



### Highest rankings

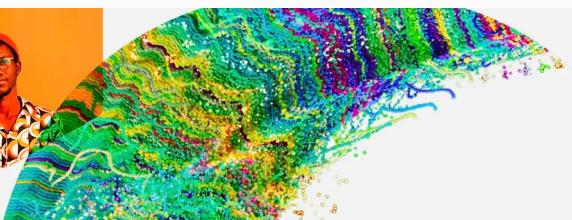
Japan ranks highest in Business sophistication (6th), Market sophistication (8th), Knowledge and technology outputs (12th) and Infrastructure (13th).

### Lowest rankings

Japan ranks lowest in Institutions (23rd), Creative outputs (22nd) and Human capital and research (19th).

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

# Global Innovation Index 2024



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

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



### High-Income economies

Japan performs above the high-income group average in all pillars.



### South East Asia, East Asia, And Oceania

Japan performs above the regional average in all pillars.

#### Institutions

Top 10 | Score: 80.81

Japan | Score: 71.17

High income | Score: 67.41

SEAO | Score: 59.26

#### Human capital and research

Top 10 | Score: 61.30

Japan | Score: 52.85

High income | Score: 46.99

SEAO | Score: 39.09

#### Infrastructure

Top 10 | Score: 58.57

Japan | Score: 56.29

High income | Score: 51.96

SEAO | Score: 45.67

#### Market sophistication

Top 10 | Score: 62.12

Japan | Score: 61.46

SEAO | Score: 45.28

High income | Score: 44.90

#### Business sophistication

Top 10 | Score: 63.64

Japan | Score: 62.52

High income | Score: 44.71

SEAO | Score: 39.01

#### Knowledge and technology outputs

Top 10 | Score: 57.29

Japan | Score: 49.71

High income | Score: 35.79

SEAO | Score: 29.72

#### Creative outputs

Top 10 | Score: 56.54

Japan | Score: 45.07

High income | Score: 39.44

SEAO | Score: 33.06

# Global Innovation Index 2024



## Innovation strengths and weaknesses in Japan

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



Japan's main innovation strengths are **Domestic market scale, bn PPP\$ (rank 1)**, **Production and export complexity (rank 1)** and **E-participation\* (rank 1)**.

### Strengths

### Weaknesses

| Rank | Code  | Indicator name                                | Rank | Code  | Indicator name  |
|------|-------|---|------|-------|---|
| 1    | 4.3.3 | Domestic market scale, bn PPP\$               | 98   | 5.3.4 | FDI net inflows, % GDP                                |
| 1    | 6.3.2 | Production and export complexity              | 95   | 6.2.1 | Labor productivity growth, %                          |
| 1    | 3.1.4 | E-participation*                              | 92   | 2.1.1 | Expenditure on education, % GDP                       |
| 1    | 6.3.1 | Intellectual property receipts, % total trade | 81   | 6.3.4 | ICT services exports, % total trade                   |
| 1    | 6.1.2 | PCT patents by origin/bn PPP\$ GDP            | 80   | 2.2.2 | Graduates in science and engineering, %               |
| 1    | 5.2.1 | Public Research-Industry co-publications, %   | 74   | 5.1.1 | Knowledge-intensive employment, %                     |
| 2    | 5.1.4 | GERD financed by business, %                  | 72   | 3.3.2 | Low-carbon energy use, %                              |
| 3    | 4.1.2 | Domestic credit to private sector, % GDP      | 64   | 1.3.2 | Entrepreneurship policies and culture <sup>†</sup>    |
| 3    | 5.2.5 | Patent families/bn PPP\$ GDP                  | 59   | 7.2.1 | Cultural and creative services exports, % total trade |
| 3    | 6.1.1 | Patents by origin/bn PPP\$ GDP                | 53   | 4.2.4 | VC received, value, % GDP                             |
| 3    | 2.1.4 | PISA scales in reading, maths and science     |      |       |   |
| 4    | 5.1.3 | GERD performed by business, % GDP             |      |       |   |

# Global Innovation Index 2024

## Japan's innovation system

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

### › Innovation inputs in Japan



#### 2.1.1 Expenditure on education

was equal to 3.46 % GDP in 2021, up by 0.15 percentage points from the year prior – and equivalent to an indicator rank of 92.



