Global Innovation Index 2022

ICELAND

20th Iceland ranks 20th among the 132 economies featured in the GII 2022.

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 Iceland 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 Iceland in the GII 2022 is between ranks 15 and 20.

Rankings for Iceland (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	21	23	19
2021	17	20	16
2022	20	24	17

- Iceland performs better in innovation outputs than innovation inputs in 2022.
- This year Iceland ranks 24th in innovation inputs, lower than both 2021 and 2020.
- As for innovation outputs, Iceland ranks 17th. This position is lower than last year but higher than 2020.

19th Iceland ranks 19th among the 48 high-income group economies.

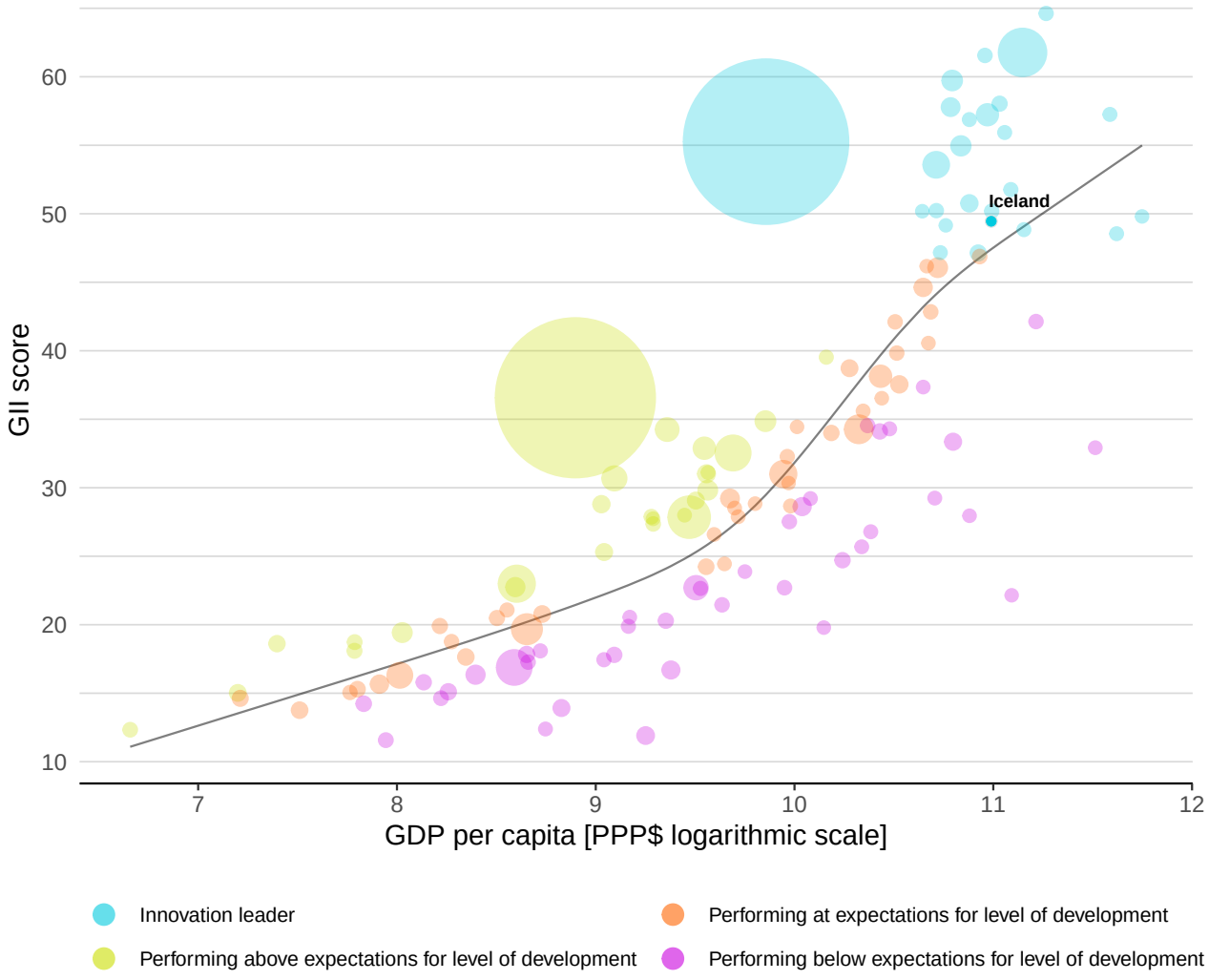
12th Iceland ranks 12th among the 39 economies in Europe.

