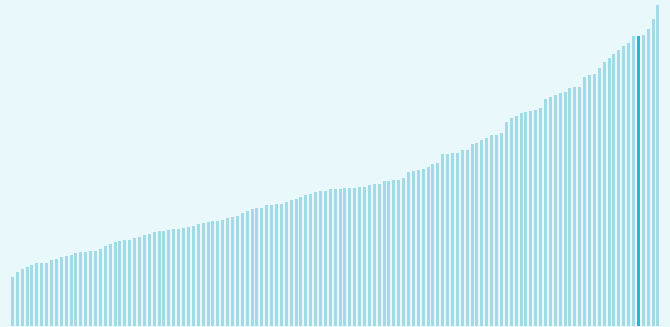


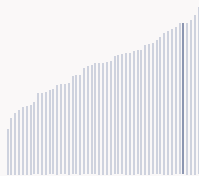
United Kingdom ranking in the Global Innovation Index 2024

United Kingdom ranks **5th** among the 133 economies featured in the GII 2024.

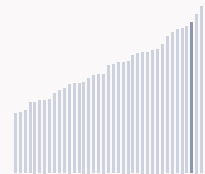
The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.



United Kingdom ranks **5th** among the 51 high-income group economies.



United Kingdom ranks **3rd** among the 39 economies in Europe.



> United Kingdom GII Ranking (2020-2024)

The table shows the rankings of United Kingdom 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 United Kingdom in the GII 2024 is between ranks 4 and 7.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	4th	6th	3rd
2021	4th	7th	6th
2022	4th	7th	3rd
2023	4th	6th	2nd
2024	5th	10th	3rd

United Kingdom performs better in innovation outputs than innovation inputs in 2024.

This year United Kingdom ranks 10th in innovation inputs. This position is lower than last year.

United Kingdom ranks 3rd in innovation outputs. This position is lower than last year.

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



For United Kingdom, 6 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	
▼ -6.7% 2022 - 2023	▲ 7.1% 2020 - 2021	▲ 0.4% 2022 - 2023	▼ -34.9% 2022 - 2023	▼ -2.3% 2022 - 2023
▲ 2.3% 2013 - 2023	▲ 7.3% 2011 - 2021	▲ 12.3% 2013 - 2023	▲ 20.1% 2013 - 2023	▲ 1.4% 2013 - 2023

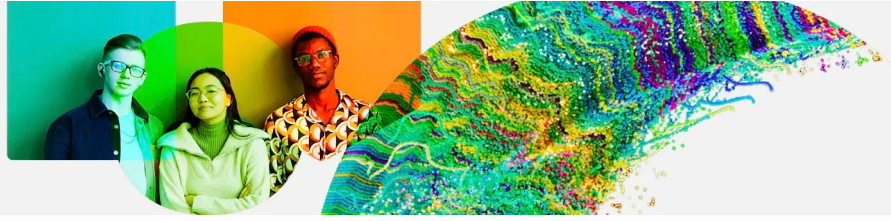
Technology adoption

Safe sanitation	Connectivity		Robots	Electric vehicles
	Fixed broadband	5G		
0% 2021 - 2022	0% 2021 - 2022	▲ 78.3% 2021 - 2022	▲ 6.7% 2021 - 2022	▲ 66.3% 2022 - 2023
0% 2012 - 2022	▲ 2% 2012 - 2022		▲ 5.8% 2012 - 2022	▲ 69.2% 2013 - 2023
98.1 per 100 inhabitants in 2022	41.4 per 100 inhabitants in 2022	82 per 100 inhabitants in 2022		5 per 100 inhabitants in 2023

Socioeconomic impact

Labor productivity	Life expectancy	Temperature change
0% 2022 - 2023	▲ 1.7% 2021 - 2022	▲ 1.5°C 2023
▲ 0.6% 2013 - 2023	▲ 0.1% 2012 - 2022	n/a
118,217 USD in 2023	82.1 years in 2022	

Notes: Not all indicators of the Global Innovation Tracker are used to calculate the Global Innovation Index. Long-term annual growth refers to the compound annual growth rate (CAGR) over the indicated period. For each variable, a one-year growth rate is set for the short run, and ten-year CAGR is set for the long run; time windows might differ when gaps exist in data availability. The end period corresponds to the most recent available observation, which may differ among countries. Temperature change is an exception: it indicates the change in degrees Celsius with respect to the average temperature in the country from 1951–1980. Figures are rounded.



Expected vs. observed innovation performance

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



United Kingdom 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.



United Kingdom produces more innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