#### 2.2.2 Graduates in science and engineering

was equal to 19.5 % of total graduates in 2021, up by 0.02 percentage points from the year prior – and equivalent to an indicator rank of 80.



#### 2.3.1 Researchers

was equal to 5646.8 FTE per million population in 2022, up by 0.59% from the year prior – and equivalent to an indicator rank of 14.



#### 2.3.2 Gross expenditure on R&D

was equal to 3.41 % GDP in 2022, up by 0.13 percentage points from the year prior – and equivalent to an indicator rank of 6.



#### 2.3.4 QS university ranking

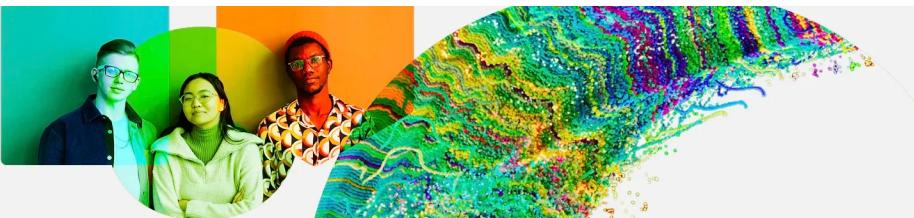
was equal to an average score of 74.83 for the top three universities in 2023, down by 6.15% from the year prior – and equivalent to an indicator rank of 9.



#### 4.2.4 VC received, value

was equal to 3.39 million USD in 2023, down by 23.82% from the year prior – and equivalent to an indicator rank of 53.

# Global Innovation Index 2024



## 4.3.2 Domestic industry diversification

was equal to an index score of 0.11 in 2020, down by 1.41% from the year prior – and equivalent to an indicator rank of 31.



## 5.1.1 Knowledge-intensive employment

was equal to 20.88 % in 2023, up by 0.04 percentage points from the year prior – and equivalent to an indicator rank of 74.

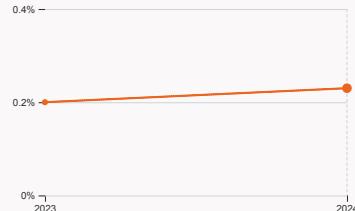
# Global Innovation Index 2024

## › Innovation outputs in Japan



### 6.1.1 Patents by origin

was equal to 218.81 thousand patents in 2022, down by 1.64% from the year prior – and equivalent to an indicator rank of 3.



### 6.2.2 Unicorn valuation

was equal to 0.23 % GDP in 2024, up by 0.03 percentage points from the year prior – and equivalent to an indicator rank of 45.



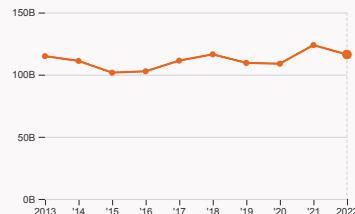
### 6.2.4 High-tech manufacturing

was equal to 54.63 % of total manufacturing output in 2020, up by 0.04 percentage points from the year prior – and equivalent to an indicator rank of 9.



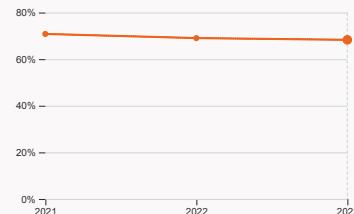
### 6.3.2 Production and export complexity

was equal to a score of 2.26 in 2021, down by 5.44% from the year prior – and equivalent to an indicator rank of 1.



