



FINLAND

7th

Finland ranks 7th among the 131 economies featured in the GII 2020.

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 Finland 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 Finland in the GII 2020 is between ranks 7 and 10.

Rankings of Finland (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	7	8	8
2019	6	7	7
2018	7	5	8

- Finland performs the same in innovation inputs as in innovation outputs in 2020.
- This year Finland ranks 8th in innovation inputs, lower than last year and lower compared to 2018.
- As for innovation outputs, Finland ranks 8th. This position is lower than last year and the same as 2018.

7th

Finland ranks 7th among the 49 high-income group economies.

6th

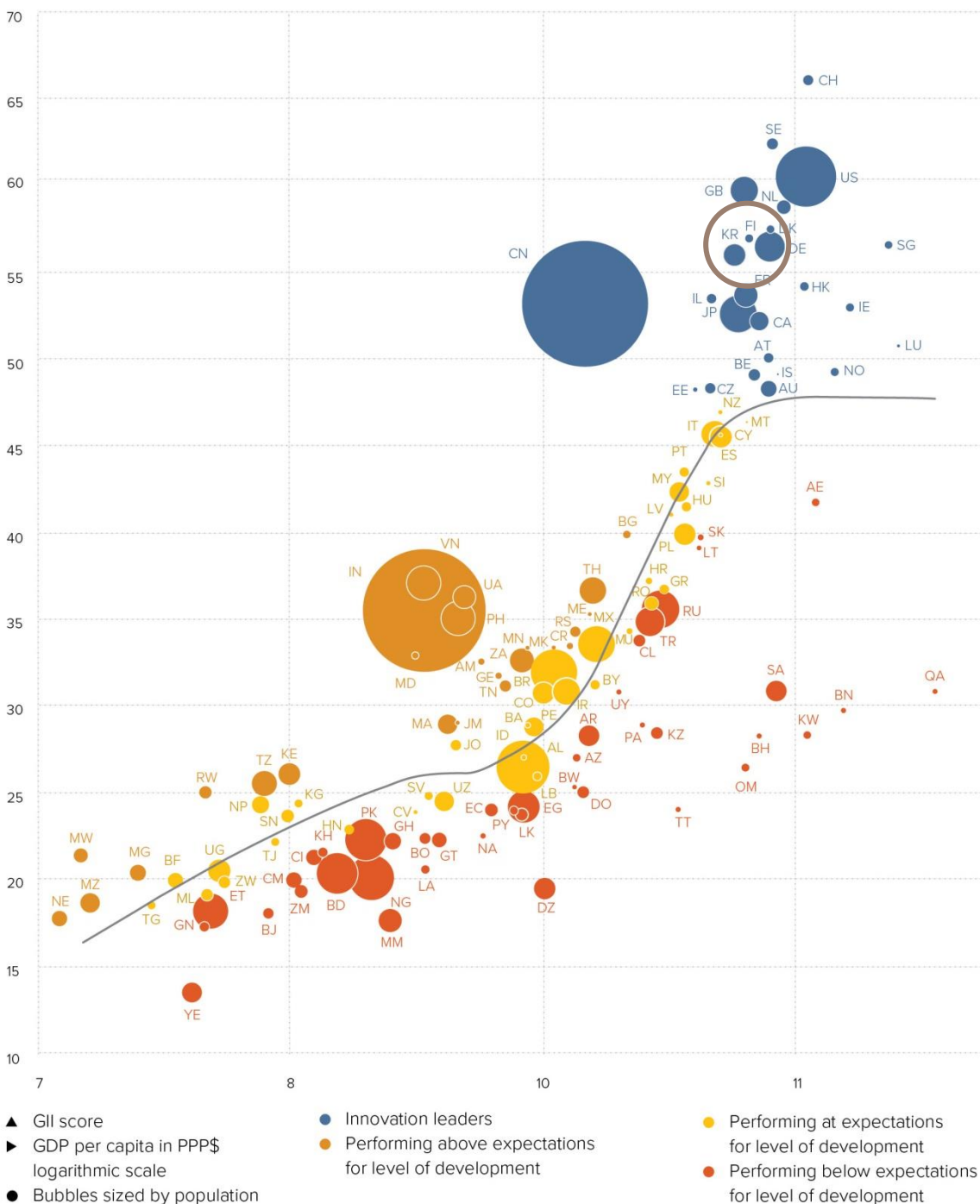
Finland ranks 6th among the 39 economies in Europe.

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, Finland is performing above expectations for its level of development.