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, Iceland's performance is above expectations for its level of development.

The positive relationship between innovation and development

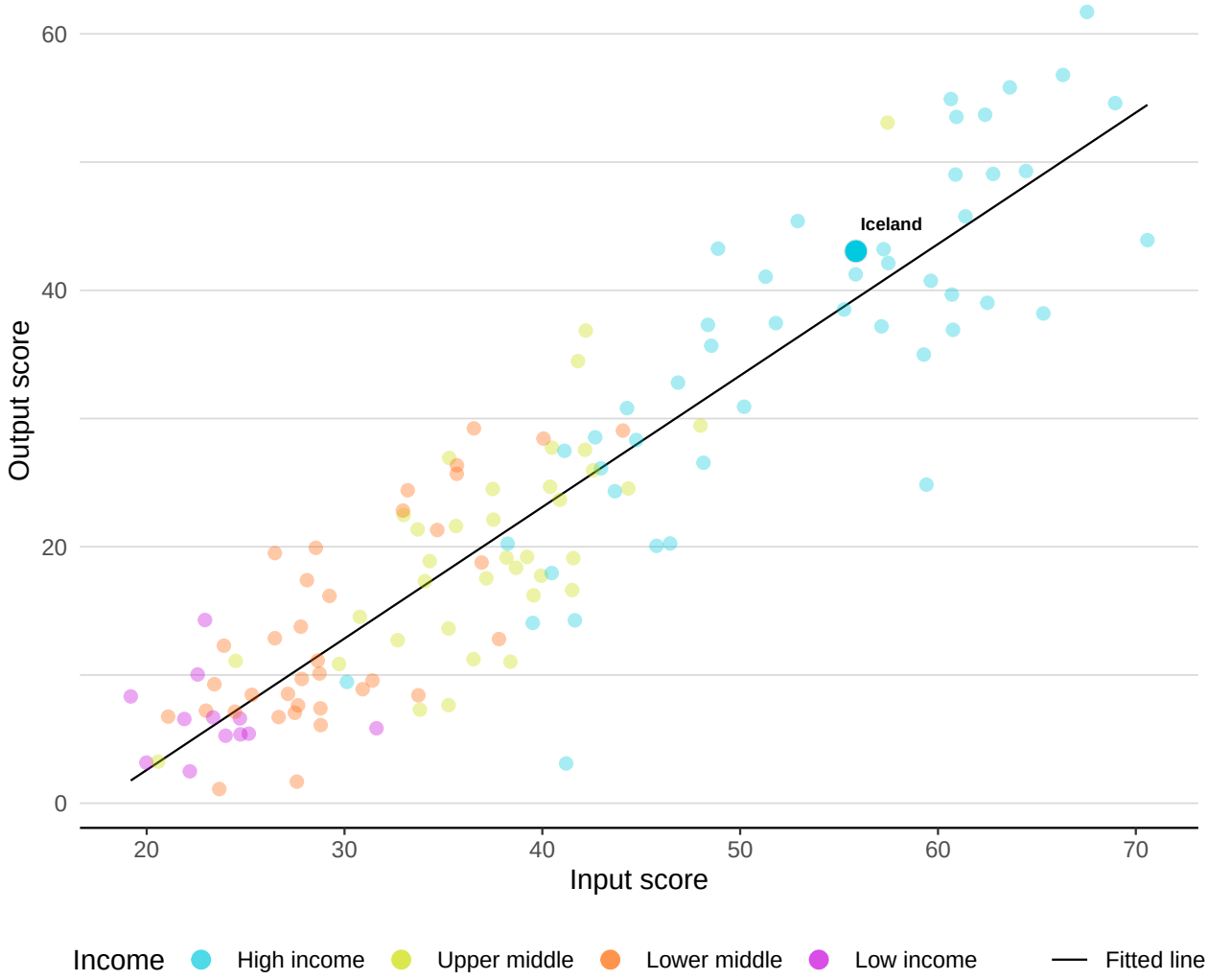


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

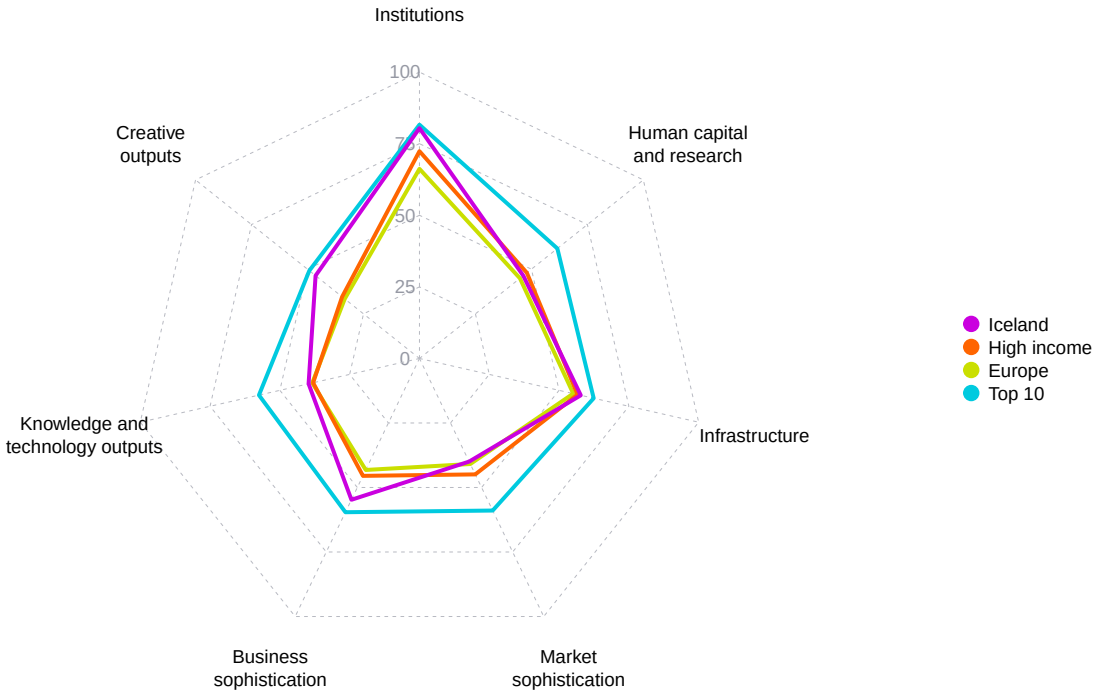
Iceland produces more innovation outputs relative to its level of innovation investments.

Innovation input to output performance



BENCHMARKING AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND EUROPE

The seven GII pillar scores for Iceland



High-income group economies