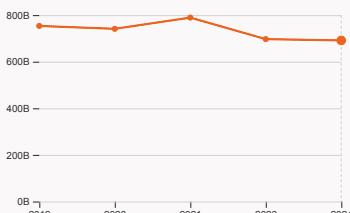
### 6.3.3 High-tech exports

was equal to 116.22 billion USD in 2022, down by 6.12% from the year prior – and equivalent to an indicator rank of 15.



### 7.1.1 Intangible asset intensity

was equal to 68.29 % for the top 15 companies in 2023, down by 0.74 percentage points from the year prior – and equivalent to an indicator rank of 21.



### 7.1.3 Global brand value

was equal to 691.25 billion USD for the brands in the top 5,000 in 2024, down by 0.8% from the year prior – and equivalent to an indicator rank of 7.



### 7.2.2 National feature films

was equal to 634 films in 2022, up by 29.39% from the year prior – and equivalent to an indicator rank of 13.



### 7.3.3 Mobile app creation

was equal to 3.25 billion global downloads of mobile apps in 2023 with no change from the year prior – and equivalent to an indicator rank of 41.

# Global Innovation Index 2024



## Japan's innovation top performers

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

| Rank | Firm         | Industry                  | R&D      | R&D Growth | R&D Intensity |
|------|--------------|---------------------------|----------|------------|---------------|
|      |              |                           | [mn EUR] | [%]        | [%]           |
| 16   | TOYOTA MOTOR | Automobiles & Parts       | 8,776    | 10         | 3             |
| 33   | HONDA MOTOR  | Automobiles & Parts       | 6,221    | 7          | 5             |
| 36   | NTT          | Mobile Telecommunications | 5,721    | 9          | 6             |
| 40   | SONY         | Leisure Goods             | 5,340    | 19         | 7             |

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 Japan's top universities

| Rank | University              | Score |
|------|-------------------------|-------|
| 28   | THE UNIVERSITY OF TOKYO | 84.30 |
| 46   | KYOTO UNIVERSITY        | 76.30 |
| 80   | OSAKA UNIVERSITY        | 63.90 |

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 Japan

| Rank | Unicorn Company    | Industry              | City  | Valuation, bn USD |
|------|--------------------|-----------------------|-------|-------------------|
| 1    | SMARTNEWS          | Media & Entertainment | Tokyo | 2                 |
| 1    | PREFERRED NETWORKS | Industrials           | Tokyo | 2                 |
| 3    | SMARTHR            | Enterprise Tech       | Tokyo | 2                 |

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

# Global Innovation Index 2024



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

| Rank | Firm                                  | Intensity, % |
|------|---------------------------------------|--------------|
| 1    | SOFTBANK CORP.                        | 74.87        |
| 2    | TAKEDA PHARMACEUTICAL COMPANY LIMITED | 84.96        |
| 3    | KEYENCE CORPORATION                   | 73.24        |

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 Japan with highest global brand value

| Rank | Brand            | Industry    | Brand Value, mn USD |
|------|------------------|-------------|---------------------|
| 1    | TOYOTA           | Automobiles | 52,672.6            |
| 2    | MITSUBISHI GROUP | Diversified | 35,546.5            |
| 3    | MITSUI           | Diversified | 32,491              |

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

Note: Rank corresponds to within economy ranks.