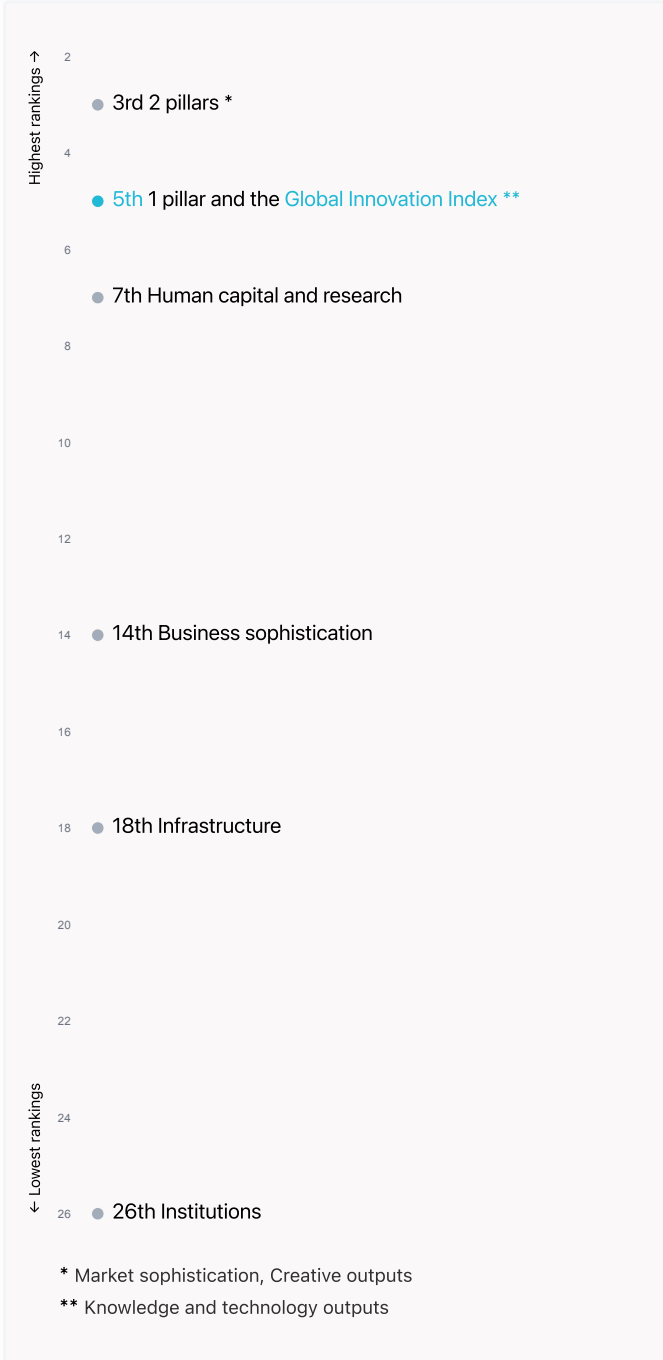


Global Innovation Index 2024



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



Highest rankings




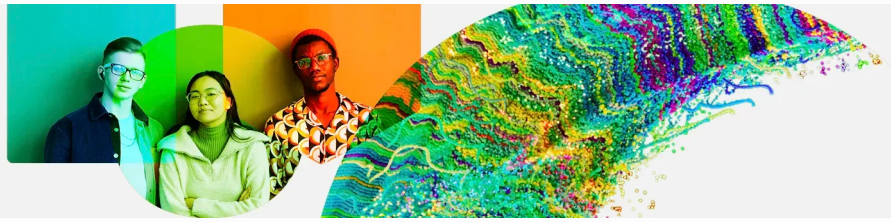
United Kingdom ranks highest in Market sophistication, Creative outputs (3rd) and Knowledge and technology outputs (5th).

Lowest rankings



United Kingdom ranks lowest in Institutions (26th), Infrastructure (18th) and Business sophistication (14th).

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



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

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



High-Income economies

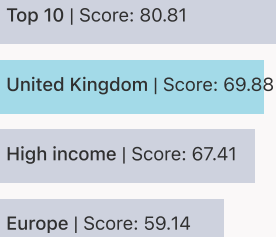
United Kingdom performs above the high-income group average in all pillars.



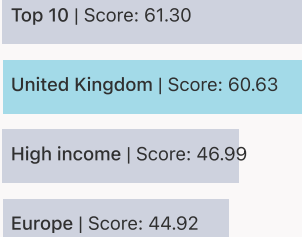
Europe

United Kingdom performs above the regional average in all pillars.

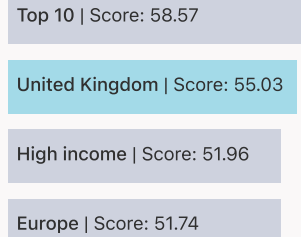
Institutions



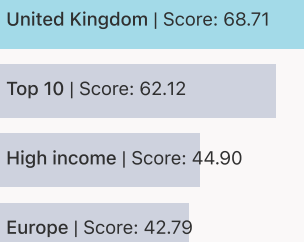
Human capital and research



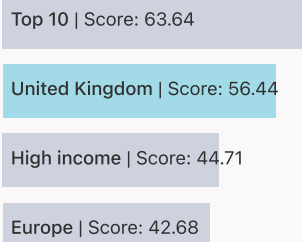
Infrastructure



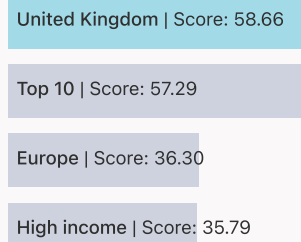
Market sophistication



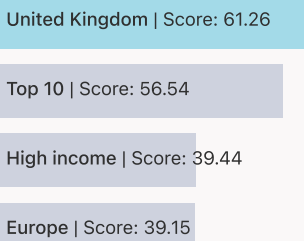
Business sophistication



Knowledge and technology outputs



Creative outputs



Global Innovation Index 2024



Innovation strengths and weaknesses in United Kingdom

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



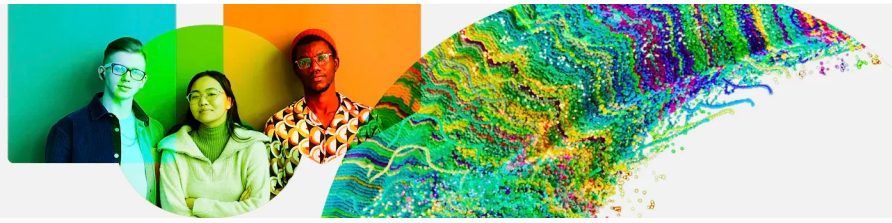
United Kingdom's main innovation strengths are **Citable documents H-index (rank 1)**, **Unicorn valuation, % GDP (rank 1)** and **Domestic industry diversification (rank 2)**.

