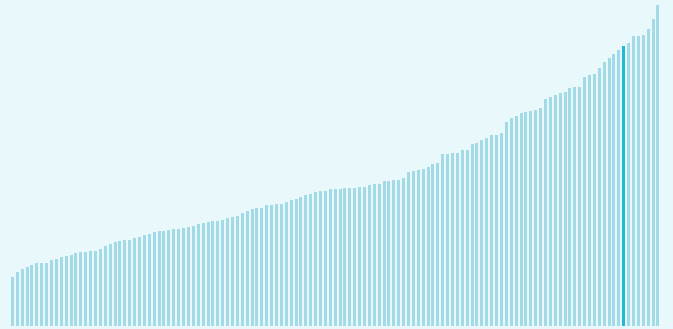


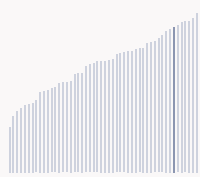
Netherlands (Kingdom of the) ranking in the Global Innovation Index 2024

Netherlands (Kingdom of the) ranks **8th** among the 133 economies featured in the GII 2024.

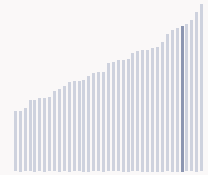
The Global Innovation Index (GI) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GI aims to capture the multi-dimensional facets of innovation.



Netherlands (Kingdom of the) ranks **8th** among the 51 high-income group economies.



Netherlands (Kingdom of the) ranks **5th** among the 39 economies in Europe.



> Netherlands (Kingdom of the) GII Ranking (2020-2024)

The table shows the rankings of Netherlands (Kingdom of the) 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 Netherlands (Kingdom of the) in the GII 2024 is between ranks 7 and 10.

Year	GI Position	Innovation Inputs	Innovation Outputs
2020	5th	11th	4th
2021	6th	12th	3rd
2022	5th	10th	6th
2023	7th	10th	5th
2024	8th	11th	8th

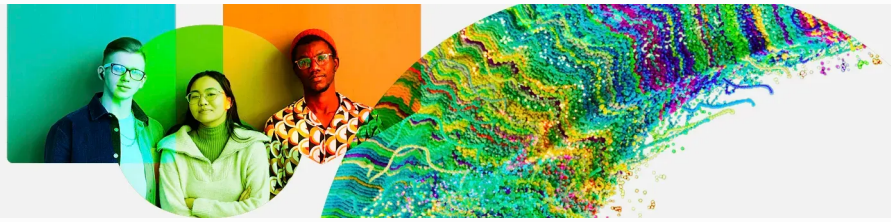
Netherlands (Kingdom of the) performs better in innovation outputs than innovation inputs in 2024.

This year Netherlands (Kingdom of the) ranks 11th in innovation inputs. This position is lower than last year.

Netherlands (Kingdom of the) ranks 8th in innovation outputs. This position is lower than last year.

Netherlands (Kingdom of the) 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 Netherlands (Kingdom of the), how rapidly is technology being embraced and what are the resulting societal impacts.



For Netherlands (Kingdom of the), 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	
▼ -5.2% 2022 - 2023	▲ 5.6% 2021 - 2022	▲ 48.4% 2022 - 2023	▼ -21.9% 2022 - 2023	▲ 5.8% 2022 - 2023
▲ 1.9% 2013 - 2023	▲ 3.8% 2012 - 2022	▲ 19.1% 2013 - 2023	▲ 28.9% 2013 - 2023	▲ 0.2% 2013 - 2023

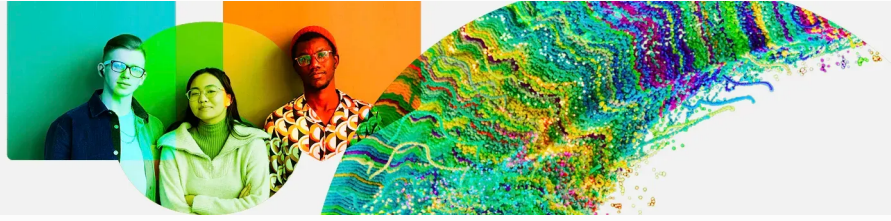
Technology adoption

Safe sanitation	Connectivity		Robots	Electric vehicles
	Fixed broadband	5G		
0% 2021 - 2022	▲ 2.1% 2021 - 2022	▲ 20.3% 2021 - 2022	▲ 12.5% 2021 - 2022	▲ 34.6% 2022 - 2023
0% 2012 - 2022	▲ 1.1% 2012 - 2022		▲ 11.2% 2012 - 2022	▲ 37.9% 2013 - 2023
97.5 per 100 inhabitants in 2022	44.4 per 100 inhabitants in 2022	99 per 100 inhabitants in 2022		8.3 per 100 inhabitants in 2023