The positive relationship between innovation and development

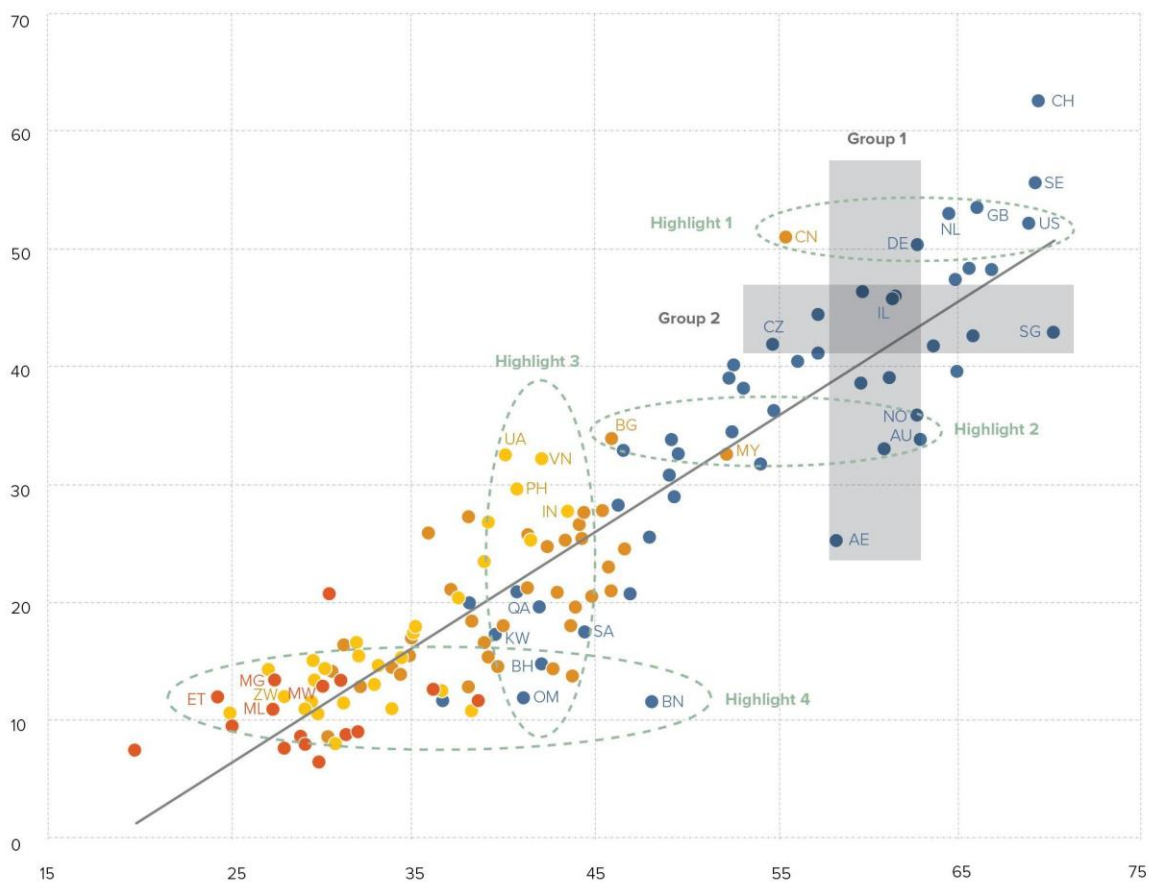


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

Innovation input to output performance, 2020

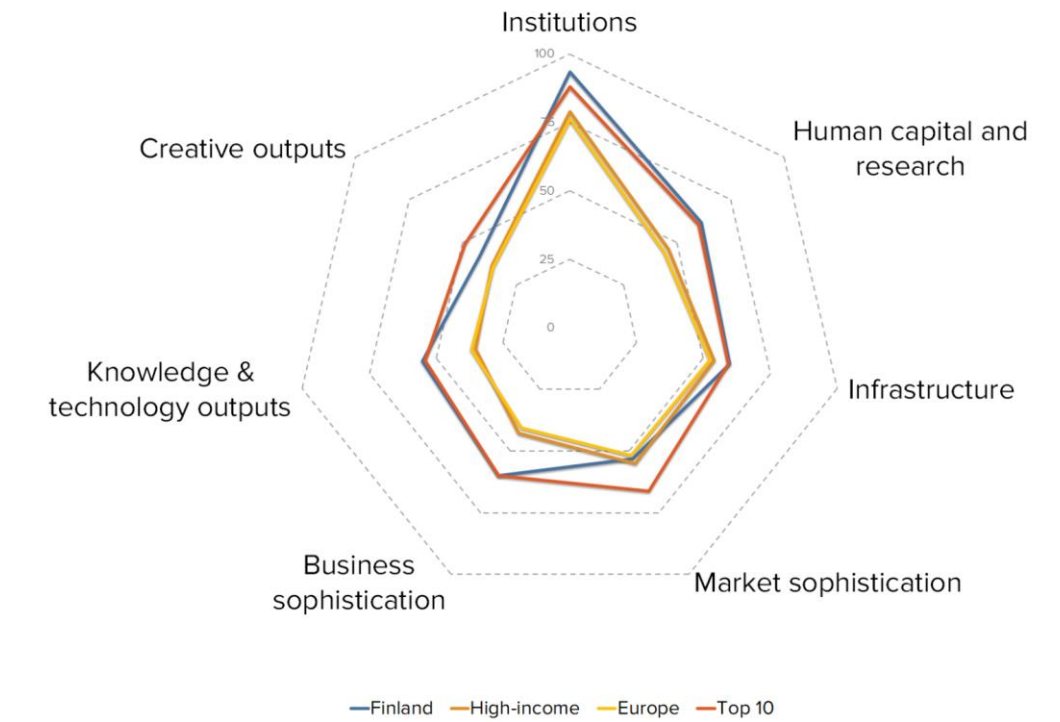


▲ Output score ● High income group ● Lower middle-income group — Fitted values
 ► Input score ● Upper middle-income group ● Low income group

AU	Australia	IN	India	NL	Netherlands	CH	Switzerland
BH	Bahrain	IL	Israel	NO	Norway	UA	Ukraine
BN	Brunei Darussalam	KW	Kuwait	OM	Oman	AE	United Arab Emirates
BG	Bulgaria	MG	Madagascar	PH	Philippines	GB	United Kingdom
CN	China	MW	Malawi	QA	Qatar	US	United States of America
CZ	Czech Republic	ML	Mali	SA	Saudi Arabia	VN	Viet Nam
