

GLOBAL INNOVATION INDEX 2019

CHILE

51st

Chile ranks 51st 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 Chile 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 Chile's ranking in the GII 2019 is between 47 and 56. Between 2018 and 2019, the rank decrease for Chile is the result of a mix of decreased performance, changes to the underlying GII model, and new data becoming available (page 8).

Chile's Rankings, 2017 - 2019

	GII	Innovation Inputs	Innovation Outputs
2019	51	43	62
2018	47	45	53
2017	46	42	53

- Chile performs better in Innovation Inputs than Outputs.
- This year Chile ranks 43rd in Innovation Inputs, better than last year but worse compared to 2017.
- As for Innovation Outputs, Chile ranks 62nd. This position is worse than 2018 and 2017.

40th

Chile ranks 40th among the 50 high-income economies.

1st

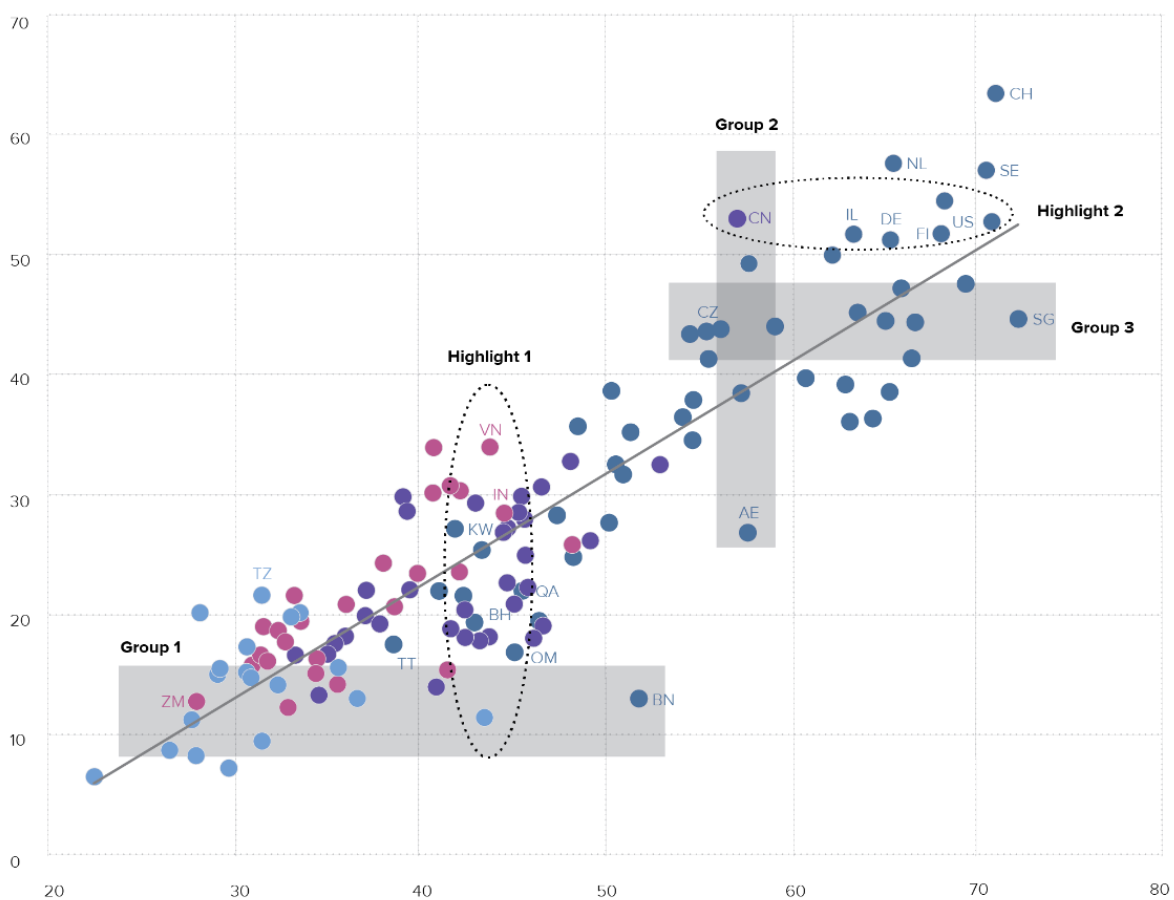
Chile ranks 1st among the 19 economies in Latin America and the Caribbean.

