Global Innovation Index 2021

UNITED KINGDOM

4th The United Kingdom ranks 4th among the 132 economies featured in the GII 2021.

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.

The following table shows the rankings of the United Kingdom over the past three years, noting that 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 the United Kingdom in the GII 2021 is between ranks 4 and 7.

Rankings for the United Kingdom (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	4	7	6
2020	4	6	3
2019	5	6	4

- The United Kingdom performs better in innovation outputs than innovation inputs in 2021.
- This year the United Kingdom ranks 7th in innovation inputs, lower than both 2020 and 2019.
- As for innovation outputs, The United Kingdom ranks 6th. This position is lower than both 2020 and 2019.

4th The United Kingdom ranks 4th among the 51 high-income group economies.

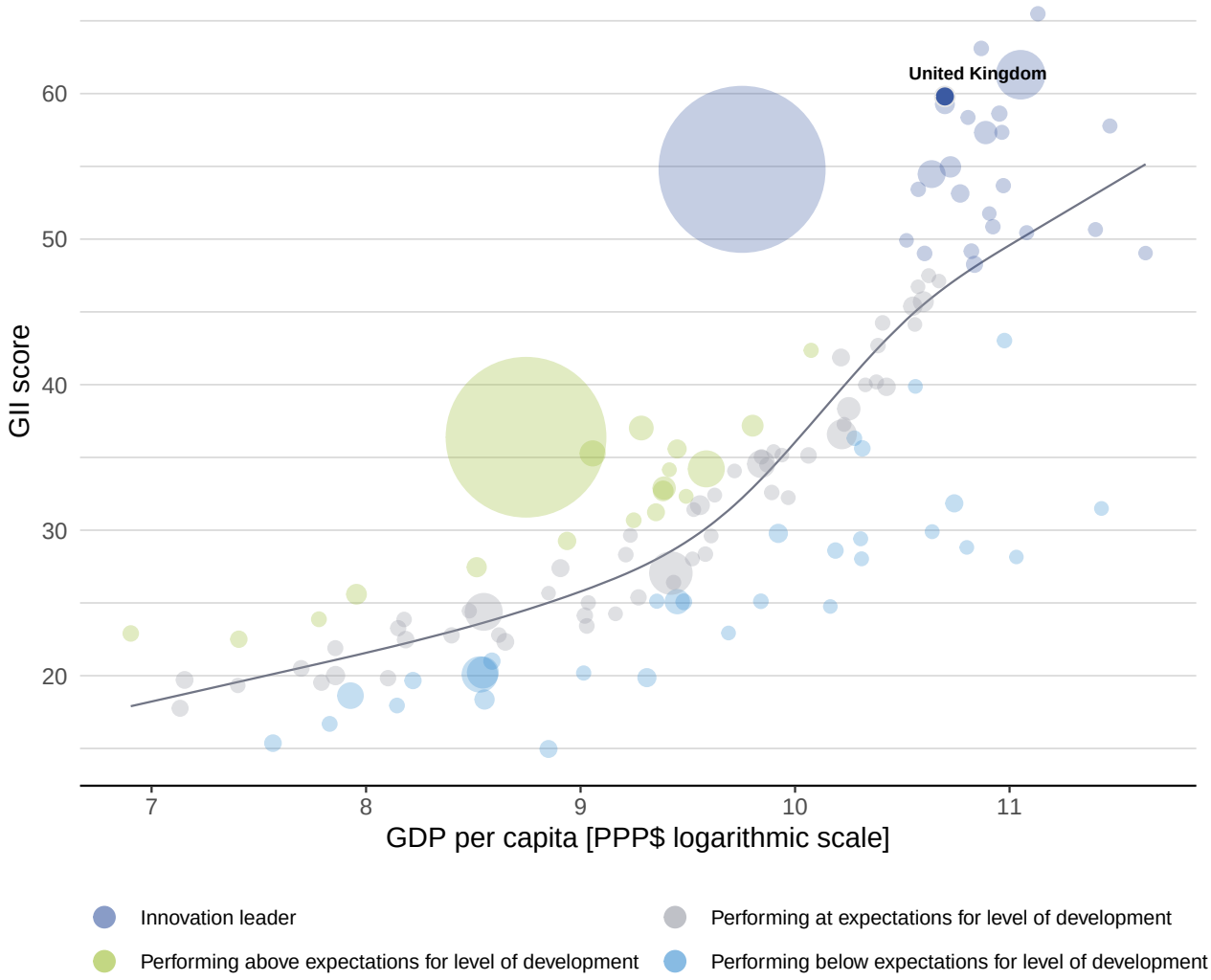
3rd The United Kingdom ranks 3rd among the 39 economies in Europe.

EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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

Relative to GDP, the United Kingdom's performance is above expectations for its level of development.

The positive relationship between innovation and development

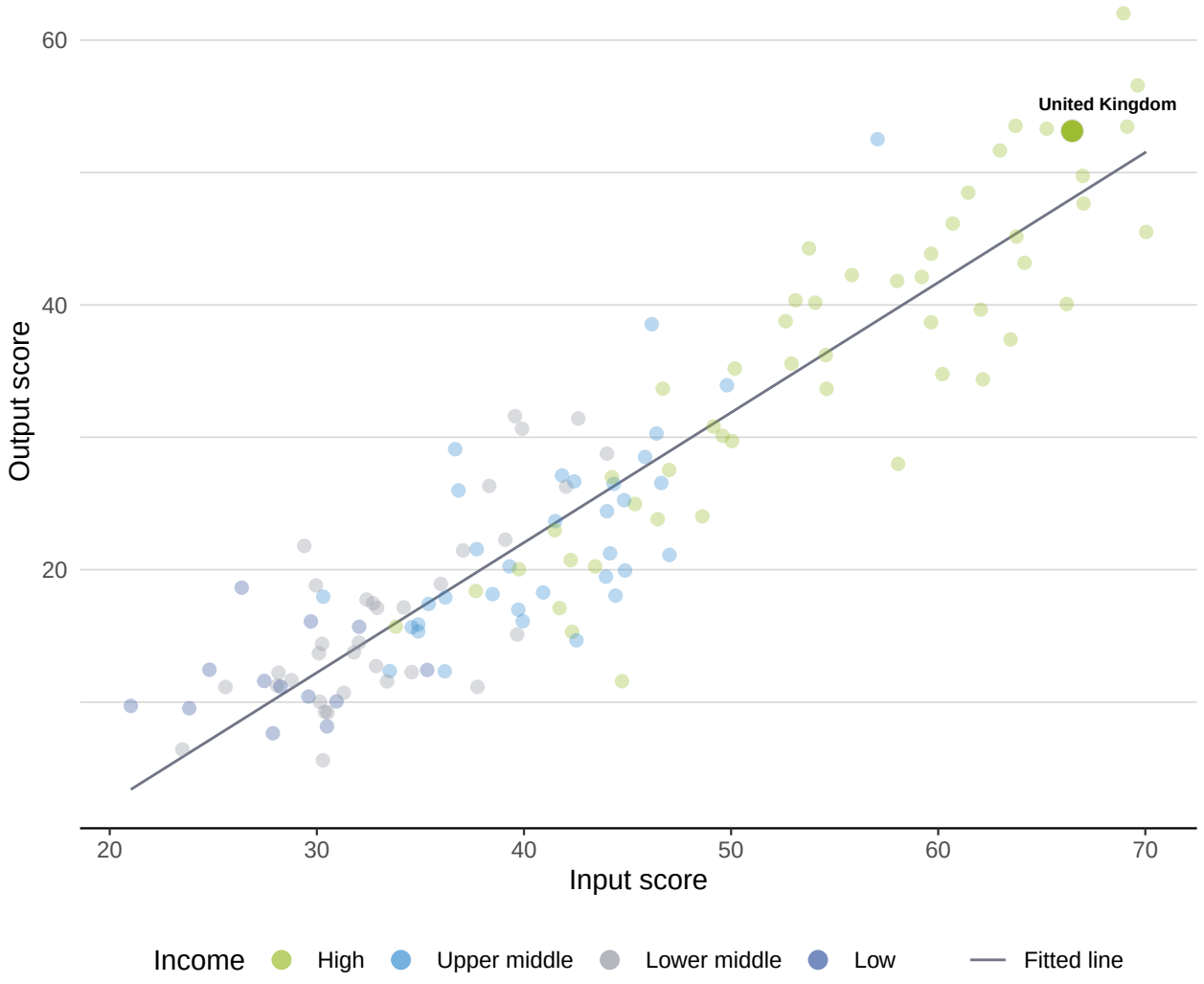


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

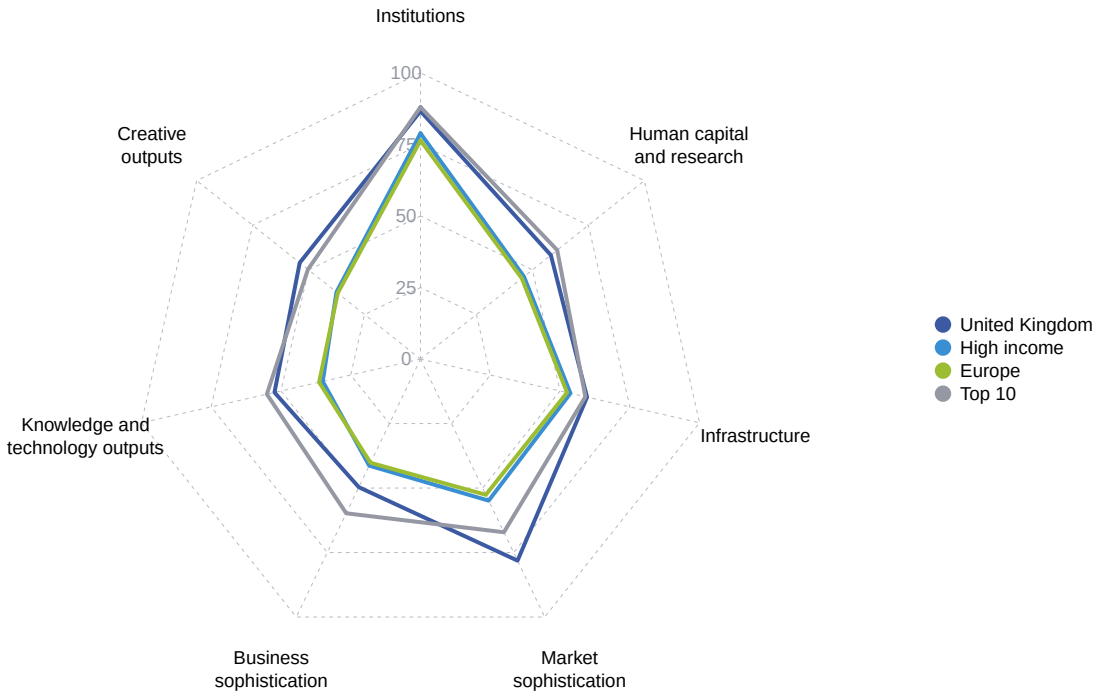
The United Kingdom produces more innovation outputs relative to its level of innovation investments.