Socioeconomic impact

Labor productivity	Life expectancy	Temperature change
▼ -1% 2022 - 2023	▲ 0.5% 2021 - 2022	▲ 2.3°C 2023
▲ 0.3% 2013 - 2023	▲ 0.1% 2012 - 2022	n/a
125,073 USD in 2023	81.7 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

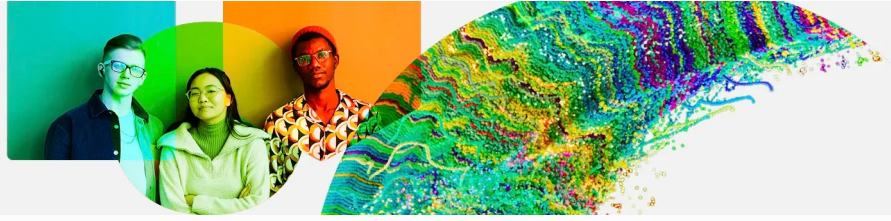
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected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



Netherlands (Kingdom of the) is an innovation leader, ranking in the top 25 of the GII.

> 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.

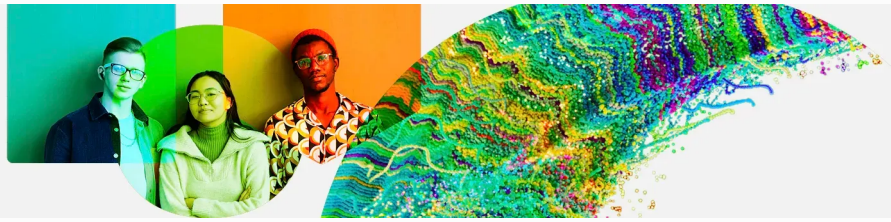


Netherlands (Kingdom of the) produces more innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