Strengths

Weaknesses

Rank	Code	Indicator name	Rank	Code	Indicator name
1	6.1.5	Citable documents H-index	107	3.2.3	Gross capital formation, % GDP
1	6.2.2	Unicorn valuation, % GDP	90	2.1.5	Pupil-teacher ratio, secondary
2	4.3.2	Domestic industry diversification	75	6.2.1	Labor productivity growth, %
2	2.3.4	QS university ranking, top 3*	72	5.3.4	FDI net inflows, % GDP
4	7.1.1	Intangible asset intensity, top 15, %	64	2.2.2	Graduates in science and engineering, %
6	7.2.1	Cultural and creative services exports, % total trade	52	5.3.3	ICT services imports, % total trade
6	3.1.4	E-participation*	52	3.3.2	Low-carbon energy use, %
6	4.2.3	VC recipients, deals/bn PPP\$ GDP	38	1.3.2	Entrepreneurship policies and culture†
7	2.3.3	Global corporate R&D investors, top 3, mn USD	35	7.2.2	National feature films/mn pop. 15-69
8	6.3.1	Intellectual property receipts, % total trade	35	5.3.5	Research talent, % in businesses

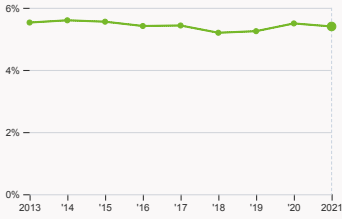
Global Innovation Index 2024



United Kingdom's innovation system

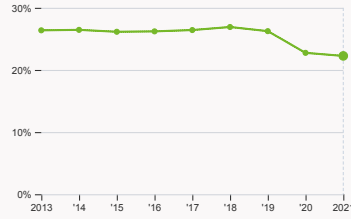
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in United Kingdom



2.1.1 Expenditure on education

was equal to 5.4 % GDP in 2021, down by 0.1 percentage points from the year prior – and equivalent to an indicator rank of 32.



2.2.2 Graduates in science and engineering

was equal to 22.26 % of total graduates in 2021, down by 0.49 percentage points from the year prior – and equivalent to an indicator rank of 64.



2.3.1 Researchers

was equal to 4763.48 FTE per million population in 2019, up by 3.24% from the year prior – and equivalent to an indicator rank of 24.



2.3.2 Gross expenditure on R&D

was equal to 2.9 % GDP in 2021, down by 0.04 percentage points from the year prior – and equivalent to an indicator rank of 11.



2.3.4 QS university ranking

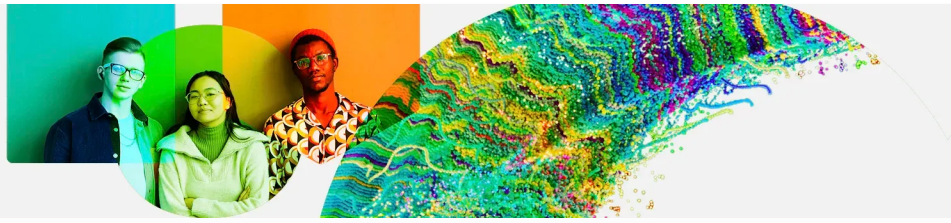
was equal to an average score of 98.63 for the top three universities in 2023, up by 0.57% from the year prior – and equivalent to an indicator rank of 2.



4.2.4 VC received, value

was equal to 12.41 million USD in 2023, down by 34.92% from the year prior – and equivalent to an indicator rank of 9.

Global Innovation Index 2024



4.3.2 Domestic industry diversification

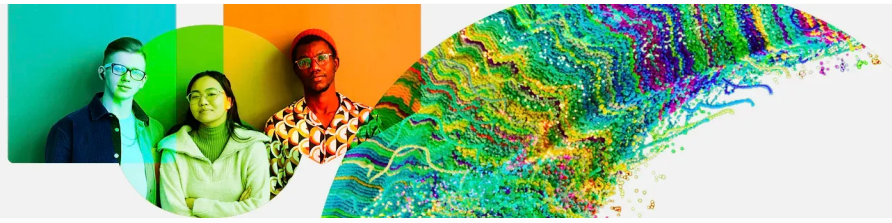
was equal to an index score of 0.07 in 2021, down by 6.08% from the year prior – and equivalent to an indicator rank of 2.



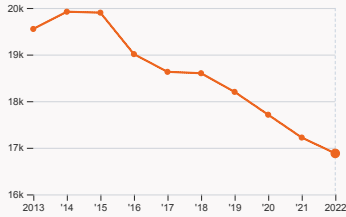
5.1.1 Knowledge-intensive employment

was equal to 50.56 % in 2019, up by 1.36 percentage points from the year prior – and equivalent to an indicator rank of 11.