ET	Ethiopia	MY	Malaysia	SG	Singapore	ZW	Zimbabwe
DE	Germany			SE	Sweden		

BENCHMARKING FINLAND AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND EUROPE

Finland's scores in the seven GII pillars



High-income group economies

Finland has high scores in six out of the seven GII pillars: Institutions, Human capital & research, Infrastructure, Business sophistication, Knowledge & technology outputs and Creative outputs, which are above average for the high-income group.

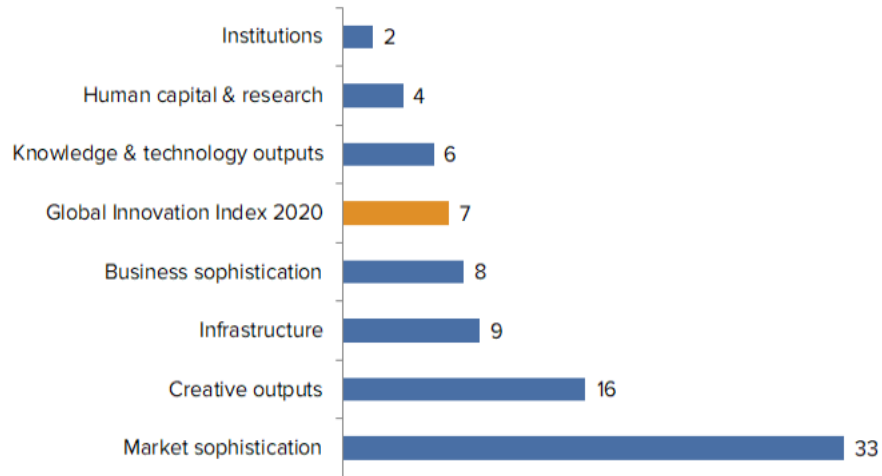
Conversely, Finland scores below average for its income group in one pillar: Market sophistication.

Europe

Compared to other economies in Europe, Finland performs above average in all seven of the GII pillars.