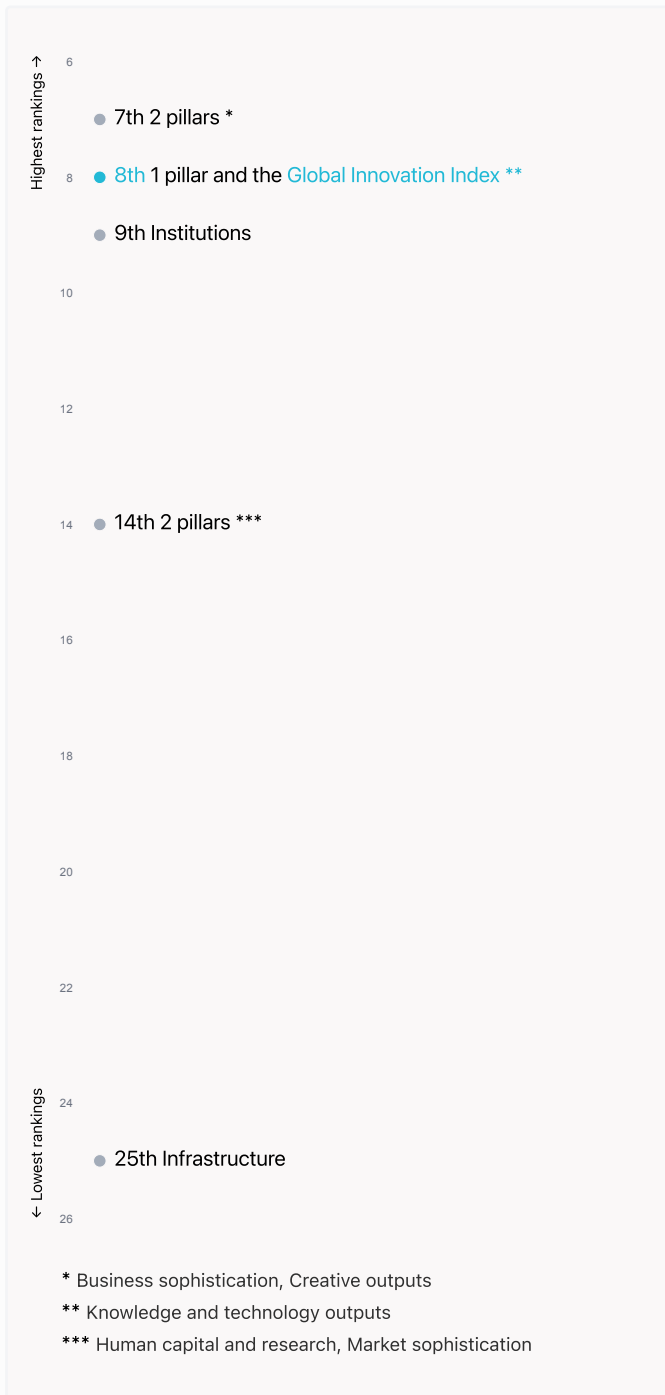


Global Innovation Index 2024



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



Highest rankings



Netherlands (Kingdom of the) ranks highest in Business sophistication, Creative outputs (7th) and Knowledge and technology outputs (8th).

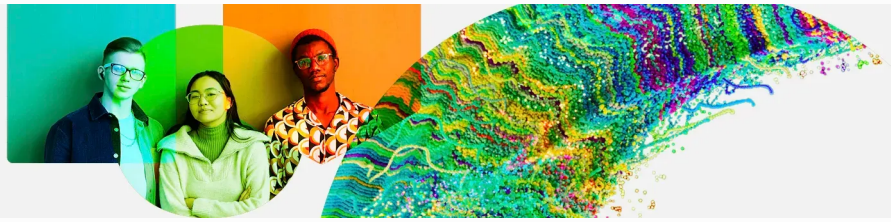
Lowest rankings



Netherlands (Kingdom of the) ranks lowest in Infrastructure (25th), Human capital and research, Market sophistication (14th) and Institutions (9th).

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

Global Innovation Index 2024



Benchmark of Netherlands (Kingdom of the) against other economy groupings for each of the seven areas of the GII Index

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



High-Income economies

Netherlands (Kingdom of the) performs above the high-income group average in all pillars.



Europe

Netherlands (Kingdom of the) performs above the regional average in all pillars.

Institutions

Netherlands | Score: 81.36

Top 10 | Score: 80.81

High income | Score: 67.41

Europe | Score: 59.14

Human capital and research

Top 10 | Score: 61.30

Netherlands | Score: 56.10

High income | Score: 46.99

Europe | Score: 44.92

Infrastructure

Top 10 | Score: 58.57

Netherlands | Score: 53.71

High income | Score: 51.96

Europe | Score: 51.74

Market sophistication

Top 10 | Score: 62.12

Netherlands | Score: 56.05

High income | Score: 44.90

Europe | Score: 42.79

Business sophistication

Top 10 | Score: 63.64

Netherlands | Score: 62.47

High income | Score: 44.71

Europe | Score: 42.68

Knowledge and technology outputs

Top 10 | Score: 57.29

Netherlands | Score: 55.53

Europe | Score: 36.30

High income | Score: 35.79

Creative outputs

Top 10 | Score: 56.54

Netherlands | Score: 55.92

High income | Score: 39.44

Europe | Score: 39.15



Innovation strengths and weaknesses in Netherlands (Kingdom of the)

The table below gives an overview of the indicator strengths and weaknesses of Netherlands (Kingdom of the) in the GII 2024.

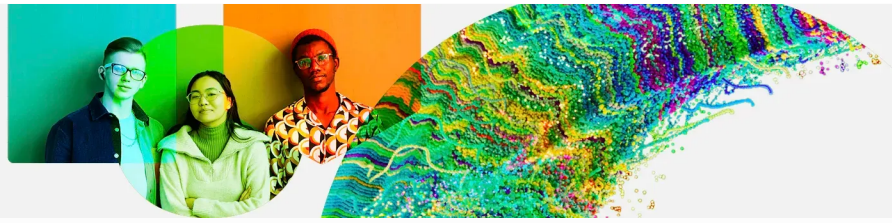


Netherlands (Kingdom of the)'s main innovation strengths are **Intellectual property payments, % total trade (rank 1)**, **Intellectual property receipts, % total trade (rank 1)** and **Top-level domains (TLDs)/th pop. 15–69 (rank 1)**.