Iceland performs above the high-income group average in five pillars, namely: Institutions; Infrastructure; Business sophistication; Knowledge and technology outputs; and, Creative outputs.

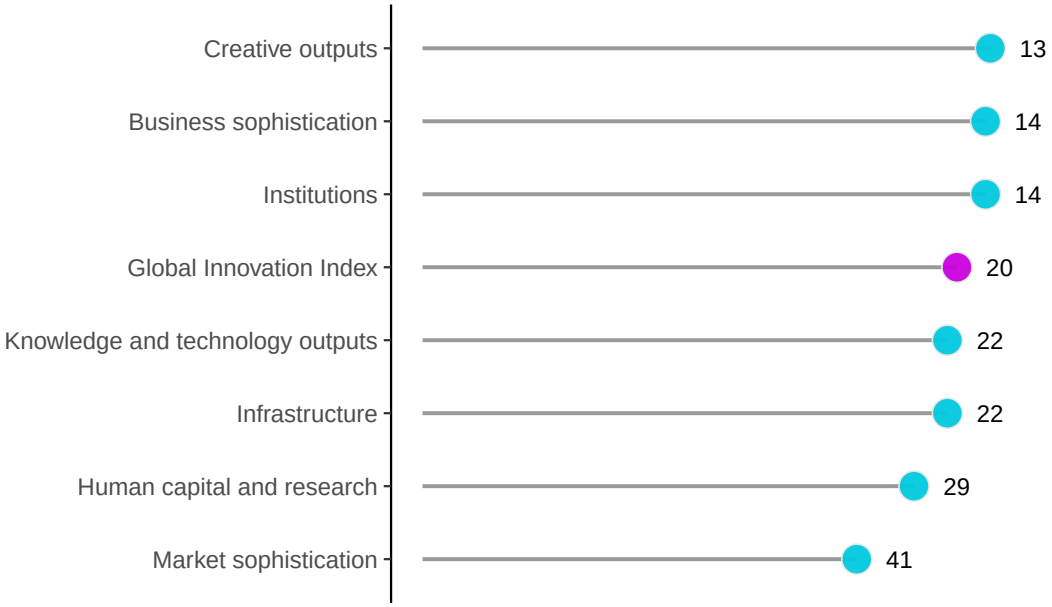
Europe

Iceland performs above the regional average in six pillars, namely: Institutions; Human capital and research; Infrastructure; Business sophistication; Knowledge and technology outputs; and, Creative outputs.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Iceland performs best in Creative outputs and its weakest performance is in Market sophistication.

