



GLOBAL INNOVATION INDEX 2019

POLAND

39th

Poland ranks 39th among the 129 economies featured in the GII 2019.

The Global Innovation Index (GII) is a ranking of world economies based on 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 Poland over the past three years, noting that data availability and the GII model influence year-on-year comparisons of the GII ranks. The confidence interval for Poland's ranking in the GII 2019 is between 37 and 39.

Poland's Rankings, 2017 - 2019

	GII	Innovation Inputs	Innovation Outputs
2019	39	37	41
2018	39	38	40
2017	38	37	41

- Poland performs better in Innovation Inputs than Outputs.
- This year Poland ranks 37th in Innovation Inputs, better than last year and the same compared to 2017.
- As for Innovation Outputs, Poland ranks 41st. This position is worse than last year and the same compared to 2017.

37th

Poland ranks 37th among the 50 high-income economies.

26th

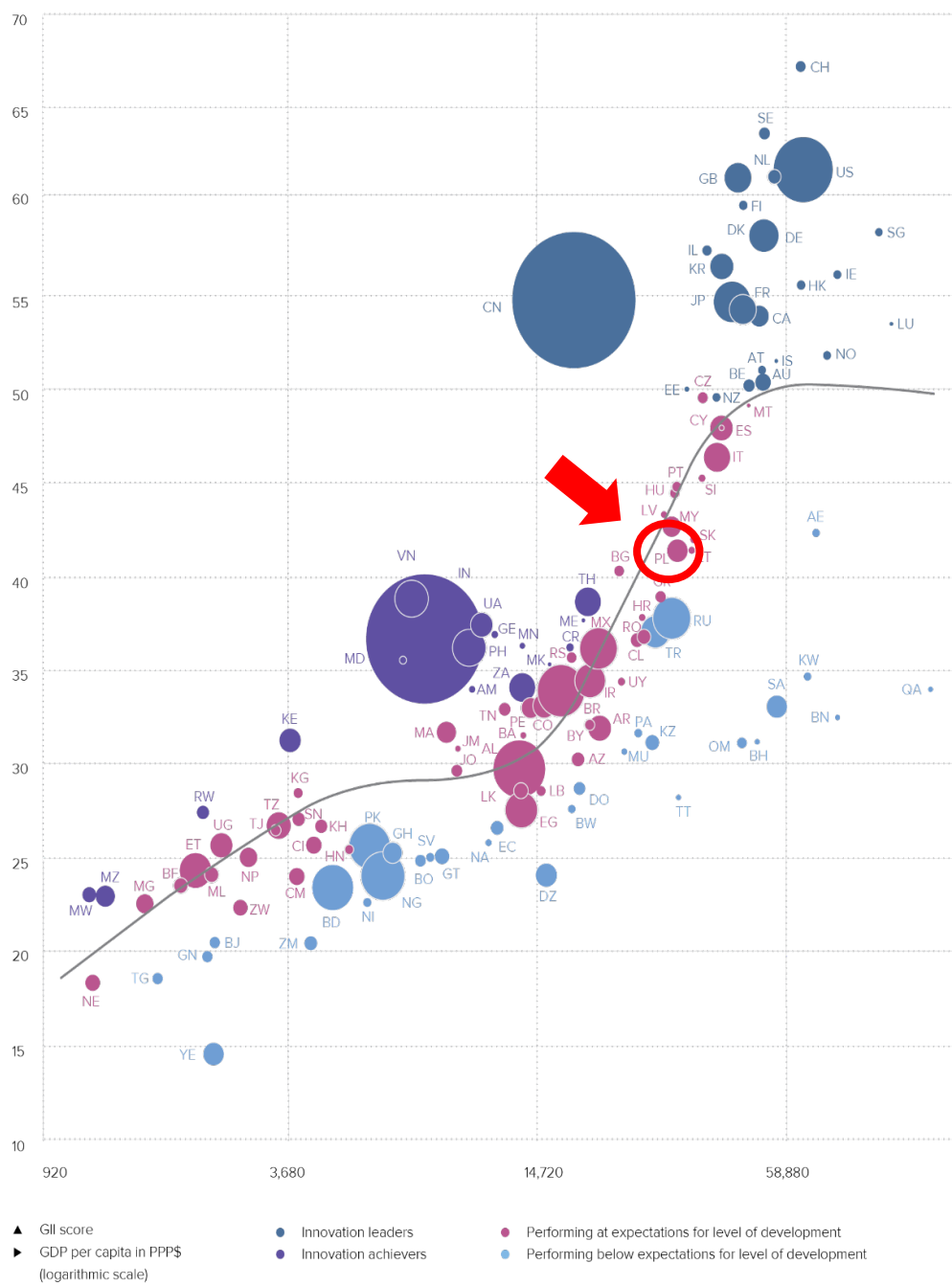
Poland ranks 26th among the 39 economies in Europe.