Strengths

Weaknesses

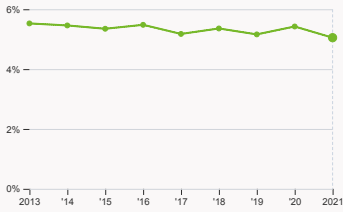
Rank	Code	Indicator name	Rank	Code	Indicator name
1	5.3.1	Intellectual property payments, % total trade	130	5.3.4	FDI net inflows, % GDP
1	6.3.1	Intellectual property receipts, % total trade	100	6.2.1	Labor productivity growth, %
1	7.3.1	Top-level domains (TLDs)/th pop. 15–69	89	3.2.3	Gross capital formation, % GDP
3	4.1.1	Finance for startups and scaleups [†]	83	2.2.2	Graduates in science and engineering, %
3	7.3.2	GitHub commits/mn pop. 15–69	74	3.3.2	Low-carbon energy use, %
3	3.2.2	Logistics performance*	67	2.1.5	Pupil–teacher ratio, secondary
4	5.1.1	Knowledge-intensive employment, %	53	7.1.2	Trademarks by origin/bn PPP\$ GDP
4	5.2.2	University–industry R&D collaboration [†]	46	3.3.3	ISO 14001 environment/bn PPP\$ GDP
5	3.1.4	E-participation*	37	7.2.2	National feature films/mn pop. 15–69
7	6.1.5	Citable documents H-index	21	4.3.1	Applied tariff rate, weighted avg., %
7	1.2.1	Regulatory quality*			



Netherlands (Kingdom of the)'s innovation system

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

> Innovation inputs in Netherlands (Kingdom of the)



2.1.1 Expenditure on education

was equal to 5.05 % GDP in 2021, down by 0.37 percentage points from the year prior – and equivalent to an indicator rank of 41.



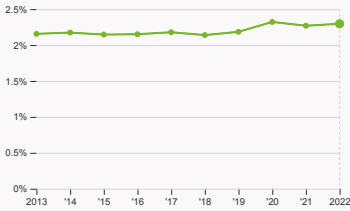
2.2.2 Graduates in science and engineering

was equal to 19.34 % of total graduates in 2021, up by 0.5 percentage points from the year prior – and equivalent to an indicator rank of 83.



2.3.1 Researchers

was equal to 6532.61 FTE per million population in 2022, up by 7.6% from the year prior – and equivalent to an indicator rank of 10.



2.3.2 Gross expenditure on R&D

was equal to 2.3 % GDP in 2022, up by 0.03 percentage points from the year prior – and equivalent to an indicator rank of 15.



2.3.4 QS university ranking

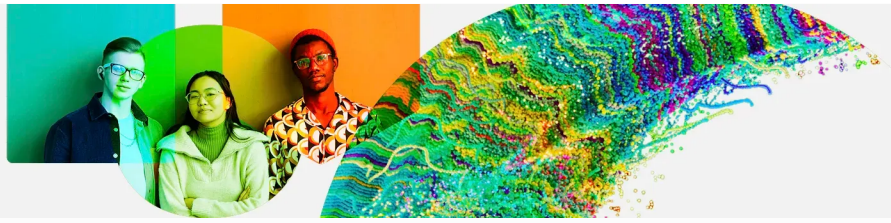
was equal to an average score of 69.47 for the top three universities in 2023, up by 5.58% from the year prior – and equivalent to an indicator rank of 12.



4.2.4 VC received, value

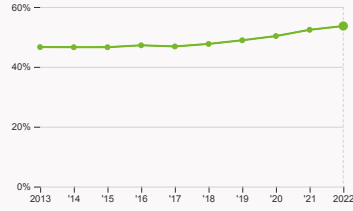
was equal to 2.12 million USD in 2023, down by 21.77% from the year prior – and equivalent to an indicator rank of 18.

Global Innovation Index 2024



4.3.2 Domestic industry diversification

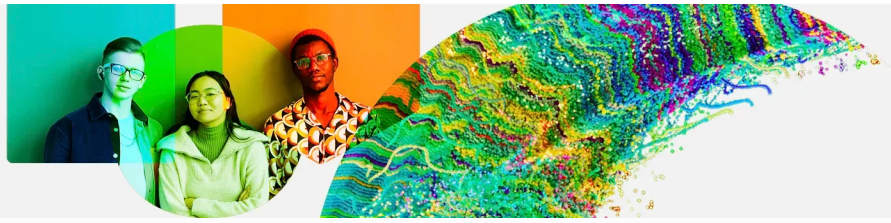
was equal to an index score of 0.1 in 2021, up by 0.12% from the year prior – and equivalent to an indicator rank of 30.



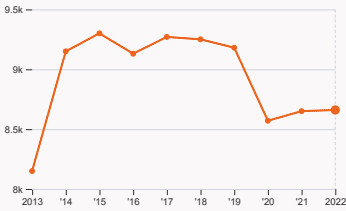
5.1.1 Knowledge-intensive employment

was equal to 53.65 % in 2022, up by 1.27 percentage points from the year prior – and equivalent to an indicator rank of 4.