The seven GII pillar ranks for Iceland



Note: The highest possible ranking in each pillar is 1.

The full WIPO Intellectual Property Statistics profile for Iceland can be found at:

https://www.wipo.int/ipstats/en/statistics/country_profile/profile.jsp?code=IS.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the indicator strengths and weaknesses of Iceland in the GII 2022.

Strengths and weaknesses for Iceland

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
1.1.1	Political and operational stability	4	2.2.2	Graduates in science and engineering, %	85
2.1.1	Expenditure on education, % GDP	6	2.3.4	QS university ranking, top 3	72
3.1.2	ICT use	1	3.3.1	GDP/unit of energy use	129
3.2.1	Electricity output, GWh/mn pop.	1	4.1.3	Loans from microfinance institutions, % GDP	61
5.2.3	GERD financed by abroad, % GDP	1	4.3.2	Domestic industry diversification	91
6.1.4	Scientific and technical articles/bn PPP$ GDP	1	4.3.3	Domestic market scale, bn PPP$	129
7.2.2	National feature films/mn pop. 15–69	1	5.3.2	High-tech imports, % total trade	95
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	3	5.3.4	FDI net inflows, % GDP	127
7.3.2	Country-code TLDs/th pop. 15–69	5	6.2.5	High-tech manufacturing, %	82
7.3.3	GitHub commit pushes received/mn pop. 15–69	5	7.1.4	Industrial designs by origin/bn PPP$ GDP	90

GII 2022 rank

Iceland

20

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
17	24	High	EUR	0.3	21.9	59,268

		Score/ Value	Rank	
Institutions		**80.4**	**14**	
1.1	**Political environment**	86.7	9	
1.1.1	Political and operational stability*	90.9	4	●
1.1.2	Government effectiveness*	82.5	15	
1.2	**Regulatory environment**	88.5	14	
1.2.1	Regulatory quality*	81.1	17	
1.2.2	Rule of law*	92.7	9	
1.2.3	Cost of redundancy dismissal	13.0	41	
1.3	**Business environment**	66.0	[23]	
1.3.1	Policies for doing business†	66.0	25	
1.3.2	Entrepreneurship policies and culture*	n/a	n/a	
Human capital and research		**46.4**	**29**	◇
2.1	**Education**	70.4	6	● ◆
2.1.1	Expenditure on education, % GDP	7.6	6	● ◆
2.1.2	Government funding/pupil, secondary, % GDP/cap	21.9	39	
2.1.3	School life expectancy, years	19.2	6	◆
2.1.4	PISA scales in reading, maths and science	481.4	30	
2.1.5	Pupil-teacher ratio, secondary	9.3	23	
2.2	**Tertiary education**	34.2	52	
2.2.1	Tertiary enrolment, % gross	77.6	24	
2.2.2	Graduates in science and engineering, %	18.2	85	○ ◇
2.2.3	Tertiary inbound mobility, %	8.4	31	
2.3	**Research and development (R&D)**	34.5	34	◇
2.3.1	Researchers, FTE/mn pop.	6,088.3	7	
2.3.2	Gross expenditure on R&D, % GDP	2.5	12	
2.3.3	Global corporate R&D investors, top 3, mn USD	45.9	33	◇
2.3.4	QS university ranking, top 3*	0.0	72	○ ◇
Infrastructure		**57.8**	**22**	
3.1	**Information and communication technologies (ICTs)**	85.7	26	
3.1.1	ICT access*	96.9	7	◆
3.1.2	ICT use*	89.1	1	● ◆
3.1.3	Government's online service*	79.4	42	◇
3.1.4	E-participation*	77.4	51	◇
3.2	**General infrastructure**	61.8	7	
3.2.1	Electricity output, GWh/mn pop.	51,702.7	1	● ◆
3.2.2	Logistics performance*	54.9	39	◇
3.2.3	Gross capital formation, % GDP	22.8	71	
3.3	**Ecological sustainability**	25.8	65	◇
3.3.1	GDP/unit of energy use	3.1	129	○ ◇
3.3.2	Environmental performance*	62.8	10	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	1.9	53	
Market sophistication		**40.0**	**41**	◇
4.1	**Credit**	18.6	89	◇
4.1.1	Finance for startups and scaleups*	n/a	n/a	
4.1.2	Domestic credit to private sector, % GDP	99.8	29	
4.1.3	Loans from microfinance institutions, % GDP	0.0	61	○
4.2	**Investment**	48.5	12	
4.2.1	Market capitalization, % GDP	n/a	n/a	
4.2.2	Venture capital investors, deals/bn PPP$ GDP	0.2	17	
4.2.3	Venture capital recipients, deals/bn PPP$ GDP	0.2	7	
4.2.4	Venture capital received, value, % GDP	0.0	13	
4.3	**Trade, diversification, and market scale**	52.8	78	◇
4.3.1	Applied tariff rate, weighted avg., %	1.5	50	
4.3.2	Domestic industry diversification	67.9	91	○ ◇
4.3.3	Domestic market scale, bn PPP$	21.9	129	○