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 considered Innovation under-performers relative to GDP.

Relative to GDP, Poland performs at its expected level of development.

GII scores and GDP per capita in PPP US\$
(bubbles sized by population)

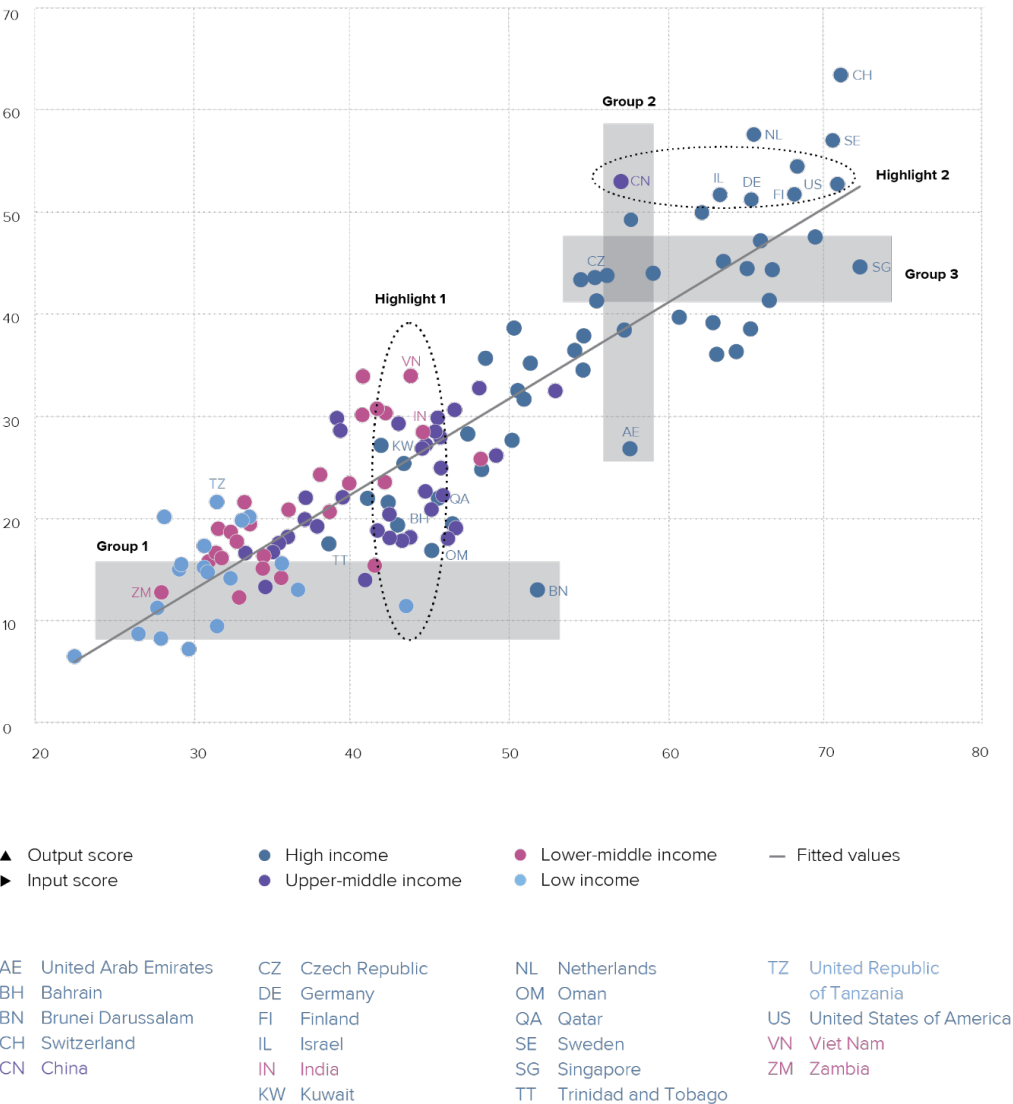


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

The chart below shows the relationship between innovation inputs and innovation outputs, indicating which economies best translate innovation inputs into innovation outputs. Economies appearing above the line are effectively translating their costly innovation investments into more and higher-quality outputs. In contrast, those below the line are not effectively translating innovation inputs into outputs.