Global Innovation Index 2024

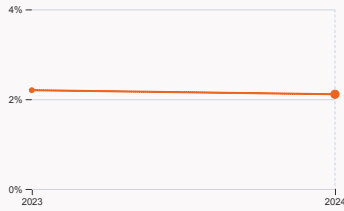


› Innovation outputs in Netherlands (Kingdom of the)



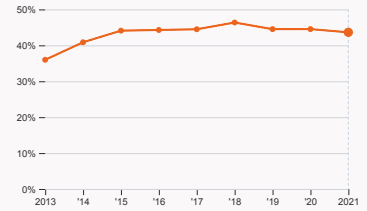
6.1.1 Patents by origin

was equal to 8.66 thousand patents in 2022, up by 0.12% from the year prior – and equivalent to an indicator rank of 11.



6.2.2 Unicorn valuation

was equal to 2.11 % GDP in 2024, down by 0.09 percentage points from the year prior – and equivalent to an indicator rank of 17.



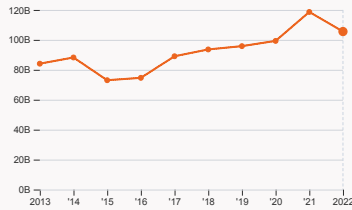
6.2.4 High-tech manufacturing

was equal to 43.62 % of total manufacturing output in 2021, down by 0.89 percentage points from the year prior – and equivalent to an indicator rank of 21.



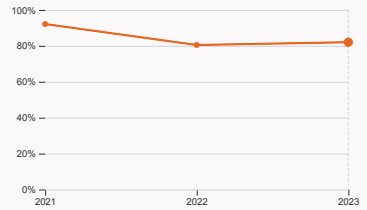
6.3.2 Production and export complexity

was equal to a score of 0.99 in 2021, down by 6.6% from the year prior – and equivalent to an indicator rank of 26.



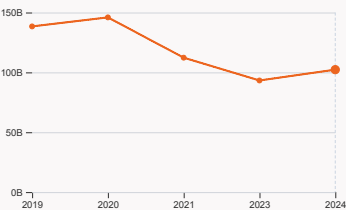
6.3.3 High-tech exports

was equal to 105.57 billion USD in 2022, down by 11.02% from the year prior – and equivalent to an indicator rank of 16.



7.1.1 Intangible asset intensity

was equal to 82.04 % for the top 15 companies in 2023, up by 1.56 percentage points from the year prior – and equivalent to an indicator rank of 6.



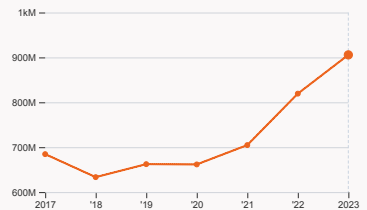
7.1.3 Global brand value

was equal to 102.26 billion USD for the brands in the top 5,000 in 2024, up by 9.7% from the year prior – and equivalent to an indicator rank of 23.



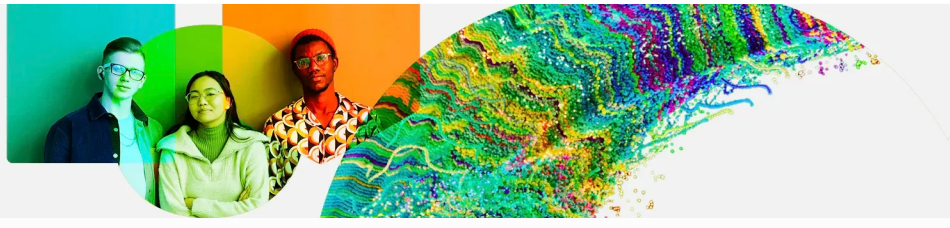
7.2.2 National feature films

was equal to 46 films in 2022, up by 21.05% from the year prior – and equivalent to an indicator rank of 37.



7.3.3 Mobile app creation

was equal to 905.59 million global downloads of mobile apps in 2023, up by 10.54% from the year prior – and equivalent to an indicator rank of 30.



Netherlands (Kingdom of the)'s innovation top performers

2.3.3 Global corporate R&D investors from Netherlands (Kingdom of the)

Rank	Firm	Industry	R&D	R&D Growth	R&D Intensity
			[mn EUR]	[%]	[%]
28	STELLANTIS	Automobiles & Parts	6,720	14	4
56	AIRBUS	Aerospace & Defence	3,398	17	6
64	ASML HOLDING	Technology Hardware & Equipment	3,072	26	15
111	NXP SEMICONDUCTORS	Technology Hardware & Equipment	2,016	11	16

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 Netherlands (Kingdom of the)'s top universities

Rank	University	Score
47	DELFT UNIVERSITY OF TECHNOLOGY	76.20
53	UNIVERSITY OF AMSTERDAM	73.40
107	UTRECHT UNIVERSITY	58.80

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".