# Global Innovation Index 2024



GII 2024 rank

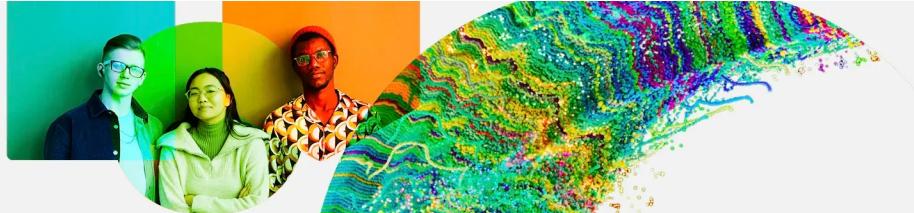
## Japan

13

| Output rank  | Input rank | Income | Region | Population (mn) | GDP, PPP\$ (bn) | GDP per capita, PPP\$                                       |            |
|--|------------|--------|--------|-----------------|-----------------|---|------------|
|  |            |        |        | Score / Value   | Rank            | Score / Value   | Rank       |
| 14   | 12         | High   | SEAO   | 124.4           | 6,495.2         | 52,119.6  |            |
| <b> Institutions</b>                                     |            |        |        | 71.2            | 23              | <b> Business sophistication</b>                             | 62.5 6 ●◆  |
| 1.1 Institutional environment                            |            |        |        | 86.5            | 9               | 5.1 Knowledge workers                                       | 66.8 16    |
| 1.1.1 Operational stability for businesses*              |            |        |        | 86.7            | 9               | 5.1.1 Knowledge-intensive employment, %                     | 20.9 74 ○◇ |
| 1.1.2 Government effectiveness*                          |            |        |        | 86.3            | 7               | 5.1.2 Firms offering formal training, %                     | n/a n/a    |
| <b> Regulatory environment</b>                           |            |        |        | 84.1            | 16              | 5.1.3 GERD performed by business, % GDP                     | 2.7 4 ●◆   |
| 1.2.1 Regulatory quality*                                |            |        |        | 79.6            | 17              | 5.1.4 GERD financed by business, %                          | 78.5 2 ●◆  |
| 1.2.2 Rule of law*                                       |            |        |        | 88.5            | 13              | 5.1.5 Females employed w/advanced degrees, %                | 22.9 23    |
| <b> Business environment</b>                             |            |        |        | 42.9            | 74 ○◇           | 5.2 Innovation linkages                                     | 61.7 9     |
| 1.3.1 Policy stability for doing business†               |            |        |        | 63.2            | 36              | 5.2.1 Public Research-Industry co-publications, %           | 9 1 ●◆     |
| 1.3.2 Entrepreneurship policies and culture†             |            |        |        | 22.7            | 64 ○◇           | 5.2.2 University-industry R&D collaboration†                | 66.8 31 ◇  |
| <b> Human capital and research</b>                       |            |        |        | 52.9            | 19              | 5.2.3 State of cluster development†                         | 66.4 36 ◇  |
| 2.1 Education  |            |        |        | 60.4            | 35              | 5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP   | 0.03 41 ◇  |
| 2.1.1 Expenditure on education, % GDP                    |            |        |        | 3.5             | 92 ○◇           | 5.2.5 Patent families/bn PPP\$ GDP                          | 12.6 3 ●◆  |
| 2.1.2 Government funding/pupil, secondary, % GDP/cap     |            |        |        | 24.8            | 21              | <b> Knowledge absorption</b>                                | 59.1 3 ●◆  |
| 2.1.3 School life expectancy, years                      |            |        |        | 15.4            | 45 ◇            | 5.3.1 Intellectual property payments, % total trade         | 3.2 7      |
| 2.1.4 PISA scales in reading, maths and science          |            |        |        | 532.7           | 3 ●◆            | 5.3.2 High-tech imports, % total trade                      | 16.3 14    |
| 2.1.5 Pupil-teacher ratio, secondary                     |            |        |        | 10.6            | 36              | 5.3.3 ICT services imports, % total trade                   | 2.3 25     |
| <b> Tertiary education</b>                               |            |        |        | 29.5            | 74 ○◇           | 5.3.4 FDI net inflows, % GDP                                | 1 98 ○     |
| 2.2.1 Tertiary enrolment, % gross                        |            |        |        | 63.2            | 50 ◇            | 5.3.5 Research talent, % in businesses                      | 75.2 5 ◇   |
| 2.2.2 Graduates in science and engineering, %            |            |        |        | 19.5            | 80 ○◇           | <b> Knowledge and technology outputs</b>                    | 49.7 12    |
| 2.2.3 Tertiary inbound mobility, %                       |            |        |        | 5.6             | 47              | 6.1 Knowledge creation                                      | 58.3 8     |
| <b> Research and development (R&amp;D)</b>               |            |        |        | 68.6            | 6 ●◆            | 6.1.1 Patents by origin/bn PPP\$ GDP                        | 35.6 3 ●◆  |
| 2.3.1 Researchers, FTE/mn pop.                           |            |        |        | 5,646.8         | 14              | 6.1.2 PCT patents by origin/bn PPP\$ GDP                    | 7.5 1 ●◆   |
| 2.3.2 Gross expenditure on R&D, % GDP                    |            |        |        | 3.4             | 6               | 6.1.3 Utility models by origin/bn PPP\$ GDP                 | 0.5 29     |
| 2.3.3 Global corporate R&D investors, top 3, mn USD      |            |        |        | 85.5            | 6               | 6.1.4 Scientific and technical articles/bn PPP\$ GDP        | 12 59 ◇    |