Global Innovation Index 2024

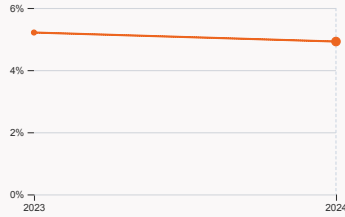


› Innovation outputs in United Kingdom



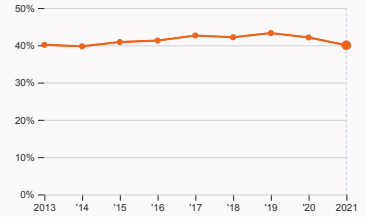
6.1.1 Patents by origin

was equal to 16.88 thousand patents in 2022, down by 1.97% from the year prior – and equivalent to an indicator rank of 16.



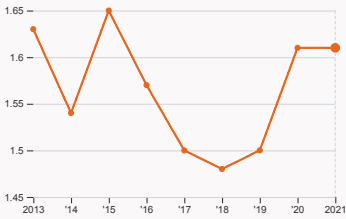
6.2.2 Unicorn valuation

was equal to 4.92 % GDP in 2024, down by 0.29 percentage points from the year prior – and equivalent to an indicator rank of 1.



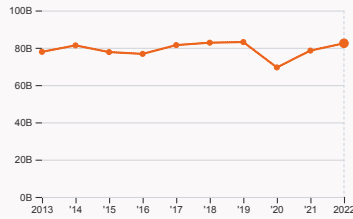
6.2.4 High-tech manufacturing

was equal to 40.02 % of total manufacturing output in 2021, down by 2.08 percentage points from the year prior – and equivalent to an indicator rank of 26.



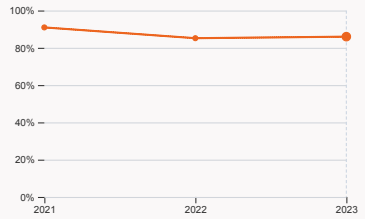
6.3.2 Production and export complexity

was equal to a score of 1.61 in 2021 with no change from the year prior – and equivalent to an indicator rank of 8.



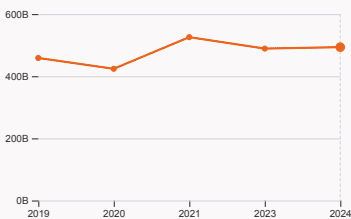
6.3.3 High-tech exports

was equal to 82.43 billion USD in 2022, up by 4.99% from the year prior – and equivalent to an indicator rank of 25.



7.1.1 Intangible asset intensity

was equal to 85.98 % for the top 15 companies in 2023, up by 0.82 percentage points from the year prior – and equivalent to an indicator rank of 4.



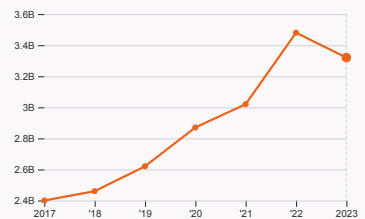
7.1.3 Global brand value

was equal to 493.56 billion USD for the brands in the top 5,000 in 2024, up by 0.94% from the year prior – and equivalent to an indicator rank of 10.



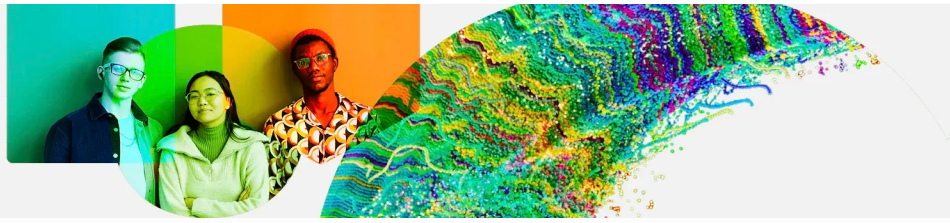
7.2.2 National feature films

was equal to 180 films in 2022, up by 15.38% from the year prior – and equivalent to an indicator rank of 35.



7.3.3 Mobile app creation

was equal to 3.32 billion global downloads of mobile apps in 2023, down by 4.6% from the year prior – and equivalent to an indicator rank of 23.



United Kingdom's innovation top performers

2.3.3 Global corporate R&D investors from United Kingdom

Rank	Firm	Industry	R&D	R&D Growth	R&D Intensity
			[mn EUR]	[%]	[%]
14	ASTRAZENECA	Pharmaceuticals & Biotechnology	8,943	18	22
39	GSK	Pharmaceuticals & Biotechnology	5,480	4	14
86	HSBC	Banks	2,497	12	5
140	LLOYDS BANKING	Banks	1,643	43	8

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 United Kingdom's top universities

Rank	University	Score
2	UNIVERSITY OF CAMBRIDGE	99.20
3	UNIVERSITY OF OXFORD	98.90
6	IMPERIAL COLLEGE LONDON	97.80

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 United Kingdom

Rank	Unicorn Company	Industry	City	Valuation, bn USD
1	REVOLUT	Financial Services	London	33
2	GLOBAL SWITCH	Enterprise Tech	London	11
3	CHECKOUT.COM	Financial Services	London	11

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 United Kingdom

Rank	Firm	Intensity, %
1	ASTRAZENECA PLC	99.12
2	LINDE PLC	91.39
3	UNILEVER PLC	96.30

Source: Brand Finance (<https://brandirectory.com/reports/gift-2022>).