6.2.2 Top Unicorn Companies in Netherlands (Kingdom of the)

Rank	Unicorn Company	Industry	City	Valuation, bn USD
1	MOLLIE	Financial Services	Amsterdam	7
2	MAMBU	Financial Services	Amsterdam	6
3	MESSAGEBIRD	Enterprise Tech	Amsterdam	4

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 Netherlands (Kingdom of the)

Rank	Firm	Intensity, %
1	ASML HOLDING N.V.	98.14
2	AIRBUS SE	98.09
3	UNIVERSAL MUSIC GROUP N.V.	93.27

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 Netherlands (Kingdom of the) with highest global brand value

Rank	Brand	Industry	Brand Value, mn USD
1	ING	Banking	10,016.6
2	HEINEKEN	Beers	8,982.4
3	PHILIPS	Pharma	8,198.1

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

Note: Rank corresponds to within economy ranks.

Global Innovation Index 2024



Netherlands (Kingdom of the)

GII 2024 rank

8

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
8	11	High	EUR	18.1	1,297	73,316.9
			Score / Value Rank			
Institutions			81.4 9	Business sophistication 62.5 7		
1.1 Institutional environment			81.6 16	5.1 Knowledge workers 67.7 14		
1.1.1 Operational stability for businesses*			78 29	5.1.1 Knowledge-intensive employment, % 53.6 4		
1.1.2 Government effectiveness*			85.2 9	5.1.2 Firms offering formal training, % 54.1 13		
1.2 Regulatory environment			89.1 9	5.1.3 GERD performed by business, % GDP 1.6 15		
1.2.1 Regulatory quality*			86.8 7	5.1.4 GERD financed by business, % 56.5 18		
1.2.2 Rule of law*			91.4 11	5.1.5 Females employed w/advanced degrees, % 23.2 22		
1.3 Business environment			73.4 16	5.2 Innovation linkages 62 8		
1.3.1 Policy stability for doing business*			71.2 23	5.2.1 Public Research-Industry co-publications, % 5.4 10		
1.3.2 Entrepreneurship policies and culture*			75.6 9	5.2.2 University-industry R&D collaboration+ 90.4 4		
Human capital and research			56.1 14	5.2.3 State of cluster development+ 88.8 10		
2.1 Education			62.2 28	5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP 0.07 22		
2.1.1 Expenditure on education, % GDP 5.1 41				5.2.5 Patent families/bn PPP\$ GDP 4.6 10		
2.1.2 Government funding/pupil, secondary, % GDP/cap 23.2 32				5.3 Knowledge absorption 57.7 5		
2.1.3 School life expectancy, years 18.6 13				5.3.1 Intellectual property payments, % total trade 4.7 1		
2.1.4 PISA scales in reading, maths and science 480.1 25				5.3.2 High-tech imports, % total trade 11.4 27		
2.1.5 Pupil-teacher ratio, secondary 13.8 67				5.3.3 ICT services imports, % total trade 2.9 14		
2.2 Tertiary education			42.3 31	5.3.4 FDI net inflows, % GDP -12.1 130		
2.2.1 Tertiary enrolment, % gross 89 15				5.3.5 Research talent, % in businesses 70.2 6		
2.2.2 Graduates in science and engineering, % 19.3 83				Knowledge and technology outputs 55.5 8		
2.2.3 Tertiary inbound mobility, % 13.7 15				6.1 Knowledge creation 63.4 5		
2.3 Research and development (R&D)			63.8 10	6.1.1 Patents by origin/bn PPP\$ GDP 7 11		