| 2.3.4 QS university ranking, top 3*                      |            |        |        | 75.7            | 9               | 6.1.5 Citable documents H-index                             | 66.6 10    |
| <b> Infrastructure</b>                                   |            |        |        | 56.3            | 13              | <b> 6.2 Knowledge impact</b>                                | 36.5 36    |
| 3.1 Information and communication technologies (ICTs)    |            |        |        | 93.5            | 8               | 6.2.1 Labor productivity growth, %                          | 0.005 95 ○ |
| 3.1.1 ICT access*  |            |        |        | 95.8            | 43              | 6.2.2 Unicorn valuation, % GDP                              | 0.2 45 ◇   |
| 3.1.2 ICT use*   |            |        |        | 88.4            | 23              | 6.2.3 Software spending, % GDP                              | 0.3 33     |
| 3.1.3 Government's online service*                       |            |        |        | 90              | 10              | 6.2.4 High-tech manufacturing, %                            | 54.6 9     |
| 3.1.4 E-participation*                                   |            |        |        | 100             | 1 ●◆            | <b> 6.3 Knowledge diffusion</b>                             | 54.3 9     |
| <b> General infrastructure</b>                           |            |        |        | 50              | 16              | 6.3.1 Intellectual property receipts, % total trade         | 5.1 1 ●◆   |
| 3.2.1 Electricity output, GWh/mn pop.                    |            |        |        | 8,035.1         | 18              | 6.3.2 Production and export complexity                      | 100 1 ●◆   |
| 3.2.2 Logistics performance*                             |            |        |        | 81.8            | 13              | 6.3.3 High-tech exports, % total trade                      | 11.7 15    |
| 3.2.3 Gross capital formation, % GDP                     |            |        |        | 26.3            | 42              | 6.3.4 ICT services exports, % total trade                   | 1 81 ○     |
| <b> Ecological sustainability</b>                        |            |        |        | 25.3            | 48              | 6.3.5 ISO 9001 quality/bn PPP\$ GDP                         | 6.7 40     |
| 3.3.1 GDP/unit of energy use                             |            |        |        | 13.5            | 40              | <b> 6.4 Creative outputs</b>                                | 45.1 22    |
| 3.3.2 Low-carbon energy use, %                           |            |        |        | 15              | 72 ○            | 7.1 Intangible assets                                       | 54.7 13    |
| 3.3.3 ISO 14001 environment/bn PPP\$ GDP                 |            |        |        | 3.6             | 27              | 7.1.1 Intangible asset intensity, top 15, %                 | 68.3 21    |
| <b> Market sophistication</b>                            |            |        |        | 61.5            | 8               | 7.1.2 Trademarks by origin/bn PPP\$ GDP                     | 42.6 41    |
| <b> Credit</b>   |            |        |        | 63.2            | 9               | 7.1.3 Global brand value, top 5,000, % GDP                  | 16.1 7     |
| 4.1.1 Finance for startups and scaleups†                 |            |        |        | 53.3            | 35 ◇            | 7.1.4 Industrial designs by origin/bn PPP\$ GDP             | 3.5 24     |
| 4.1.2 Domestic credit to private sector, % GDP           |            |        |        | 194.9           | 3 ●◆            | <b> 7.2 Creative goods and services</b>                     | 35.5 20    |
| 4.1.3 Loans from microfinance institutions, % GDP        |            |        |        | n/a             | n/a             | 7.2.1 Cultural and creative services exports, % total trade | 0.4 59 ○   |
| <b> Investment</b>                                       |            |        |        | 27.7            | 29              | 7.2.2 National feature films/mn pop. 15–69                  | 7.8 13     |
| 4.2.1 Market capitalization, % GDP                       |            |        |        | 129.8           | 10              | 7.2.3 Entertainment and media market/th pop. 15–69          | 59.8 8     |
| 4.2.2 Venture capital (VC) investors, deals/bn PPP\$ GDP |            |        |        | 0.2             | 31              | 7.2.4 Creative goods exports, % total trade                 | 1.7 29     |
| 4.2.3 VC recipients, deals/bn PPP\$ GDP                  |            |        |        | 0.1             | 22              | <b> 7.3 Online creativity</b>                               | 35.4 42 ◇  |
| 4.2.4 VC received, value, % GDP                          |            |        |        | 0.001           | 53 ○◇           | 7.3.1 Top-level domains (TLDs)/th pop. 15–69                | 9.9 41 ◇   |
| <b> Trade, diversification and market scale</b>          |            |        |        | 93.5            | 3 ●◆            | 7.3.2 GitHub commits/mn pop. 15–69                          | 24.6 40 ◇  |
| 4.3.1 Applied tariff rate, weighted avg., %              |            |        |        | 1.3             | 52              | 7.3.3 Mobile app creation/bn PPP\$ GDP                      | 71.8 41    |
| 4.3.2 Domestic industry diversification                  |            |        |        | 1               | 31              |   |            |
| 4.3.3 Domestic market scale, bn PPP\$                    |            |        |        | 6,495.2         | 1 ●◆            |   |            |