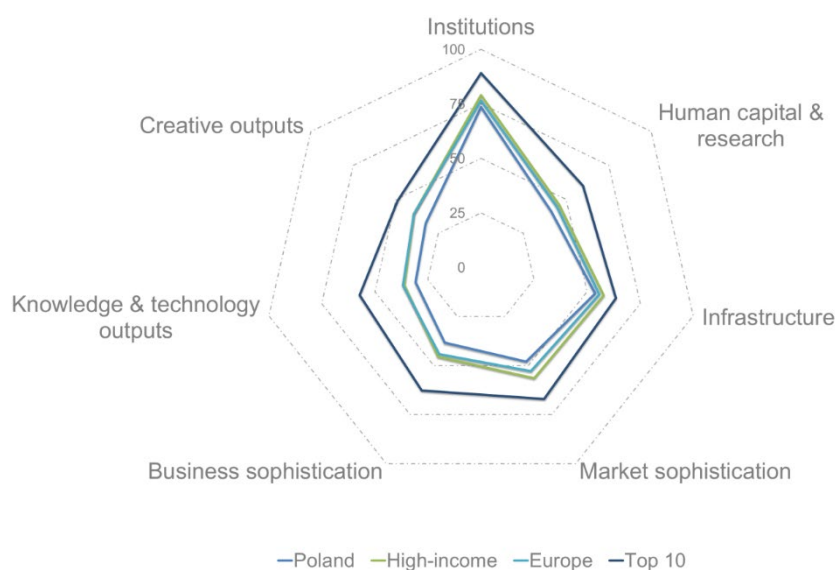
Poland produces less innovation outputs relative to its level of innovation investments.

Innovation input/output performance by income group, 2019



BENCHMARKING POLAND TO OTHER HIGH-INCOME ECONOMIES AND EUROPE

Poland's scores in the seven GII pillars



High-income economies

Poland scores below the high-income group average in all the 7 GII pillars.

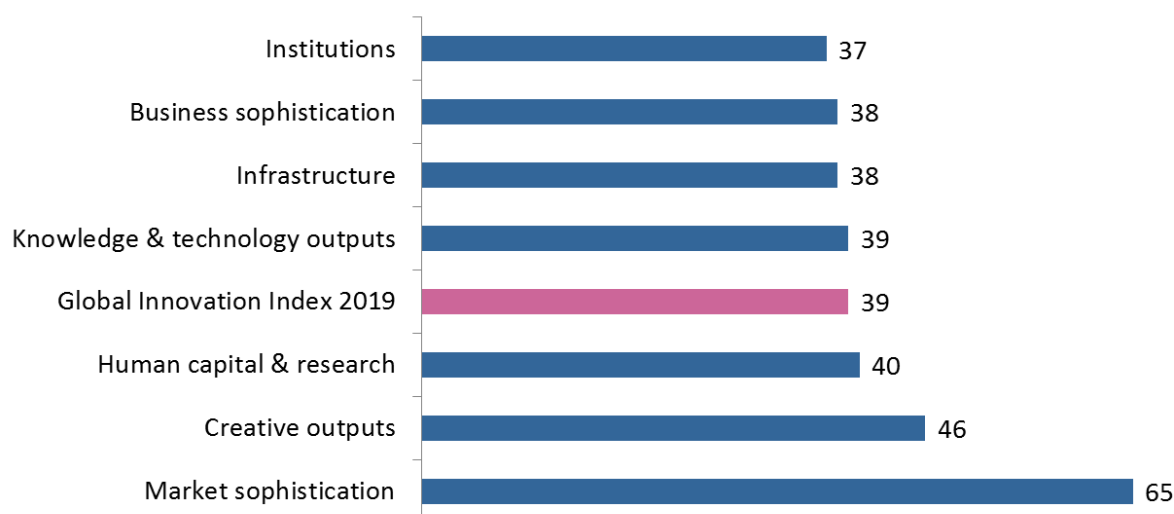
Europe Region

Compared to other economies in Europe, Poland performs below average in all the 7 GII pillars.

Top ranks are found in sub-pillars Business environment, Information and communication technologies (ICTs), Trade, competition, & market scale, and Knowledge workers where the country ranks in the top 35 worldwide.