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.

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

Innovation input/output performance by income group, 2019

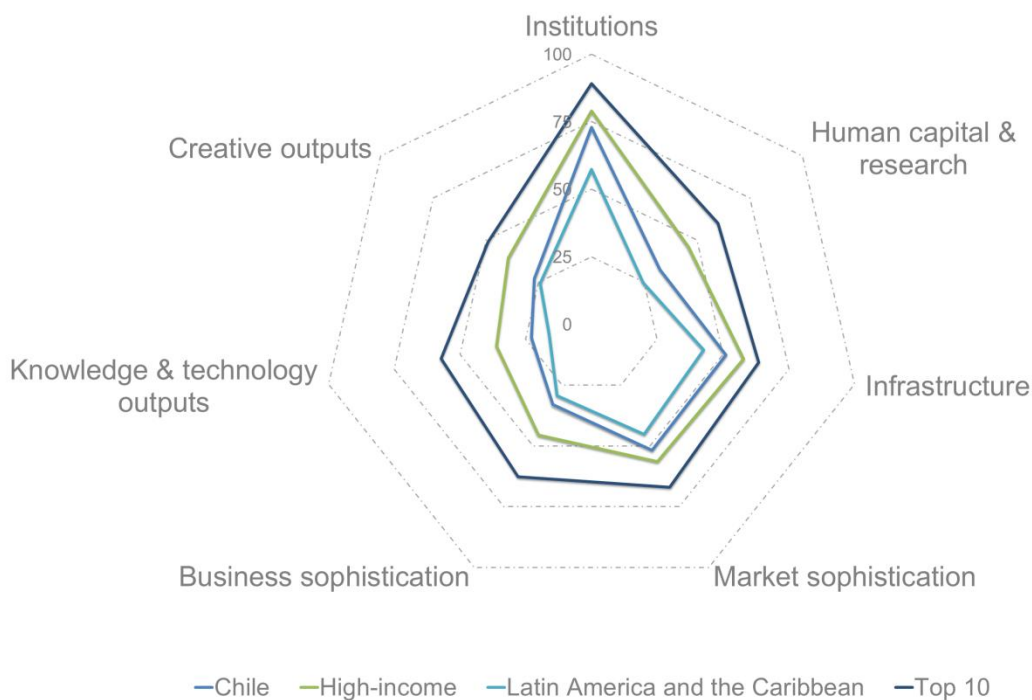


- ▲ Output score
- ▶ Input score
- High income
- Upper-middle income
- Lower-middle income
- Low income
- Fitted values

AE United Arab Emirates	CZ Czech Republic	NL Netherlands	TZ United Republic of Tanzania
BH Bahrain	DE Germany	OM Oman	US United States of America
BN Brunei Darussalam	FI Finland	QA Qatar	VN Viet Nam
CH Switzerland	IL Israel	SE Sweden	ZM Zambia
CN China	IN India	SG Singapore	
	KW Kuwait	TT Trinidad and Tobago	