Innovation input to output performance



BENCHMARKING AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND EUROPE

The seven GII pillar scores for the United Kingdom



High-income group economies

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

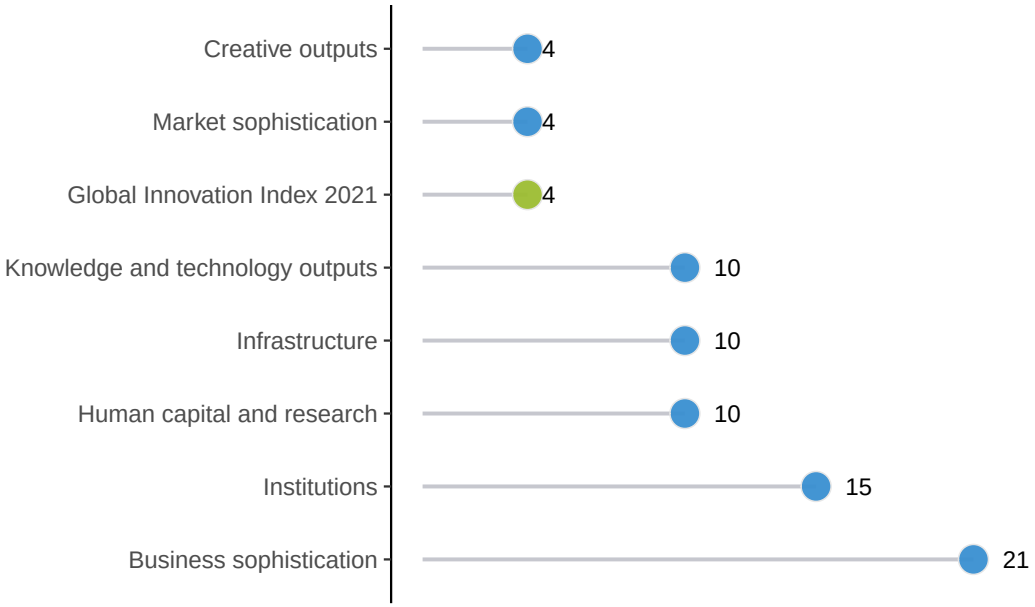
Europe

The United Kingdom performs above the regional average in all GII pillars.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