OVERVIEW OF FINLAND RANKINGS IN THE SEVEN GII AREAS

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



*The highest possible ranking in each pillar is 1.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Finland in the GII 2020.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1	Institutions	2	2.1.5	Pupil-teacher ratio, secondary	65
1.1	Political environment	3	3.3.1	GDP/unit of energy use	95
1.1.2	Government effectiveness*	3	4.1.1	Ease of getting credit*	74
1.2	Regulatory environment	5	4.2.1	Ease of protecting minority investors*	60
1.2.2	Rule of law*	1	4.3.2	Intensity of local competition†	100
1.3	Business environment	1	5.3.2	High-tech imports, % total trade	64
1.3.2	Ease of resolving insolvency*	1	5.3.4	FDI net inflows, % GDP	76
2	Human capital & research	4	6.2.1	Growth rate of PPP\$ GDP/worker, %	81
2.1.3	School life expectancy, years	4	7.1.1	Trademarks by origin/bn PPP\$ GDP	66
3.1.4	E-participation*	1	7.2.4	Printing & other media, % manufacturing	57
5.2	Innovation linkages	3			
5.2.1	University/industry research collaboration†	3			
5.3.3	ICT services imports, % total trade	2			
6.1.4	Scientific & technical articles/bn PPP\$ GDP	5			
6.3	Knowledge diffusion	3			
6.3.1	Intellectual property receipts, % total trade	1			
6.3.3	ICT services exports, % total trade	5			
7.1.4	ICTs & organizational model creation†	3			
7.3.4	Mobile app creation/bn PPP\$ GDP	1			

STRENGTHS

GII strengths for Finland are found in six of the seven GII pillars.

- Institutions (2): exhibits strengths in the sub-pillars Political environment (3), Regulatory environment (5) and Business environment (1) and in the indicators Government effectiveness (3), Rule of law (1) and Ease of resolving insolvency (1).
- Human capital & research (4): the indicator School life expectancy (4) shows a strength.
- Infrastructure (9): the indicator E-participation (1) demonstrates a strength.
- Business sophistication (8): displays strengths in the sub-pillar Innovation linkages (3) and in the indicators University/industry research collaboration (3) and ICT services imports (2).
- Knowledge & technology outputs (6): reveals strengths in the sub-pillar Knowledge diffusion (3) and in the indicators Scientific & technical articles (5), Intellectual property receipts (1) and ICT services exports (5).
- Creative outputs (16): shows strengths in the indicators ICTs & organizational model creation (3) and Mobile app creation (1).

WEAKNESSES

GII weaknesses for Finland are found in six of the seven GII pillars.