BENCHMARKING CHILE TO OTHER HIGH-INCOME ECONOMIES AND THE LATIN AMERICA AND THE CARIBBEAN REGION

Chile's scores in the seven GII pillars



High-income economies

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

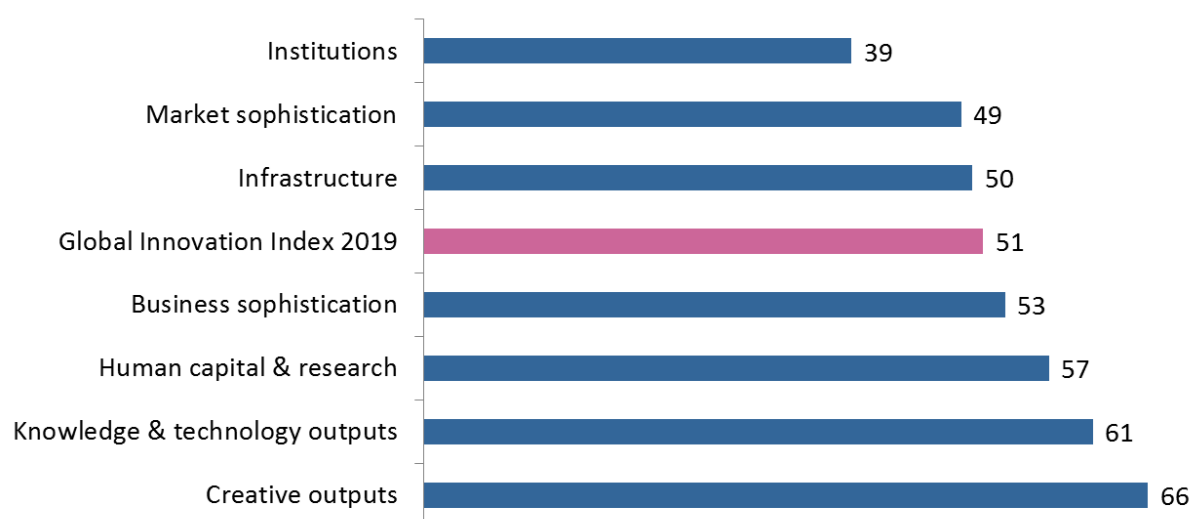
Latin America and the Caribbean Region

Compared to other economies in the Latin America and the Caribbean region, Chile performs above average in all 7 GII pillars.

Top ranks are found in areas such as Political environment; and Trade, competition, & market scale where Chile ranks in the top 40 worldwide.

OVERVIEW OF CHILE'S RANKINGS IN THE 7 GII AREAS

Chile performs the best in Institutions and its weakest performance is in Creative Outputs.



*The highest possible ranking in each pillar is 1.

CHILE'S INNOVATION STRENGTHS AND WEAKNESSES

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

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2.1	Regulatory quality*	21	1.2.3	Cost of redundancy dismissal, salary weeks	107
2.1.3	School life expectancy, years	20	2.1.5	Pupil-teacher ratio, secondary	79
2.2.1	Tertiary enrolment, % gross	5	2.2.3	Tertiary inbound mobility, %	100
4.1.2	Domestic credit to private sector, % GDP	19	2.3.3	Global R&D companies, top 3, in mn US\$	43
4.2.2	Market capitalization, % GDP	15	5.2	Innovation linkages	96
4.3	Trade, competition, & market scale	24	5.2.3	GERD financed by abroad, %	77
4.3.1	Applied tariff rate, weighted mean, %	4	5.2.4	JV-strategic alliance deals/bn PPP\$ GDP	85
5.1.2	Firms offering formal training, % firms	10	5.3.3	ICT services imports, % total trade	88
5.3.1	Intellectual property payments, % total trade	12	6.3.3	ICT services exports, % total trade	102
6.2.2	New businesses/th pop. 15-64	15	7.1.2	Industrial designs by origin/bn PPP\$ GDP	105
6.3.4	FDI net outflows, % GDP, 3-year average	16	7.2.5	Creative goods exports, % total trade	90

STRENGTHS

- Chile has strengths in five of the seven GII pillars.
- Most of them are found in Market sophistication (49), where Chile has a relative strength in sub-pillar Trade, competition, & market scale (24); and its indicator Applied tariff rate (4). In this pillar, the indicators Domestic credit to private sector (19) and Market capitalization (15) are also relative strengths for this economy.
- In Human capital & research (57), Chile performs relatively well in indicators School life expectancy (20) and Tertiary enrolment (5).
- In Business sophistication (53), two other indicators – Firms offering formal training (10) and Intellectual property payments (12) – are relative strengths for Chile.
- The indicators New businesses (15) and FDI outflows (16) are also relative strengths.
- In Institutions (39), Chile has a relative strength in indicator Regulatory quality (21).