		Score/ Value	Rank	
Business sophistication		**54.8**	**14**	
5.1	**Knowledge workers**	61.7	20	
5.1.1	Knowledge-intensive employment, %	52.2	6	
5.1.2	Firms offering formal training, %	n/a	n/a	
5.1.3	GERD performed by business, % GDP	1.7	13	
5.1.4	GERD financed by business, %	38.6	44	◇
5.1.5	Females employed w/advanced degrees, %	25.2	18	
5.2	**Innovation linkages**	59.8	7	
5.2.1	University-industry R&D collaboration†	56.8	28	
5.2.2	State of cluster development and depth†	51.7	45	◇
5.2.3	GERD financed by abroad, % GDP	0.8	1	● ◆
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.2	15	
5.2.5	Patent families/bn PPP$ GDP	1.7	21	
5.3	**Knowledge absorption**	42.8	31	
5.3.1	Intellectual property payments, % total trade	1.0	39	
5.3.2	High-tech imports, % total trade	6.9	95	○
5.3.3	ICT services imports, % total trade	4.4	9	◆
5.3.4	FDI net inflows, % GDP	−3.1	127	○
5.3.5	Research talent, % in businesses	42.7	31	◇
Knowledge and technology outputs		**39.7**	**22**	
6.1	**Knowledge creation**	44.7	18	
6.1.1	Patents by origin/bn PPP$ GDP	4.2	22	
6.1.2	PCT patents by origin/bn PPP$ GDP	1.4	23	◇
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	n/a	
6.1.4	Scientific and technical articles/bn PPP$ GDP	70.3	1	● ◆
6.1.5	Citable documents H-index	19.3	42	◇
6.2	**Knowledge impact**	30.3	57	◇
6.2.1	Labor productivity growth, %	0.8	65	
6.2.2	New businesses/th pop. 15–64	10.4	11	
6.2.3	Software spending, % GDP	0.3	35	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	5.1	56	
6.2.5	High-tech manufacturing, %	11.9	82	○ ◇
6.3	**Knowledge diffusion**	44.1	25	
6.3.1	Intellectual property receipts, % total trade	3.8	6	
6.3.2	Production and export complexity	n/a	n/a	
6.3.3	High-tech exports, % total trade	1.9	61	◇
6.3.4	ICT services exports, % total trade	4.6	21	
Creative outputs		**46.4**	**13**	
7.1	**Intangible assets**	41.9	32	
7.1.1	Intangible asset intensity, top 15, %	58.4	42	◇
7.1.2	Trademarks by origin/bn PPP$ GDP	66.4	34	
7.1.3	Global brand value, top 5,000, % GDP	n/a	n/a	
7.1.4	Industrial designs by origin/bn PPP$ GDP	0.4	90	○ ◇
7.2	**Creative goods and services**	38.1	11	
7.2.1	Cultural and creative services exports, % total trade	0.8	38	
7.2.2	National feature films/mn pop. 15–69	21.0	1	● ◆
7.2.3	Entertainment and media market/th pop. 15–69	n/a	n/a	
7.2.4	Printing and other media, % manufacturing	1.3	29	
7.2.5	Creative goods exports, % total trade	0.1	85	
7.3	**Online creativity**	63.6	1	● ◆
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	97.9	3	● ◆
7.3.2	Country-code TLDs/th pop. 15–69	98.4	5	● ◆
7.3.3	GitHub commit pushes received/mn pop. 15–69	54.5	5	●
7.3.4	Mobile app creation/bn PPP$ GDP	3.7	63	◇

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 appendices for details, including the year of the data, at https://www.wipo.int/global_innovation_index/en/2022. 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 indicators that are either missing or outdated for Iceland.