The United Kingdom performs best in Market sophistication and Creative outputs and its weakest performance is in Business sophistication.

The seven GII pillar ranks for the United Kingdom



Note: The highest possible ranking in each pillar is one.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of the United Kingdom in the GII 2021.

Strengths and weaknesses for the United Kingdom

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
2.3.3	Global corporate R&D investors, top 3, mn US$	8	2.1.2	Government funding/pupil, secondary, % GDP/cap	44
2.3.4	QS university ranking, top 3	2	2.1.5	Pupil-teacher ratio, secondary	82
3.1	Information and communication technologies (ICTs)	2	2.2.1	Tertiary enrolment, % gross	48
3.1.1	ICT access	3	3.2.1	Electricity output, GWh/mn pop.	48
3.1.3	Government's online service	6	3.2.3	Gross capital formation, % GDP	111
3.1.4	E-participation	6	4.3.1	Applied tariff rate, weighted avg., %	25
3.3.2	Environmental performance	4	5.3.3	ICT services imports, % total trade	51
4.2	Investment	5	5.3.4	FDI net inflows, % GDP	59
4.3	Trade, diversification, and market scale	3	5.3.5	Research talent, % in businesses	32
4.3.2	Domestic industry diversification	6	6.2.1	Labor productivity growth, %	112
5.1.1	Knowledge-intensive employment, %	7			
6.1	Knowledge creation	8			
6.1.5	Citable documents H-index	1			
7.1.4	ICTs and organizational model creation	6			
7.2	Creative goods and services	6			
7.2.1	Cultural and creative services exports, % total trade	6			
7.3.2	Country-code TLDs/th pop. 15–69	8			

United Kingdom

GII 2021 rank
4

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$	GII 2020 rank
6	7	High	EUR	67.9	2,978.6	44,288	4

		Score/ Value	Rank
Institutions		**86.6**	**15**
1.1	**Political environment**	**80.0**	**21**
1.1.1	Political and operational stability*	75.0	40 ◇
1.1.2	Government effectiveness*	82.6	18
1.2	**Regulatory environment**	**92.4**	**9**
1.2.1	Regulatory quality*	86.0	13
1.2.2	Rule of law*	88.9	16
1.2.3	Cost of redundancy dismissal	9.3	25
1.3	**Business environment**	**87.4**	**12**
1.3.1	Ease of starting a business*	94.6	17
1.3.2	Ease of resolving insolvency*	80.3	13
Human capital and research		**58.2**	**10**
2.1	**Education**	**59.7**	**28**
2.1.1	Expenditure on education, % GDP	5.4	21
2.1.2	Government funding/pupil, secondary, % GDP/cap	20.8	44 ○
2.1.3	School life expectancy, years	17.2	16
2.1.4	PISA scales in reading, maths and science	503.5	12
2.1.5	Pupil-teacher ratio, secondary ◴	16.7	82 ○ ◇
2.2	**Tertiary education**	**47.4**	**18**
2.2.1	Tertiary enrolment, % gross	61.4	48 ○
2.2.2	Graduates in science and engineering, %	26.9	28
2.2.3	Tertiary inbound mobility, %	18.3	8
2.3	**Research and development (R&D)**	**67.7**	**9**
2.3.1	Researchers, FTE/mn pop.	4,701.2	19
2.3.2	Gross expenditure on R&D, % GDP	1.8	21
2.3.3	Global corporate R&D investors, top 3, mn US$	84.5	8 ●
2.3.4	QS university ranking, top 3*	94.9	2 ● ◆
Infrastructure		**59.7**	**10**
3.1	**Information and communication technologies (ICTs)**	**93.4**	**2 ● ◆**
3.1.1	ICT access*	93.9	3 ● ◆
3.1.2	ICT use*	86.2	9
3.1.3	Government's online service*	95.9	6 ●
3.1.4	E-participation*	97.6	6 ●
3.2	**General infrastructure**	**34.7**	**40** ◇
3.2.1	Electricity output, GWh/mn pop.	4,804.5	48 ○
3.2.2	Logistics performance*	90.1	9
3.2.3	Gross capital formation, % GDP	15.7	111 ○ ◇
3.3	**Ecological sustainability**	**50.9**	**14**
3.3.1	GDP/unit of energy use	17.2	12
3.3.2	Environmental performance*	81.3	4 ●
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	3.6	26
Market sophistication		**78.1**	**4 ● ◆**
4.1	**Credit**	**65.3**	**10**
4.1.1	Ease of getting credit*	75.0	34
4.1.2	Domestic credit to private sector, % GDP	133.6	14
4.1.3	Microfinance gross loans, % GDP	n/a	n/a
4.2	**Investment**	**80.0**	**5 ● ◆**
4.2.1	Ease of protecting minority investors*	84.0	7 ◆
4.2.2	Market capitalization, % GDP	n/a	n/a
4.2.3	Venture capital investors, deals/bn PPP$ GDP	0.3	9
4.2.4	Venture capital recipients, deals/bn PPP$ GDP	0.2	7
4.3	**Trade, diversification, and market scale**	**89.1**	**3 ● ◆**
4.3.1	Applied tariff rate, weighted avg., %	1.8	25 ○
4.3.2	Domestic industry diversification	98.6	6 ●
4.3.3	Domestic market scale, bn PPP$	2,978.6	9