OVERVIEW OF POLAND'S RANKINGS IN THE 7 GII AREAS

Poland performs the best in Institutions and its weakest performance is in Market sophistication.



*The highest possible ranking in each pillar is 1.

POLAND'S INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of Poland's strengths and weaknesses in the GII 2019.

Strengths		
Code	Indicator name	Rank
1.3.2	Ease of resolving insolvency*	23
2.1.3	School life expectancy, years	23
2.1.5	Pupil-teacher ratio, secondary	19
3.1.3	Government's online service*	17
4.3	Trade, competition, & market scale	21
4.3.3	Domestic market scale, bn PPP\$	22
5.1.5	Females employed w/advanced degrees, %	23
6.2.1	Growth rate of PPP\$ GDP/worker, %, 3-year average	16
6.3.2	High-tech net exports, % total trade	25
7.2.5	Creative goods exports, % total trade	12
7.3.2	Country-code TLDs/th pop. 15–69	23

Weaknesses		
Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal, salary weeks	77
1.3.1	Ease of starting a business*	93
3.2.3	Gross capital formation, % GDP	81
4.1	Credit	75
4.1.3	Microfinance gross loans, % GDP	54
4.2	Investment	98
4.2.2	Market capitalization, % GDP	45
5.2	Innovation linkages	75
5.2.1	University/industry research collaboration†	92
5.2.3	GERD financed by abroad, %	63
7.1.1	Trademarks by origin/bn PPP\$ GDP	67
7.1.4	ICTs & organizational model creation†	73
7.2.2	National feature films/mn pop. 15–69	69

STRENGTHS

- GII strengths for Poland are found in the seven GII pillars.
- In Institutions (37), Poland's strength is indicator Ease of resolving insolvency (23).
- In Human capital & research (40), Poland presents GII strengths in two indicators: School life expectancy (23) and Pupil-teacher ratio (19).
- In Infrastructure (38), indicator Government's online service (17) is a GII strength for the country.
- In Market sophistication (65), strengths are sub-pillar Trade, competition, & market scale (21) and indicator Domestic market scale (22).
- In Business sophistication (38), indicator Females employed with advanced degrees (23) is a Poland's strengths.
- In Knowledge & technology outputs (39), two indicators - Labor productivity growth (16) and High-tech exports (25) – are relative strengths for the country.
- In Creative outputs (46), Poland has strengths in two indicators: Creative goods exports (12) and Country-code TLDs (23).