Missing data for Iceland

Code	Indicator name	Economy year	Model year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2021	Global Entrepreneurship Monitor
4.1.1	Finance for startups and scaleups	n/a	2021	Global Entrepreneurship Monitor
4.2.1	Market capitalization, % GDP	n/a	2020	World Federation of Exchanges
5.1.2	Firms offering formal training, %	n/a	2019	World Bank Enterprise Surveys
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2020	World Intellectual Property Organization
6.3.2	Production and export complexity	n/a	2019	Harvard University, Growth Lab
7.1.3	Global brand value, top 5,000, % GDP	n/a	2021	Brand Finance
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2021	PwC, GEMO

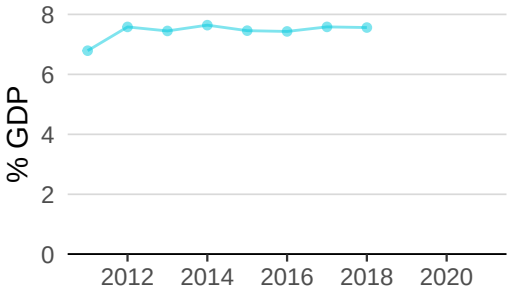
Outdated data for Iceland

Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	2018	2020	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2018	2020	UNESCO Institute for Statistics
4.3.1	Applied tariff rate, weighted avg., %	2019	2020	World Bank
4.3.2	Domestic industry diversification	2018	2019	United Nations Industrial Development Organization
5.3.5	Research talent, % in businesses	2018	2020	UNESCO Institute for Statistics
6.2.5	High-tech manufacturing, %	2018	2019	United Nations Industrial Development Organization
7.2.4	Printing and other media, % manufacturing	2018	2019	United Nations Industrial Development Organization

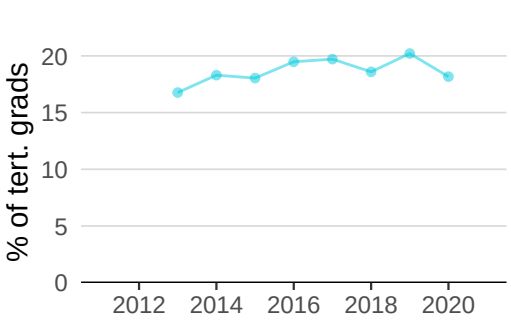
ICELAND'S INNOVATION SYSTEM

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

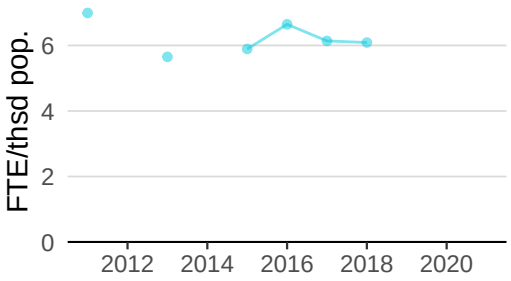
Innovation inputs



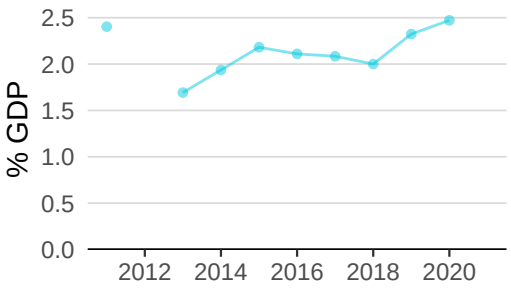
2.1.1 Expenditure on education was equal to 7.6% GDP in 2018–effectively unchanged from the year prior–and equivalent to an indicator rank of 6.



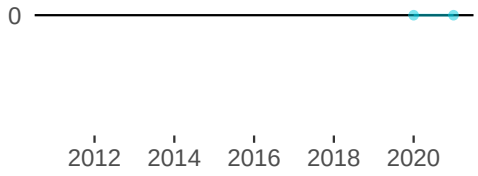
2.2.2 Graduates in science and engineering was equal to 18.2% of tert. grads in 2020–down by 10 percentage points from the year prior–and equivalent to an indicator rank of 85.