Note: Brand Finance only provides within economy ranks.

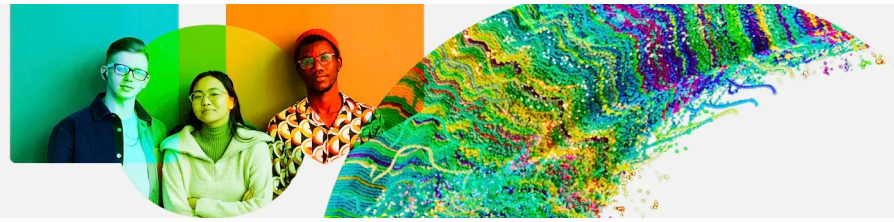
7.1.3 Top 5,000 companies in United Kingdom with highest global brand value

Rank	Brand	Industry	Brand Value, mn USD
1	SHELL	Oil & Gas	50,302.4
2	EY	Commercial Services	30,845
3	HSBC	Banking	20,047.3

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

Note: Rank corresponds to within economy ranks.

Global Innovation Index 2024



GII 2024 rank

5

United Kingdom

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
3	10	High	EUR	68.7	3,871.8	56,835.7
			Score / Value Rank			
Institutions				69.9	26	
1.1 Institutional environment				72.2	32	◇
1.1.1 Operational stability for businesses*				68	43	◇
1.1.2 Government effectiveness*				76.3	23	
1.2 Regulatory environment				83.7	18	
1.2.1 Regulatory quality*				83	13	
1.2.2 Rule of law*				84.4	18	
1.3 Business environment				53.8	50	◇
1.3.1 Policy stability for doing business*				64	35	
1.3.2 Entrepreneurship policies and culture*				43.5	38	○
Human capital and research				60.6	7	◆◆
2.1 Education				61.3	32	
2.1.1 Expenditure on education, % GDP				5.4	32	●
2.1.2 Government funding/pupil, secondary, % GDP/cap				23.9	31	
2.1.3 School life expectancy, years				17.6	15	
2.1.4 PISA scales in reading, maths and science				494.3	13	
2.1.5 Pupil-teacher ratio, secondary				17.3	90	○◇
2.2 Tertiary education				50.8	12	
2.2.1 Tertiary enrolment, % gross				82.7	20	
2.2.2 Graduates in science and engineering, %				22.3	64	○
2.2.3 Tertiary inbound mobility, %				21.6	8	◆
2.3 Research and development (R&D)				69.8	5	◆◆
2.3.1 Researchers, FTE/mn pop.				4,763.5	24	●
2.3.2 Gross expenditure on R&D, % GDP				2.9	11	●
2.3.3 Global corporate R&D investors, top 3, mn USD				83.5	7	◆◆
2.3.4 QS university ranking, top 3*				99.8	2	◆◆
Infrastructure				55	18	
3.1 Information and communication technologies (ICTs)				92.2	11	
3.1.1 ICT access*				99.9	13	
3.1.2 ICT use*				86.3	27	
3.1.3 Government's online service*				87.4	17	
3.1.4 E-participation*				95.3	6	◆◆
3.2 General infrastructure				34.8	51	◇
3.2.1 Electricity output, GWh/mn pop.				4,748.7	46	
3.2.2 Logistics performance*				72.7	18	
3.2.3 Gross capital formation, % GDP				18.5	107	○◇
3.3 Ecological sustainability				38	22	
3.3.1 GDP/unit of energy use				19.5	11	
3.3.2 Low-carbon energy use, %				24.2	52	○
3.3.3 ISO 14001 environment/bn PPP\$ GDP				5.1	21	
Market sophistication				68.7	3	◆◆
4.1 Credit				54.6	17	
4.1.1 Finance for startups and scaleups*				61.5	26	
4.1.2 Domestic credit to private sector, % GDP				129.9	13	
4.1.3 Loans from microfinance institutions, % GDP				n/a	n/a	
4.2 Investment				61.5	10	
4.2.1 Market capitalization, % GDP				110.6	15	
4.2.2 Venture capital (VC) investors, deals/bn PPP\$ GDP				0.7	11	
4.2.3 VC recipients, deals/bn PPP\$ GDP				0.3	6	◆◆