- Human capital & research (4): reveals weakness in the indicator Pupil–teacher ratio (65).
- Infrastructure (9): the indicator GDP/unit of energy use (95) displays a weakness.
- Market sophistication (33): shows weaknesses in the indicators Ease of getting credit (74), Ease of protecting minority investors (60) and Intensity of local competition (100).
- Business sophistication (8): demonstrates weaknesses in the indicators High-tech imports (64) and FDI net inflows (76).
- Knowledge & technology outputs (6): the indicator Growth rate of PPP (81) reveals a weakness.
- Creative outputs (16): displays weaknesses in the indicators Trademarks by origin (66) and Printing & other media (57).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GI 2019 rank
8	8	High	EUR	5.5	264.7	41,883.3	6
				Score/Value	Rank		
INSTITUTIONS				93.5	2		
1.1	Political environment	92.2	3				
1.1.1	Political and operational stability*	87.5	11				
1.1.2	Government effectiveness*	94.5	3				
1.2	Regulatory environment	95.1	5				
1.2.1	Regulatory quality*	88.9	7				
1.2.2	Rule of law*	100.0	1				
1.2.3	Cost of redundancy dismissal, salary weeks	10.1	31				
1.3	Business environment	93.1	1				
1.3.1	Ease of starting a business*	93.5	29				
1.3.2	Ease of resolving insolvency*	92.7	1				
HUMAN CAPITAL & RESEARCH				61.5	4		
2.1	Education	66.5	8				
2.1.1	Expenditure on education, % GDP	6.9	7				
2.1.2	Government funding/pupil, secondary, % GDP/cap	24.8	21				
2.1.3	School life expectancy, years	19.4	4				
2.1.4	PISA scales in reading, maths, & science	516.4	8				
2.1.5	Pupil-teacher ratio, secondary	13.6	65				
2.2	Tertiary education	52.2	14				
2.2.1	Tertiary enrolment, % gross	88.2	7				
2.2.2	Graduates in science & engineering, %	27.3	27				
2.2.3	Tertiary inbound mobility, %	8.2	28				
2.3	Research & development (R&D)	65.7	10				
2.3.1	Researchers, FTE/mn pop.	6,861.1	5				
2.3.2	Gross expenditure on R&D, % GDP	2.8	11				
2.3.3	Global R&D companies, avg. exp. top 3, mn \$US	76.0	12				
2.3.4	QS university ranking, average score top 3*	48.6	19				
INFRASTRUCTURE				59.9	9		
3.1	Information & communication technologies (ICTs)	87.7	18				
3.1.1	ICT access*	73.7	48				
3.1.2	ICT use*	80.4	19				
3.1.3	Government's online service*	96.5	8				
3.1.4	E-participation*	100.0	1				
3.2	General infrastructure	45.3	9				
3.2.1	Electricity output, kWh/mn pop.	12,683.7	10				
3.2.2	Logistics performance*	89.1	10				
3.2.3	Gross capital formation, % GDP	23.8	61				
3.3	Ecological sustainability	46.9	25				
3.3.1	GDP/unit of energy use	6.6	95				
3.3.2	Environmental performance*	78.9	7				
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	5.7	17				
MARKET SOPHISTICATION				53.1	33		
4.1	Credit	50.9	31				
4.1.1	Ease of getting credit*	60.0	74				
4.1.2	Domestic credit to private sector, % GDP	94.8	27				
4.1.3	Microfinance gross loans, % GDP	n/a	n/a				
4.2	Investment	44.1	36				
4.2.1	Ease of protecting minority investors*	62.0	60				
4.2.2	Market capitalization, % GDP	n/a	n/a				
4.2.3	Venture capital deals/bn PPP\$ GDP	0.1	18				
4.3	Trade, competition, and market scale	64.3	56				
4.3.1	Applied tariff rate, weighted avg., %	1.7	22				
4.3.2	Intensity of local competition†	61.7	100				
4.3.3	Domestic market scale, bn PPP\$	264.7	60				
BUSINESS SOPHISTICATION				59.9	8		
5.1	Knowledge workers	66.9	8				
5.1.1	Knowledge-intensive employment, %	47.8	10				
5.1.2	Firms offering formal training, %	n/a	n/a				
5.1.3	GERD performed by business, % GDP	1.8	11				
5.1.4	GERD financed by business, %	58.0	14				
5.1.5	Females employed w/advanced degrees, %	27.6	5				
5.2	Innovation linkages	68.5	3				
5.2.1	University/industry research collaboration†	75.8	3				
5.2.2	State of cluster development†	64.0	20				
5.2.3	GERD financed by abroad, % GDP	0.3	8				
5.2.4	JV-strategic alliance deals/bn PPP\$ GDP	0.2	9				
5.2.5	Patent families 2+ offices/bn PPP\$ GDP	6.0	7				
5.3	Knowledge absorption	44.2	24				
5.3.1	Intellectual property payments, % total trade	1.0	35				
5.3.2	High-tech imports, % total trade	7.7	64				
5.3.3	ICT services imports, % total trade	4.1	2				
5.3.4	FDI net inflows, % GDP	2.2	76				
5.3.5	Research talent, % in business enterprise	56.3	17				
KNOWLEDGE & TECHNOLOGY OUTPUTS				55.1	6		
6.1	Knowledge creation	64.2	9				
6.1.1	Patents by origin/bn PPP\$ GDP	12.1	7				
6.1.2	PCT patents by origin/bn PPP\$ GDP	6.3	5				
6.1.3	Utility models by origin/bn PPP\$ GDP	1.4	17				
6.1.4	Scientific & technical articles/bn PPP\$ GDP	33.5	5				
6.1.5	Citable documents H-index	43.3	19				
6.2	Knowledge impact	35.2	25				
6.2.1	Growth rate of PPP\$ GDP/worker, %	0.4	81				
6.2.2	New businesses/th pop. 15-64	4.3	35				
6.2.3	Computer software spending, % GDP	0.0	17				
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	9.8	27				
6.2.5	High- and medium-high-tech manufacturing, %	34.2	32				
6.3	Knowledge diffusion	65.9	3				
6.3.1	Intellectual property receipts, % total trade	3.4	1				
6.3.2	High-tech net exports, % total trade	4.2	39				
6.3.3	ICT services exports, % total trade	7.6	5				
6.3.4	FDI net outflows, % GDP	4.6	12				
CREATIVE OUTPUTS				41.8	16		
7.1	Intangible assets	38.9	30				
7.1.1	Trademarks by origin/bn PPP\$ GDP	40.8	66				
7.1.2	Global brand value, top 5,000, % GDP	81.8	25				
7.1.3	Industrial designs by origin/bn PPP\$ GDP	3.5	36				
7.1.4	ICTs & organizational model creation†	80.4	3				
7.2	Creative goods and services	24.4	37				
7.2.1	Cultural & creative services exports, % total trade	0.8	35				
7.2.2	National feature films/mn pop. 15-69	10.7	17				
7.2.3	Entertainment & Media market/th pop. 15-69	58.8	11				
7.2.4	Printing and other media, % manufacturing	1.0	57				
7.2.5	Creative goods exports, % total trade	0.5	62				
7.3	Online creativity	65.2	8				
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	28.9	21				
7.3.2	Country-code TLDs/th pop. 15-69	38.8	18				
7.3.3	Wikipedia edits/mn pop. 15-69	93.3	6				
7.3.4	Mobile app creation/bn PPP\$ GDP	100.0	1				