WEAKNESSES

- Chile's weaknesses in the GII are present in five of the seven GII pillars.
- In Business sophistication (53), the GII pillar where Chile has the highest number of relative weaknesses, these are mainly in the sub-pillar Innovation linkages (96), notably in indicators R&D financed by abroad (77), and JV–strategic alliance deals (85).
- ICT services imports (88) is also a relative weakness in the Business sophistication pillar.
- In Human capital & research (57), three indicators are relative weaknesses: Pupil-teacher ratio (79), Tertiary inbound mobility (100), and Global R&D companies' expenditures (43).
- In Creative outputs (66), the indicators Industrial designs by origin (105) and Creative goods exports (90) are relative weaknesses for Chile.
- Two other weaknesses for this economy are within the pillars Institutions (39) and Knowledge & technology outputs (61), notably in indicators Cost of redundancy dismissal (107) and ICT services exports (102) respectively.

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2018 rank
62	43	High	LCN	18.2	481.0	25,978.3	47
INSTITUTIONS 73.0 39				BUSINESS SOPHISTICATION 33.1 53			
1.1	Political environment	71.7	37	5.1	Knowledge workers	44.4	47
1.1.1	Political and operational stability*	80.7	35	5.1.1	Knowledge-intensive employment, %	26.4	53
1.1.2	Government effectiveness*	67.2	36	5.1.2	Firms offering formal training, % firms	57.5	10
1.2	Regulatory environment	72.9	41	5.1.3	GERD performed by business, % GDP	0.1	57
1.2.1	Regulatory quality*	77.8	21	5.1.4	GERD financed by business, %	35.8	52
1.2.2	Rule of law*	73.1	29	5.1.5	Females employed w/advanced degrees, %	8.8	75
1.2.3	Cost of redundancy dismissal, salary weeks	27.4	107	5.2	Innovation linkages	18.7	96
1.3	Business environment	74.5	50	5.2.1	University/industry research collaboration*	43.8	55
1.3.1	Ease of starting a business*	89.1	58	5.2.2	State of cluster development*	44.1	77
1.3.2	Ease of resolving insolvency*	59.9	46	5.2.3	GERD financed by abroad, %	1.9	77
HUMAN CAPITAL & RESEARCH 32.5 57				KNOWLEDGE & TECHNOLOGY OUTPUTS 22.9 61			
2.1	Education	49.8	60	5.3	Knowledge absorption	36.3	49
2.1.1	Expenditure on education, % GDP	5.4	30	5.3.1	Intellectual property payments, % total trade	2.2	12
2.1.2	Government funding/pupil, secondary, % GDP/cap	18.2	59	5.3.2	High-tech imports, % total trade	8.5	50
2.1.3	School life expectancy, years	16.5	20	5.3.3	ICT services imports, % total trade	0.7	88
2.1.4	PISA scales in reading, maths, & science	442.7	44	5.3.4	FDI net inflows, % GDP	5.3	28
2.1.5	Pupil-teacher ratio, secondary	18.4	79	5.3.5	Research talent, % in business enterprise	29.5	42
2.2	Tertiary education	34.3	56	6.1	Knowledge creation	14.6	56
2.2.1	Tertiary enrolment, % gross	91.5	5	6.1.1	Patents by origin/bn PPP\$ GDP	0.9	64
2.2.2	Graduates in science & engineering, %	20.5	62	6.1.2	PCT patents by origin/bn PPP\$ GDP	0.5	35
2.2.3	Tertiary inbound mobility, %	0.4	100	6.1.3	Utility models by origin/bn PPP\$ GDP	0.2	41