2.3.1 Researchers, FTE/mn pop. 6,532.6 10				6.1.2 PCT patents by origin/bn PPP\$ GDP 3.3 9		
2.3.2 Gross expenditure on R&D, % GDP 2.3 15				6.1.3 Utility models by origin/bn PPP\$ GDP - -		
2.3.3 Global corporate R&D investors, top 3, mn USD 81.1 8				6.1.4 Scientific and technical articles/bn PPP\$ GDP 29.5 17		
2.3.4 QS university ranking, top 3* 70.3 12				6.1.5 Citable documents H-index 70.5 7		
Infrastructure			53.7 25	6.2 Knowledge impact 49.4 13		
3.1 Information and communication technologies (ICTs)			91.5 12	6.2.1 Labor productivity growth, % -0.1 100		
3.1.1 ICT access* 95.8 42				6.2.2 Unicorn valuation, % GDP 2.1 17		
3.1.2 ICT use* 84.6 34				6.2.3 Software spending, % GDP 0.6 13		
3.1.3 Government's online service* 89.2 11				6.2.4 High-tech manufacturing, % 43.6 21		
3.1.4 E-participation* 96.5 5				6.3 Knowledge diffusion 53.8 11		
3.2 General infrastructure			46.5 26	6.3.1 Intellectual property receipts, % total trade 4.8 1		
3.2.1 Electricity output, GWh/mn pop. 6,870.8 26				6.3.2 Production and export complexity 68 26		
3.2.2 Logistics performance* 90.9 3				6.3.3 High-tech exports, % total trade 11.1 16		
3.2.3 Gross capital formation, % GDP 21.3 89				6.3.4 ICT services exports, % total trade 4.2 25		
3.3 Ecological sustainability			23.2 54	6.3.5 ISO 9001 quality/bn PPP\$ GDP 8.3 34		
3.3.1 GDP/unit of energy use 15.5 26				Creative outputs 55.9 7		
3.3.2 Low-carbon energy use, % 14.4 74				7.1 Intangible assets 46.6 25		
3.3.3 ISO 14001 environment/bn PPP\$ GDP 2.3 46				7.1.1 Intangible asset intensity, top 15, % 82 6		
Market sophistication			56.1 14	7.1.2 Trademarks by origin/bn PPP\$ GDP 37.8 53		
4.1 Credit			59.4 11	7.1.3 Global brand value, top 5,000, % GDP 8.8 23		
4.1.1 Finance for startups and scaleups+ 86.1 3				7.1.4 Industrial designs by origin/bn PPP\$ GDP 2.9 29		
4.1.2 Domestic credit to private sector, % GDP 92.1 29				7.2 Creative goods and services 40.1 14		
4.1.3 Loans from microfinance institutions, % GDP n/a n/a				7.2.1 Cultural and creative services exports, % total trade 2 11		
4.2 Investment			39.3 18	7.2.2 National feature films/mn pop. 15-69 3.6 37		
4.2.1 Market capitalization, % GDP 109.9 16				7.2.3 Entertainment and media market/th pop. 15-69 43.8 18		
4.2.2 Venture capital (VC) investors, deals/bn PPP\$ GDP 0.5 12				7.2.4 Creative goods exports, % total trade 3 17		
4.2.3 VC recipients, deals/bn PPP\$ GDP 0.2 17				7.3 Online creativity 90.4 1		
4.2.4 VC received, value, % GDP 0.003 18				7.3.1 Top-level domains (TLDs)/th pop. 15-69 100 1		
4.3 Trade, diversification and market scale			69.4 20	7.3.2 GitHub commits/mn pop. 15-69 97.8 3		
4.3.1 Applied tariff rate, weighted avg., % 1.1 21				7.3.3 Mobile app creation/bn PPP\$ GDP 73.3 30		
4.3.2 Domestic industry diversification 91.5 30						
4.3.3 Domestic market scale, bn PPP\$ 1,297 27						