4.2.4 VC received, value, % GDP				0.006	9	
4.3 Trade, diversification and market scale				90	5	◆◆
4.3.1 Applied tariff rate, weighted avg., %				0.8	11	
4.3.2 Domestic industry diversification				99.6	2	◆◆
4.3.3 Domestic market scale, bn PPP\$				3,871.8	9	◆
Business sophistication				56.4	14	
5.1 Knowledge workers				69.4	12	
5.1.1 Knowledge-intensive employment, %				50.6	11	●
5.1.2 Firms offering formal training, %				n/a	n/a	
5.1.3 GERD performed by business, % GDP				2	11	
5.1.4 GERD financed by business, %				58.5	14	
5.1.5 Females employed w/advanced degrees, %				24.1	21	●
5.2 Innovation linkages				61.3	11	
5.2.1 Public Research-Industry co-publications, %				5.2	13	
5.2.2 University-industry R&D collaboration*				82.4	11	
5.2.3 State of cluster development*				81.8	18	
5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP				0.1	11	
5.2.5 Patent families/bn PPP\$ GDP				2.1	19	
5.3 Knowledge absorption				38.6	31	
5.3.1 Intellectual property payments, % total trade				1.9	12	
5.3.2 High-tech imports, % total trade				11.1	31	
5.3.3 ICT services imports, % total trade				1.5	52	○
5.3.4 FDI net inflows, % GDP				2.2	72	○
5.3.5 Research talent, % in businesses				41.8	35	○◇
Knowledge and technology outputs				58.7	5	◆◆
6.1 Knowledge creation				59.1	7	◆◆
6.1.1 Patents by origin/bn PPP\$ GDP				4.5	16	
6.1.2 PCT patents by origin/bn PPP\$ GDP				1.4	20	
6.1.3 Utility models by origin/bn PPP\$ GDP				-	-	
6.1.4 Scientific and technical articles/bn PPP\$ GDP				30.4	16	
6.1.5 Citable documents H-index				100	1	◆◆
6.2 Knowledge impact				63.5	3	◆◆
6.2.1 Labor productivity growth, %				0.5	75	○
6.2.2 Unicorn valuation, % GDP				4.9	1	◆◆
6.2.3 Software spending, % GDP				0.6	15	
6.2.4 High-tech manufacturing, %				40	26	
6.3 Knowledge diffusion				53.4	12	
6.3.1 Intellectual property receipts, % total trade				2.8	8	◆◆
6.3.2 Production and export complexity				83.6	8	
6.3.3 High-tech exports, % total trade				7.8	25	
6.3.4 ICT services exports, % total trade				4.2	27	
6.3.5 ISO 9001 quality/bn PPP\$ GDP				11.8	21	
Creative outputs				61.3	3	◆◆
7.1 Intangible assets				65.7	7	◆◆
7.1.1 Intangible asset intensity, top 15, %				86	4	◆◆
7.1.2 Trademarks by origin/bn PPP\$ GDP				50	36	
7.1.3 Global brand value, top 5,000, % GDP				13.8	10	
7.1.4 Industrial designs by origin/bn PPP\$ GDP				7.7	10	◆
7.2 Creative goods and services				50.4	6	◆◆
7.2.1 Cultural and creative services exports, % total trade				3.2	6	◆◆
7.2.2 National feature films/mn pop. 15-69				3.8	35	○
7.2.3 Entertainment and media market/th pop. 15-69				64.5	6	
7.2.4 Creative goods exports, % total trade				1.9	27	
7.3 Online creativity				63.3	12	
7.3.1 Top-level domains (TLDs)/th pop. 15-69				56.3	9	
7.3.2 GitHub commits/mn pop. 15-69				58.8	18	
7.3.3 Mobile app creation/bn PPP\$ GDP				74.8	23	