		Score/ Value	Rank
Business sophistication		**49.7**	**21**
5.1	**Knowledge workers**	**61.2**	**14**
5.1.1	Knowledge-intensive employment, %	50.6	7 ●
5.1.2	Firms offering formal training, %	n/a	n/a
5.1.3	GERD performed by business, % GDP	1.2	18
5.1.4	GERD financed by business, %	54.8	19
5.1.5	Females employed w/advanced degrees, %	24.1	17
5.2	**Innovation linkages**	**47.0**	**17**
5.2.1	University-industry R&D collaboration†	63.7	16
5.2.2	State of cluster development and depth†	59.7	26
5.2.3	GERD financed by abroad, % GDP	0.2	16
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.2	13
5.2.5	Patent families/bn PPP$ GDP	2.0	20
5.3	**Knowledge absorption**	**40.7**	**27**
5.3.1	Intellectual property payments, % total trade	1.7	19
5.3.2	High-tech imports, % total trade	10.8	23
5.3.3	ICT services imports, % total trade	1.5	51 ○
5.3.4	FDI net inflows, % GDP	2.8	59 ○
5.3.5	Research talent, % in businesses	41.9	32 ○
Knowledge and technology outputs		**52.3**	**10**
6.1	**Knowledge creation**	**65.0**	**8 ●**
6.1.1	Patents by origin/bn PPP$ GDP	5.6	16
6.1.2	PCT patents by origin/bn PPP$ GDP	2.0	19
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	n/a
6.1.4	Scientific and technical articles/bn PPP$ GDP	43.7	13
6.1.5	Citable documents H-index	100.0	1 ● ◆
6.2	**Knowledge impact**	**43.1**	**19**
6.2.1	Labor productivity growth, %	–3.0	112 ○ ◇
6.2.2	New businesses/th pop. 15–64	15.6	8 ◆
6.2.3	Software spending, % GDP	0.5	14
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	8.3	33
6.2.5	High-tech manufacturing, %	44.9	18
6.3	**Knowledge diffusion**	**48.9**	**15**
6.3.1	Intellectual property receipts, % total trade	2.8	8
6.3.2	Production and export complexity	78.7	13
6.3.3	High-tech exports, % total trade	8.6	19
6.3.4	ICT services exports, % total trade	3.3	28
Creative outputs		**54.0**	**4 ●**
7.1	**Intangible assets**	**56.0**	**10**
7.1.1	Trademarks by origin/bn PPP$ GDP	53.8	40
7.1.2	Global brand value, top 5,000, % GDP	160.7	8
7.1.3	Industrial designs by origin/bn PPP$ GDP	8.5	14
7.1.4	ICTs and organizational model creation†	79.1	6 ●
7.2	**Creative goods and services**	**44.8**	**6 ● ◆**
7.2.1	Cultural and creative services exports, % total trade	2.5	6 ● ◆
7.2.2	National feature films/mn pop. 15–69	6.2	36
7.2.3	Entertainment and media market/th pop. 15–69	61.8	8
7.2.4	Printing and other media, % manufacturing	1.9	18
7.2.5	Creative goods exports, % total trade	3.5	16
7.3	**Online creativity**	**59.0**	**10**
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	60.1	10
7.3.2	Country-code TLDs/th pop. 15–69	69.4	8 ●
7.3.3	Wikipedia edits/mn pop. 15–69	80.0	11
7.3.4	Mobile app creation/bn PPP$ GDP	22.4	24