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 Netherlands (Kingdom of the).



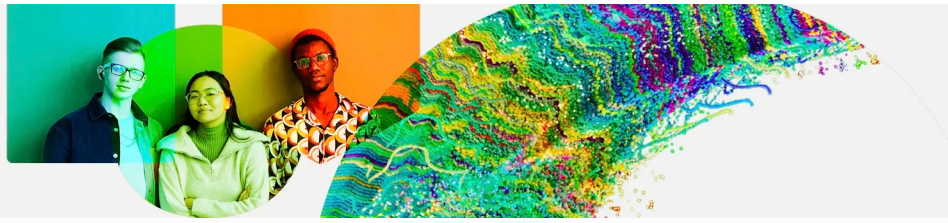
Netherlands (Kingdom of the) has missing data for two indicators and outdated data for seven indicators.

Missing data for Netherlands (Kingdom of the)

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)
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2022	World Intellectual Property Organization; International Monetary Fund

Outdated data for Netherlands (Kingdom of the)

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
4.2.1	Market capitalization, % GDP	2017	2022	World Federation of Exchanges; World Bank
5.1.2	Firms offering formal training, %	2020	2023	World Bank Enterprise Surveys



Top science and technology clusters in Netherlands (Kingdom of the)



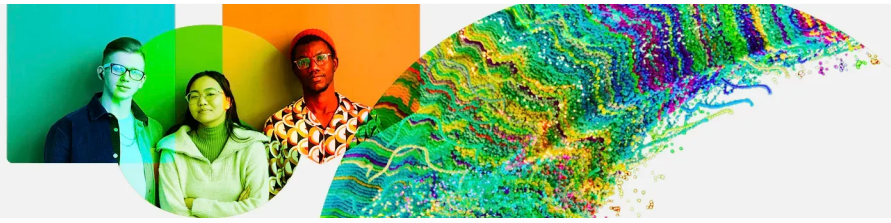
Netherlands (Kingdom of the) has 2 clusters in the top 100 S&T clusters of the Global Innovation Index, the same number as in 2023.

The table and map below give an overview of the top science and technology clusters in Netherlands (Kingdom of the).

Rank	Cluster name	Top patent field	Top academic subject
26	Amsterdam-Rotterdam	Pharmaceuticals	Engineering
42	Eindhoven	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 Netherlands (Kingdom of the).

Rank	Cluster name	Top patent field	Top academic subject
3	Eindhoven	Medical technology	Engineering
53	Amsterdam-Rotterdam	Pharmaceuticals	Engineering

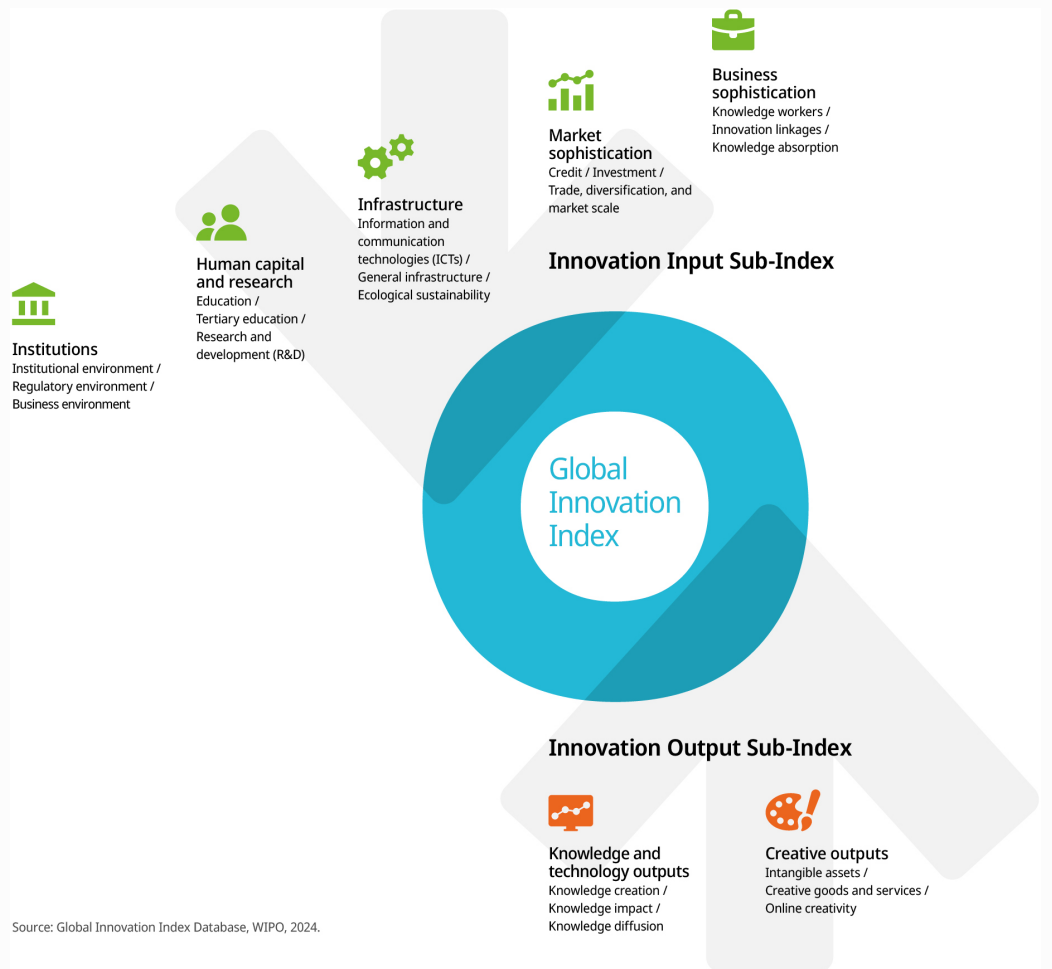


Global Innovation Index 2024



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.