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 United Kingdom.



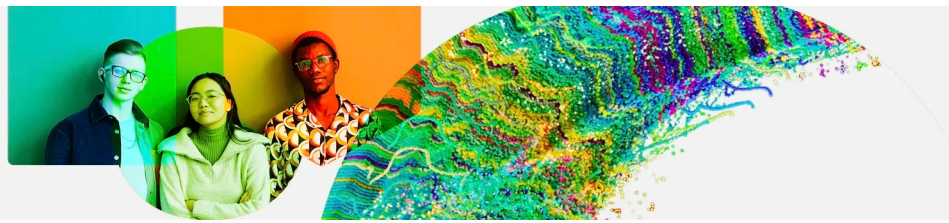
United Kingdom has missing data for three indicators and outdated data for seven indicators.

Missing data for United Kingdom

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

Outdated data for United Kingdom

Code	Indicator name	Economy Year	Model Year	Source
2.1.1	Expenditure on education, % GDP	2021	2022	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2021	2022	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2019	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	2021	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.1	Knowledge-intensive employment, %	2019	2022	International Labour Organization
5.1.5	Females employed w/advanced degrees, %	2019	2023	International Labour Organization
5.3.5	Research talent, % in businesses	2019	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT



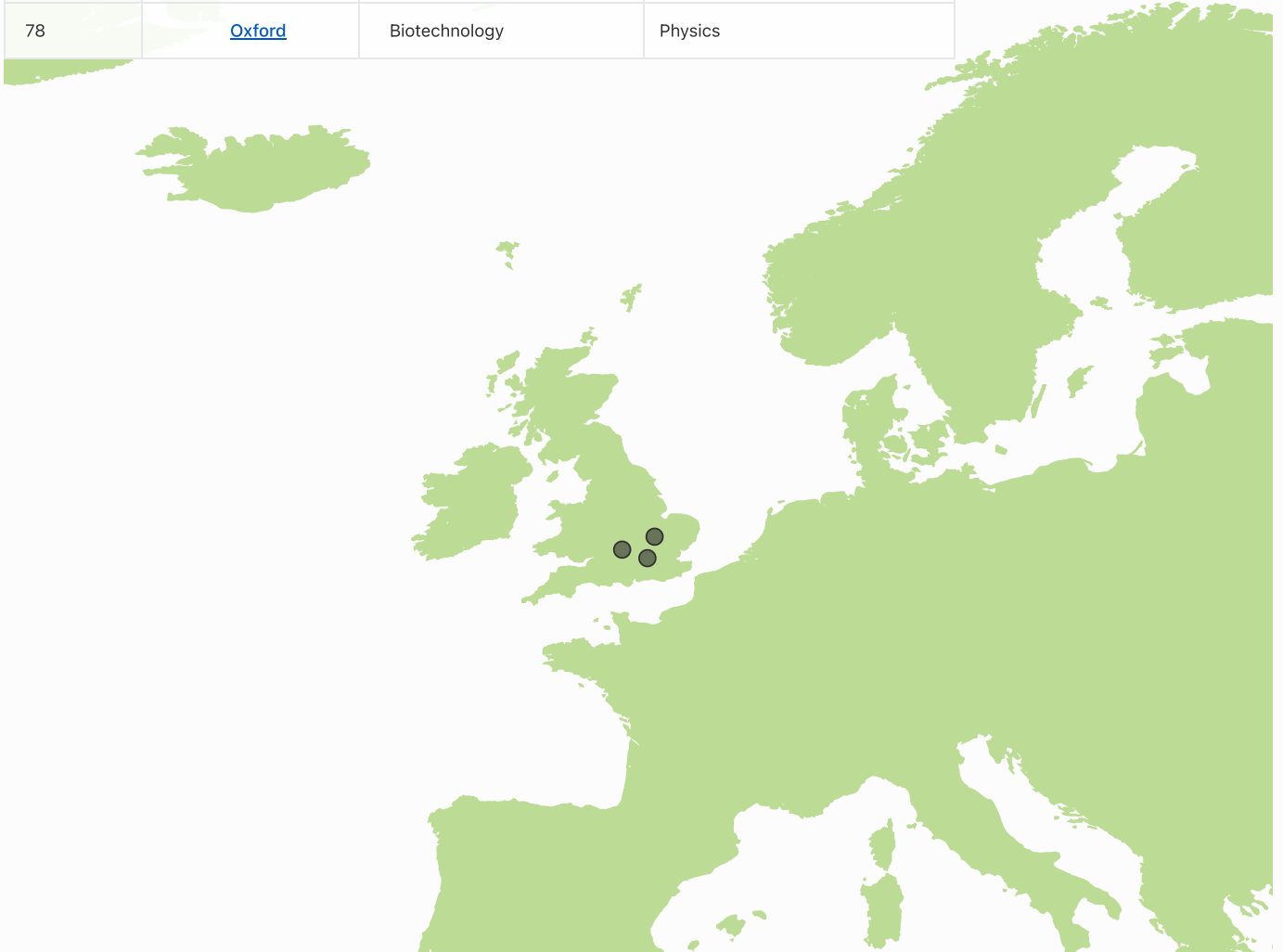
Top science and technology clusters in United Kingdom



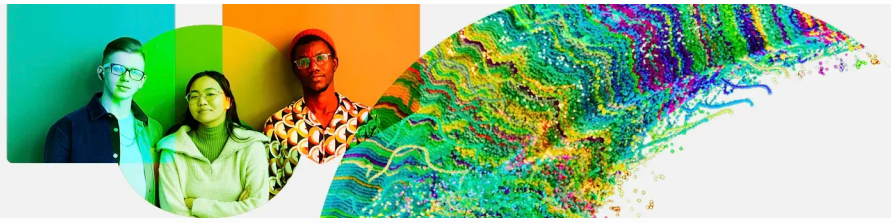
United Kingdom has 3 clusters in the top 100 S&T clusters of the Global Innovation Index, the same number as in 2023.

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

Rank	Cluster name	Top patent field	Top academic subject
21	London	Other consumer goods	Engineering
66	Cambridge	Computer technology	Physics
78	Oxford	Biotechnology	Physics