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.

# Global Innovation Index 2024



## Data availability

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



Japan has missing data for two indicators and outdated data for eight indicators.

### Missing data for Japan

| 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) |
| 5.1.2 | Firms offering formal training, %           | n/a          | 2023       | World Bank Enterprise Surveys                              |

### Outdated data for Japan

| 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  |
| 4.3.2 | Domestic industry diversification      | 2020         | 2021       | United Nations Industrial Development Organization (UNIDO), Industrial Statistics Database (INDSTAT) Rev.3 and 4 |
| 5.1.5 | Females employed w/advanced degrees, % | 2020         | 2023       | International Labour Organization  |
| 6.2.4 | High-tech manufacturing, %             | 2020         | 2021       | United Nations Industrial Development Organization   |

# Global Innovation Index 2024

## Top science and technology clusters in Japan



Japan has 3 clusters in the top 100 S&T clusters of the Global Innovation Index, 1 less than in 2023.

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

| Rank | Cluster name                     | Top patent field                        | Top academic subject |
|------|----------------------------------|---|----------------------|
| 1    | <a href="#">Tokyo–Yokohama</a>   | Computer technology                     | Physics              |
| 7    | <a href="#">Osaka–Kobe–Kyoto</a> | Electrical machinery, apparatus, energy | Chemistry            |
| 15   | <a href="#">Nagoya</a>           | Electrical machinery, apparatus, energy | Chemistry            |



# Global Innovation Index 2024

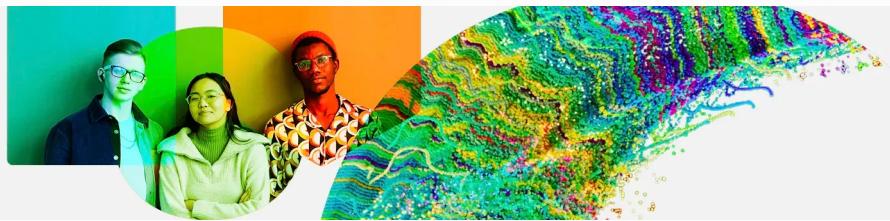


The table and map below give an overview of the top science and technology clusters by intensity in Japan.