2.3	Research & development (R&D)	13.3	49	6.1.4	Scientific & technical articles/bn PPP\$ GDP	13.2	40
2.3.1	Researchers, FTE/mn pop.	502.1	67	6.1.5	Citable documents H-index	22.5	37
2.3.2	Gross expenditure on R&D, % GDP	0.4	71	6.2	Knowledge impact	38.3	56
2.3.3	Global R&D companies, avg. exp. top 3, mn US\$	0.0	43	6.2.1	Growth rate of PPP\$ GDP/worker, %	0.7	67
2.3.4	QS university ranking, average score top 3*	39.5	32	6.2.2	New businesses/th pop. 15-64	8.9	15
INFRASTRUCTURE 51.0 50				CREATIVE OUTPUTS 27.2 66			
3.1	Information & communication technologies (ICTs)	76.1	41	6.3	Knowledge diffusion	15.8	74
3.1.1	ICT access*	72.8	57	6.3.1	Intellectual property receipts, % total trade	0.1	65
3.1.2	ICT use*	66.3	41	6.3.2	High-tech net exports, % total trade	0.8	72
3.1.3	Government's online service*	83.3	37	6.3.3	ICT services exports, % total trade	0.5	102
3.1.4	E-participation*	82.0	46	6.3.4	FDI net outflows, % GDP	3.8	16
3.2	General infrastructure	36.5	59	7.1	Intangible assets	45.4	48
3.2.1	Electricity output, kWh/mn pop.	4,262.7	51	7.1.1	Trademarks by origin/bn PPP\$ GDP	70.2	28
3.2.2	Logistics performance*	58.6	33	7.1.2	Industrial designs by origin/bn PPP\$ GDP	0.2	105
3.2.3	Gross capital formation, % GDP	22.4	71	7.1.3	ICTs & business model creation*	72.1	28
3.3	Ecological sustainability	40.3	53	7.1.4	ICTs & organizational model creation*	57.8	54
3.3.1	GDP/unit of energy use	10.1	49	7.2	Creative goods & services	10.9	80
3.3.2	Environmental performance*	57.5	73	7.2.1	Cultural & creative services exports, % total trade	0.3	65
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	3.1	31	7.2.2	National feature films/mn pop. 15-69	3.7	49
MARKET SOPHISTICATION 51.7 49							
4.1	Credit	41.4	51	7.2.3	Entertainment & Media market/th pop. 15-69	13.5	31
4.1.1	Ease of getting credit*	55.0	77	7.2.4	Printing & other media, % manufacturing	1.1	59
4.1.2	Domestic credit to private sector, % GDP	112.6	19	7.2.5	Creative goods exports, % total trade	0.2	90
4.1.3	Microfinance gross loans, % GDP	0.9	21	7.3	Online creativity	6.9	58
4.2	Investment	40.3	71	7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	2.2	76
4.2.1	Ease of protecting minority investors*	60.0	61	7.3.2	Country-code TLDs/th pop. 15-69	12.2	37
4.2.2	Market capitalization, % GDP	89.8	15	7.3.3	Wikipedia edits/mn pop. 15-69	16.2	56
4.2.3	Venture capital deals/bn PPP\$ GDP	0.0	53	7.3.4	Mobile app creation/bn PPP\$ GDP	2.4	61
4.3	Trade, competition, & market scale	73.3	24				
4.3.1	Applied tariff rate, weighted avg., %	0.5	4				
4.3.2	Intensity of local competition*	74.5	30				
4.3.3	Domestic market scale, bn PPP\$	481.0	42				

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 AND GII MODEL

Chile has complete data coverage in the GII 2019. The following table lists outdated data.

Indicator Cultural & creative services exports, for which data were not available last year, becomes available in the GII 2019.