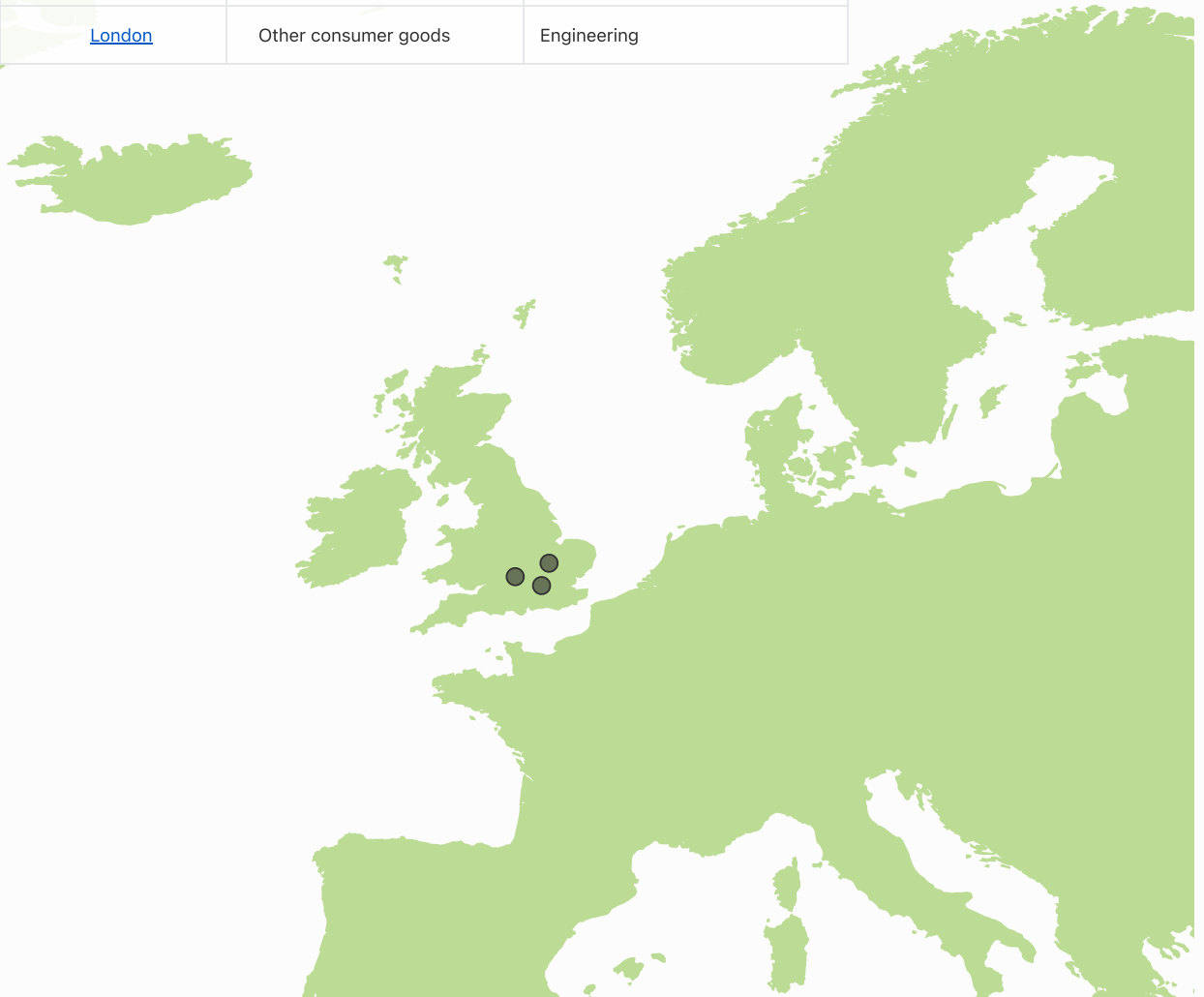


Global Innovation Index 2024



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

Rank	Cluster name	Top patent field	Top academic subject
1	Cambridge	Computer technology	Physics
4	Oxford	Biotechnology	Physics
70	London	Other consumer goods	Engineering

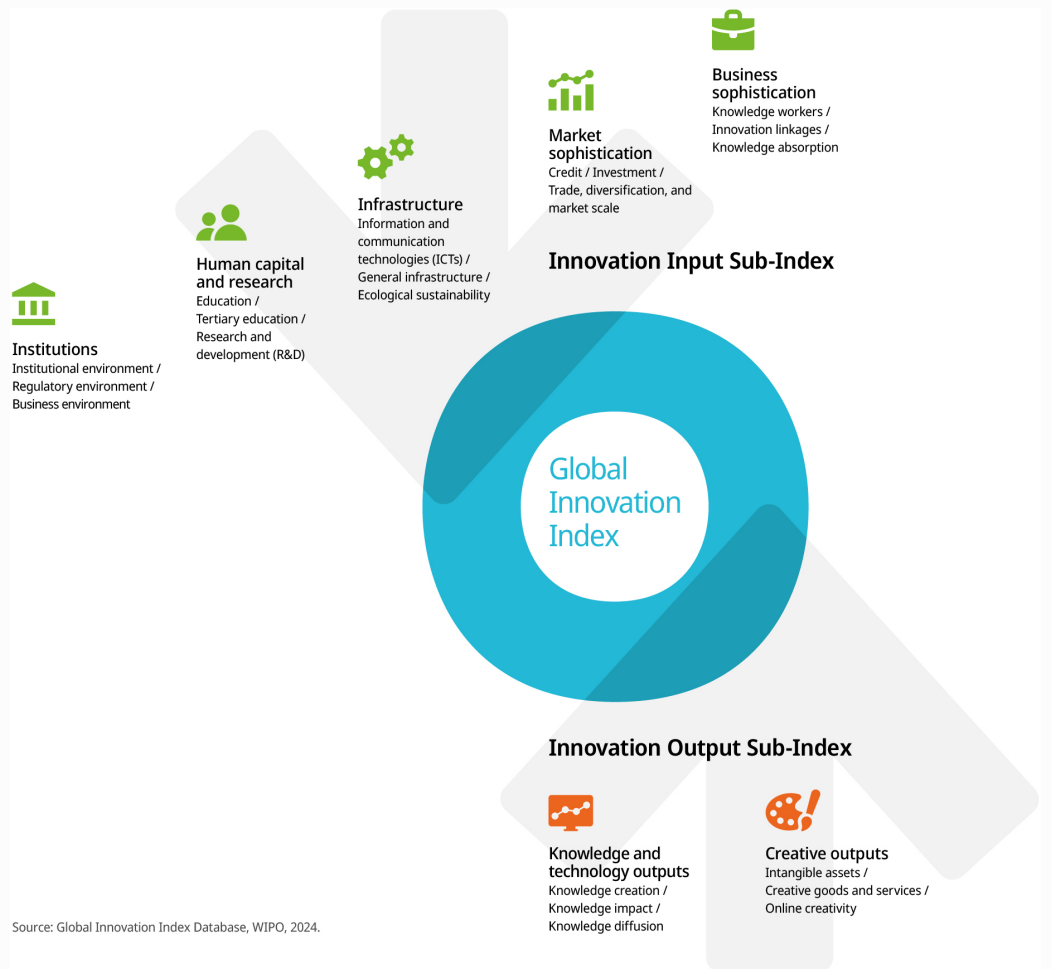


Global Innovation Index 2024



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.