| Rank | Cluster name                     | Top patent field                        | Top academic subject |
|------|----------------------------------|---|----------------------|
| 15   | <a href="#">Tokyo–Yokohama</a>   | Computer technology                     | Physics              |
| 29   | <a href="#">Osaka–Kobe–Kyoto</a> | Electrical machinery, apparatus, energy | Chemistry            |
| 37   | <a href="#">Nagoya</a>           | Electrical machinery, apparatus, energy | Chemistry            |

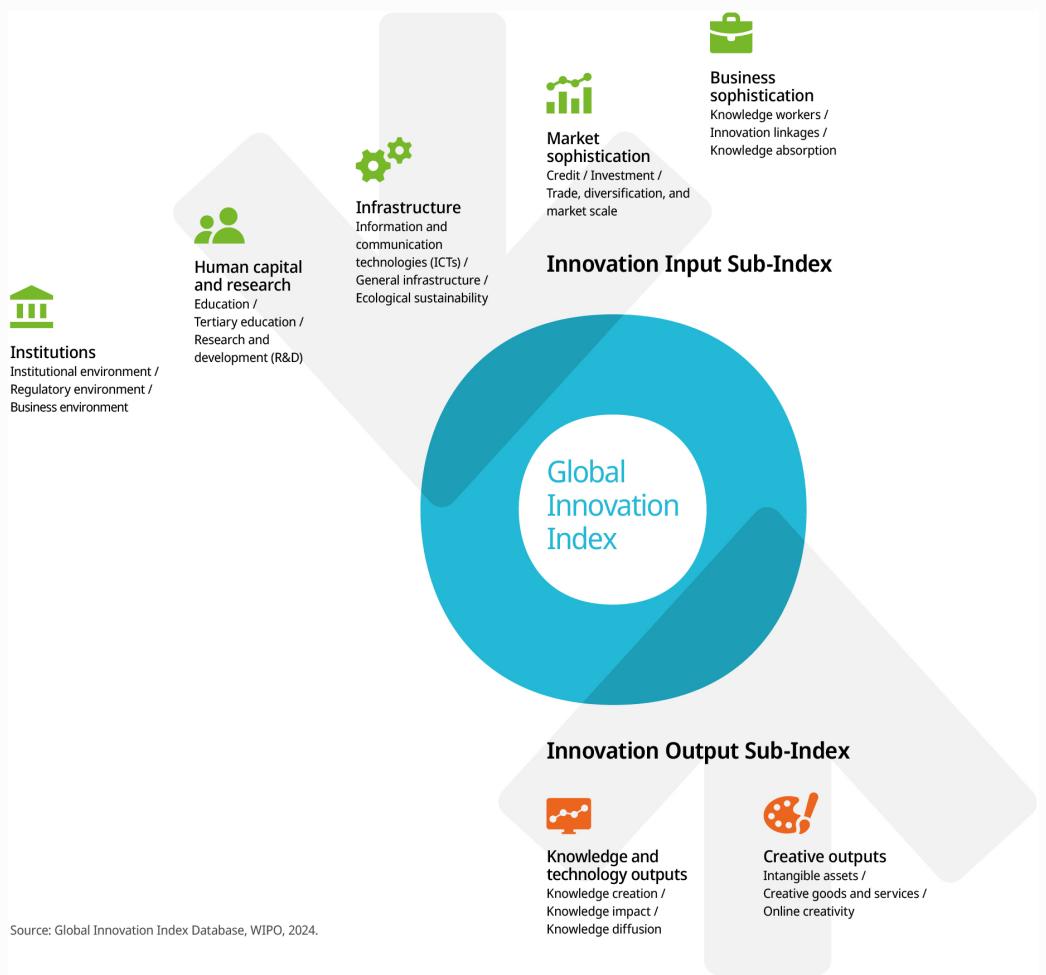


# Global Innovation Index 2024



## 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.