NOTES: ● indicates a strength; ○ a weakness; ◆ a strength relative to the other top 25-ranked GII economies; ◇ a weakness relative to the other top 25-ranked GII economies; * 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 either missing or outdated for Finland.

Missing data

Code	Indicator name	Country 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	2018	World Federation of Exchanges
5.1.2	Firms offering formal training, %	n/a	2018	World Bank

Outdated data

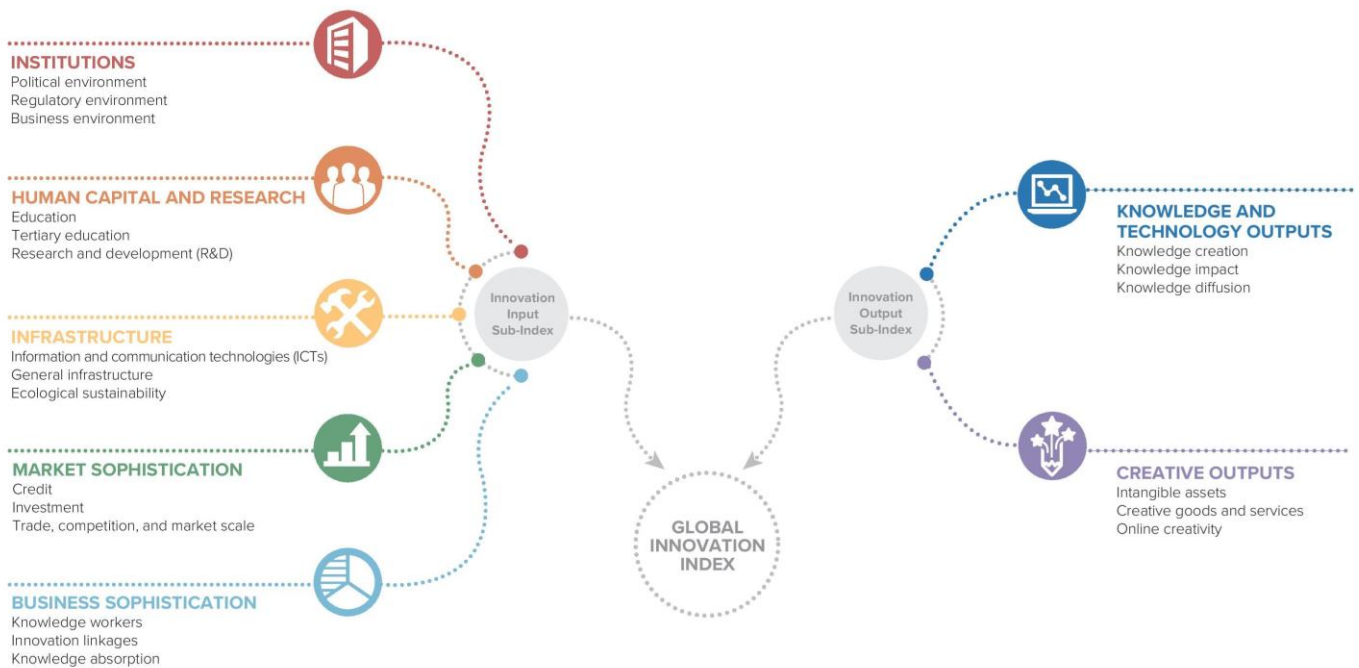
Code	Indicator name	Country year	Model year	Source
2.1.1	Expenditure on education, % GDP	2016	2018	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2017	2018	UNESCO Institute for Statistics

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 2020, the GII presents its 13th edition devoted to the theme *Who Will Finance Innovation?*

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.

Framework of the Global Innovation Index 2020



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.