WEAKNESSES

- Poland's weaknesses in the GII are found in five of the seven GII pillars.
- The highest number of relative weaknesses for Poland is found in pillar Market sophistication (65), and in particular in sub-pillars Credit (75) and Investment (98) and indicators Microfinance gross loans (54) and Market capitalization (45).
- Other three GII weaknesses are in Business sophistication (38). These are sub-pillar Innovation linkages (75) and indicators University-industry research collaboration (92) and R&D financed by abroad (63).
- In Creative outputs (46), three indicators - Trademarks by origin (67), ICTs & organizational model creation (73), and National feature films (69) - are relative weaknesses for this country.
- In Institutions (37), Poland's relative weaknesses are indicators Cost of redundancy dismissal (77) and Ease of starting a business (93).
- In Infrastructure (38), Poland has one weakness in indicator Gross capital formation (81).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2018 rank
41	37	High	EUR	38.1	1,201.9	31,938.7	39
Score/Value Rank				Score/Value Rank			
INSTITUTIONS 73.6 37				BUSINESS SOPHISTICATION 38.4 38			
1.1	Political environment			68.2	39	5.1	Knowledge workers
1.1.1	Political and operational stability*			80.7	35	5.1.1	Knowledge-intensive employment, %.....
1.1.2	Government effectiveness*			61.9	40	5.1.2	Firms offering formal training, % firms.....
1.2	Regulatory environment			72.9	42	5.1.3	GERD performed by business, % GDP.....
1.2.1	Regulatory quality*			65.6	36	5.1.4	GERD financed by business, %.....
1.2.2	Rule of law*			58.9	42	5.1.5	Females employed w/advanced degrees, %.....
1.2.3	Cost of redundancy dismissal, salary weeks.....			18.8	77 ○	5.2	Innovation linkages
1.3	Business environment			79.7	34	5.2.1	University/industry research collaboration†.....
1.3.1	Ease of starting a business*			82.9	93 ○ ◇	5.2.2	State of cluster development†.....
1.3.2	Ease of resolving insolvency*			76.5	23 ●	5.2.3	GERD financed by abroad, %.....
2.1	Education			57.0	39	5.2.4	JV-strategic alliance deals/bn PPP\$ GDP.....
2.1.1	Expenditure on education, % GDP.....			4.8	54	5.2.5	Patent families 2+ offices/bn PPP\$ GDP.....
2.1.2	Government funding/pupil, secondary, % GDP/cap.....			22.1	41	5.3	Knowledge absorption
2.1.3	School life expectancy, years.....			16.4	23 ●	5.3.1	Intellectual property payments, % total trade.....
2.1.4	PISA scales in reading, maths, & science.....			503.9	17	5.3.2	High-tech imports, % total trade.....
2.1.5	Pupil-teacher ratio, secondary.....			9.2	19 ●	5.3.3	ICT services imports, % total trade.....
2.2	Tertiary education			35.5	52	5.3.4	FDI net inflows, % GDP.....
2.2.1	Tertiary enrolment, % gross.....			66.6	34	5.3.5	Research talent, % in business enterprise.....
2.2.2	Graduates in science & engineering, %.....			22.9	44	6.1	Knowledge creation
2.2.3	Tertiary inbound mobility, %.....			3.4	59	6.1.1	Patents by origin/bn PPP\$ GDP.....
2.3	Research & development (R&D)			31.0	37	6.1.2	PCT patents by origin/bn PPP\$ GDP.....
2.3.1	Researchers, FTE/mn pop.....			3,001.9	30	6.1.3	Utility models by origin/bn PPP\$ GDP.....
2.3.2	Gross expenditure on R&D, % GDP.....			1.0	35	6.1.4	Scientific & technical articles/bn PPP\$ GDP.....
2.3.3	Global R&D companies, avg. exp. top 3, mn US\$.....			39.9	42	6.1.5	Citable documents H-index.....
2.3.4	QS university ranking, average score top 3*.....			25.4	42	6.2	Knowledge impact
3.1	Information & communication technologies (ICTs)			81.5	28	6.2.1	Growth rate of PPP\$ GDP/worker, %.....
3.1.1	ICT access*.....			74.0	50 ◇	6.2.2	New businesses/th pop. 15-64.....
3.1.2	ICT use*.....			69.8	35	6.2.3	Computer software spending, % GDP.....
3.1.3	Government's online service*.....			93.1	17 ●	6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP.....
3.1.4	E-participation*.....			89.3	31	6.2.5	High- & medium-high-tech manufactures, %.....
3.2	General infrastructure			38.2	49	6.3	Knowledge diffusion
3.2.1	Electricity output, kWh/mn pop.....			4,421.3	50	6.3.1	Intellectual property receipts, % total trade.....
3.2.2	Logistics performance*.....			69.0	27	6.3.2	High-tech net exports, % total trade.....
3.2.3	Gross capital formation, % GDP.....			21.5	81 ○	6.3.3	ICT services exports, % total trade.....
3.3	Ecological sustainability			41.5	50	6.3.4	FDI net outflows, % GDP.....
3.3.1	GDP/unit of energy use.....			9.7	57	7.1	Intangible assets
3.3.2	Environmental performance*.....			64.1	46	7.1.1	Trademarks by origin/bn PPP\$ GDP.....
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP.....			2.6	39	7.1.2	Industrial designs by origin/bn PPP\$ GDP.....
4.1	Credit			33.5	75 ○ ◇	7.1.3	ICTs & business model creation*.....
4.1.1	Ease of getting credit*.....			75.0	29	7.1.4	ICTs & organizational model creation*.....
4.1.2	Domestic credit to private sector, % GDP.....			52.5	63	7.2	Creative goods & services
4.1.3	Microfinance gross loans, % GDP.....			0.1	54 ○	7.2.1	Cultural & creative services exports, % total trade.....
4.2	Investment			35.3	98 ○	7.2.2	National feature films/mn pop. 15-69.....
4.2.1	Ease of protecting minority investors*.....			61.7	54	7.2.3	Entertainment & Media market/th pop. 15-69.....
4.2.2	Market capitalization, % GDP.....			32.2	45 ○	7.2.4	Printing & other media, % manufacturing.....
4.2.3	Venture capital deals/bn PPP\$ GDP.....			0.0	41	7.2.5	Creative goods exports, % total trade.....
4.3	Trade, competition, & market scale			75.0	21 ●	7.3	Online creativity
4.3.1	Applied tariff rate, weighted avg., %.....			1.8	23	7.3.1	Generic top-level domains (TLDs)/th pop. 15-69.....
4.3.2	Intensity of local competition*.....			70.2	58	7.3.2	Country-code TLDs/th pop. 15-69.....
4.3.3	Domestic market scale, bn PPP\$.....			1,201.9	22 ●	7.3.3	Wikipedia edits/mn pop. 15-69.....
						7.3.4	Mobile app creation/bn PPP\$ GDP.....