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * an index; † a survey question. ◴ indicates that the economy's data are older than the base year; see Appendix IV for details, including the year of the data, at http://globalinnovationindex.org. Square brackets [ ] indicate that the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level.

DATA AVAILABILITY

The following tables list data that are either missing or outdated for the United Kingdom.

Missing data for the United Kingdom

Code	Indicator name	Economy year	Model year	Source
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
4.2.2	Market capitalization, % GDP	n/a	2019	World Federation of Exchanges
5.1.2	Firms offering formal training, %	n/a	2019	World Bank
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2019	World Intellectual Property Organization

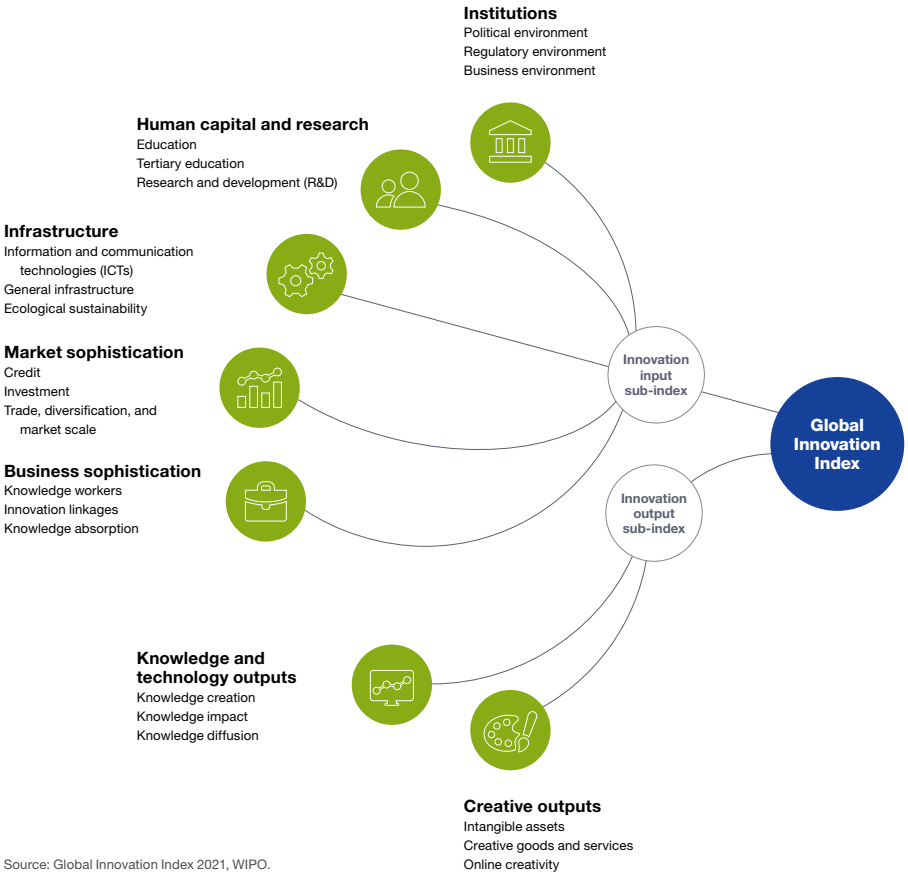
Outdated data for the United Kingdom

Code	Indicator name	Economy year	Model year	Source
2.1.5	Pupil-teacher ratio, secondary	2018	2019	UNESCO Institute for Statistics

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.



Source: Global Innovation Index 2021, WIPO.

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.