Outdated data

Code	Indicator name	Country year	Model year	Source
2.3.1	Researchers, FTE/mn pop.	2016	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	2016	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.2	Firms offering formal training, % firms	2010	2013	World Bank
5.1.3	GERD performed by business, % GDP	2016	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.3.5	Research talent, % in business enterprise	2016	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
6.2.5	High- & medium-high-tech manufactures, %	2015	2016	United Nations Industrial Development Organization
7.2.4	Printing & other media, % manufacturing	2015	2016	United Nations Industrial Development Organization

Model changes

The table below provides a summary of the adjustments to the GII 2019 framework.

Changes to the GII 2019 framework

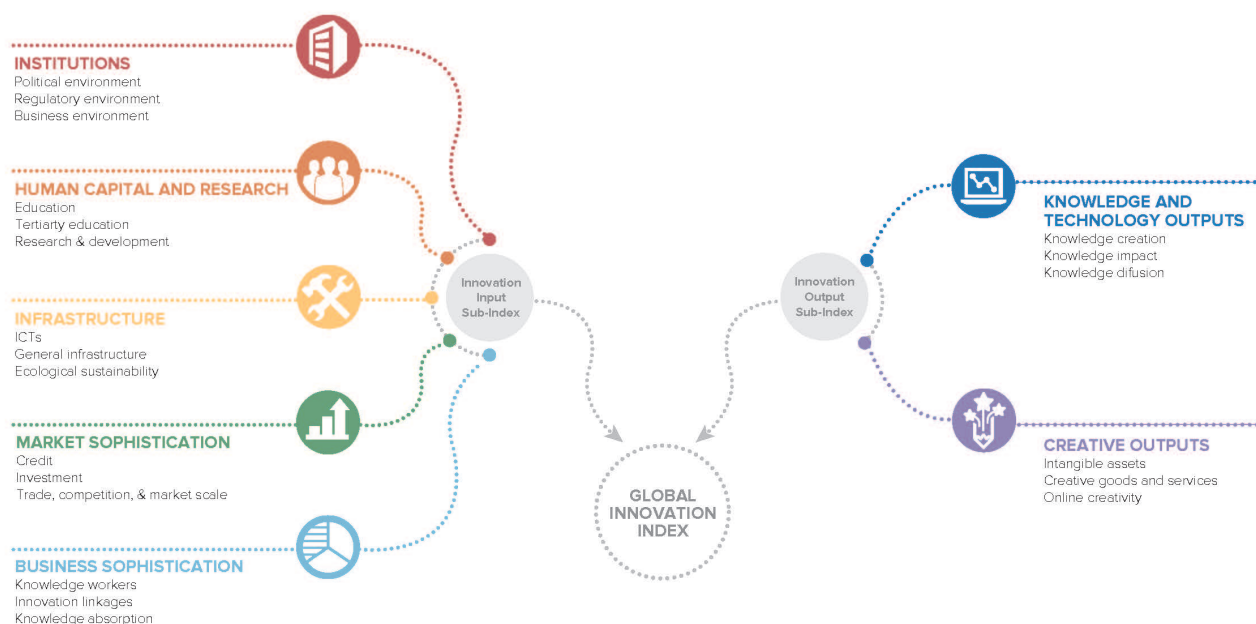
GII 2018		Adjustment	GII 2019	
1.1.1	Political stability & safety	Replaced	1.1.1	Political & operational stability
3.3.2	Environmental performance	Indicator changed at source	3.3.2	Environmental performance
5.3.1	Intellectual property payments, % total trade	Methodology change	5.3.1	Intellectual property payments, % total trade (3 year avg.)
5.3.2	High-tech imports, % total trade	Methodology change	5.3.2	High-tech imports, % total trade
6.2.1	Growth rate of PPP\$ GDP/worker, %	Methodology change	6.2.1	Growth rate of PPP\$ GDP/worker, % (3 year avg.)
6.3.1	Intellectual property receipts, % total trade	Methodology change	6.3.1	Intellectual property receipts, % total trade (3 year avg.)
7.3.4	Mobile app creation/bn PPP\$ GDP	Methodology change	7.3.4	Mobile app creation/bn PPP\$ GDP

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.