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 II 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 missing or are outdated for Poland.

Missing data

Code	Indicator name	Country year	Model year	Source
7.1.2	Industrial designs by origin/bn PPP\$ GDP	n/a	2017	World Intellectual Property Organization

Outdated data

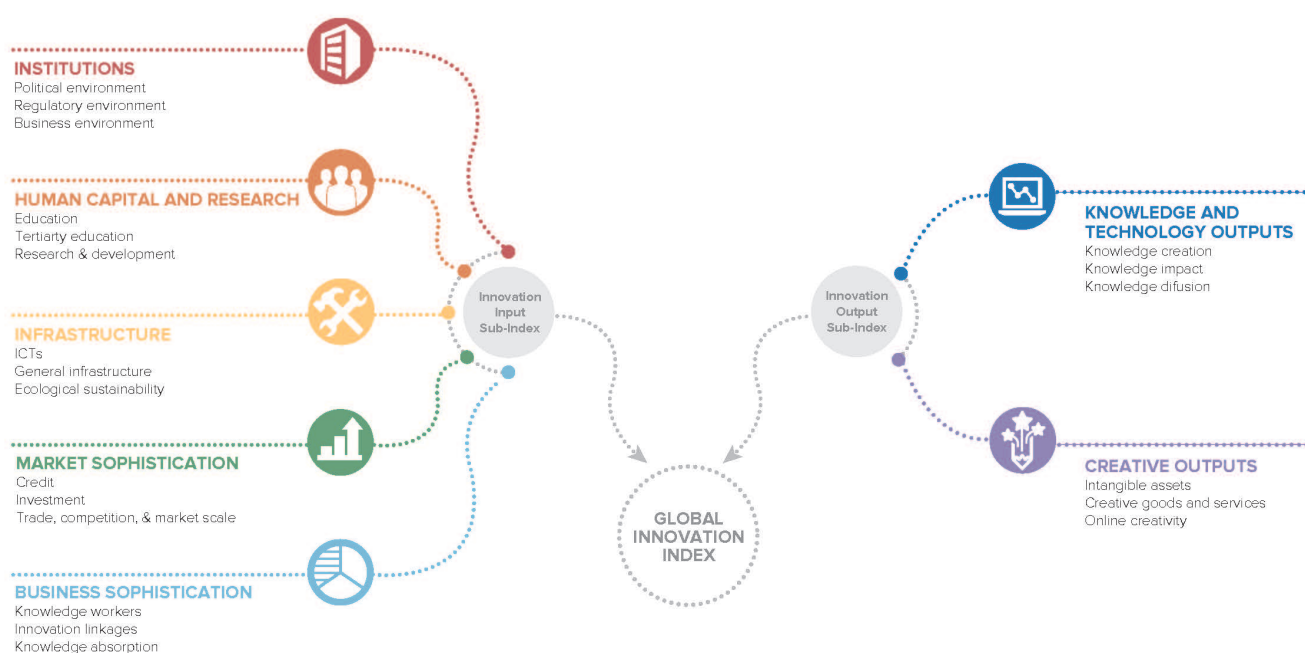
Code	Indicator name	Country year	Model year	Source
2.1.5	Pupil-teacher ratio, secondary	2016	2017	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2016	2017	UNESCO Institute for Statistics
4.1.3	Microfinance gross loans, % GDP	2015	2017	Microfinance Information Exchange

ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. In 2019, the GII presents its 12th edition devoted to the theme **Creating Healthy Lives—The Future of Medical Innovation**.

Recognizing that innovation is a key driver of economic development, the GII aims to provide a rich innovation ranking and 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 countries that incorporate the GII into their innovation agendas.

Framework of the Global Innovation Index 2019



The Index is a ranking of the innovation capabilities and results of world economies. It measures innovation based on criteria that includes 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 containing three sub-pillars.



www.globalinnovationindex.org



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