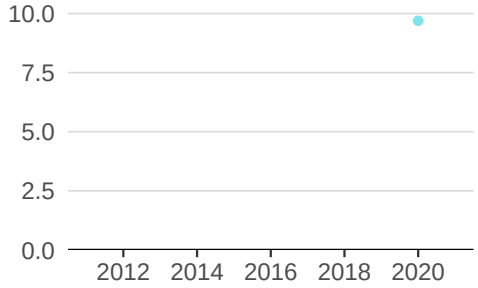
2.3.1 Researchers was equal to 6.1 FTE/thsd pop. in 2018–down by 1 percentage point from the year prior–and equivalent to an indicator rank of 7.



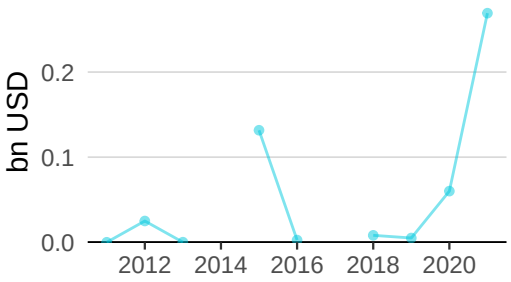
2.3.2 Gross expenditure on R&D was equal to 2.5% GDP in 2020–up by 6 percentage points from the year prior–and equivalent to an indicator rank of 12.



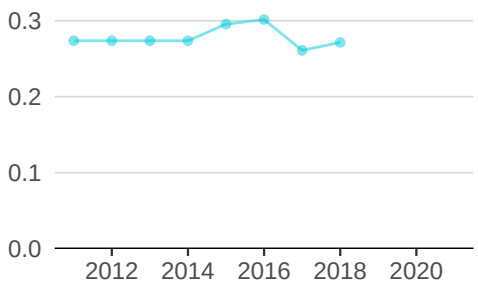
2.3.4 QS university ranking was equal to 0.0 in 2021–effectively unchanged from the year prior–and equivalent to an indicator rank of 72.



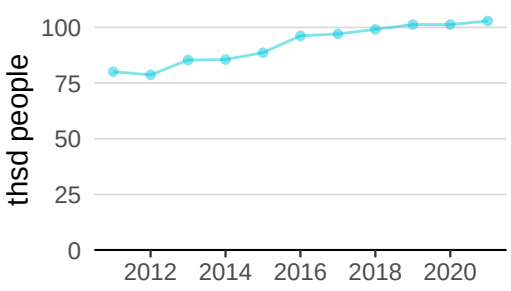
3.1.1 ICT access was equal to 9.7 in 2020 and equivalent to an indicator rank of 7.



4.2.4 Venture capital received was equal to 0.3 bn USD in 2021–up by 348 percentage points from the year prior–and equivalent to an indicator rank of 13.

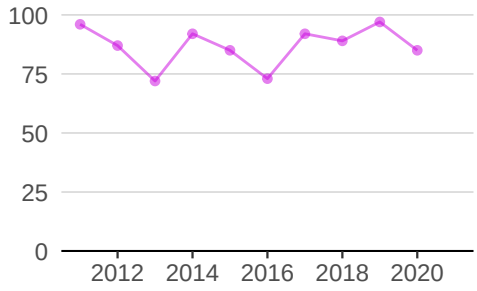


4.3.2 Domestic industry diversification was equal to 0.3 in 2018–up by 4 percentage points from the year prior–and equivalent to an indicator rank of 91.

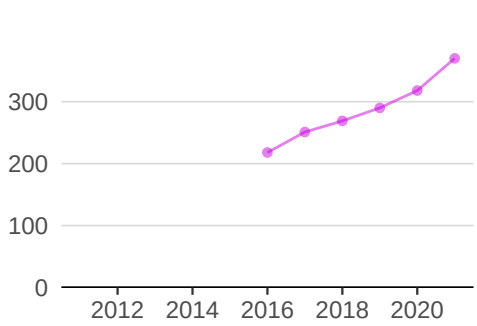


5.1.1 Knowledge-intensive employment was equal to 102.9 thsd people in 2021–up by 2 percentage points from the year prior–and equivalent to an indicator rank of 6.

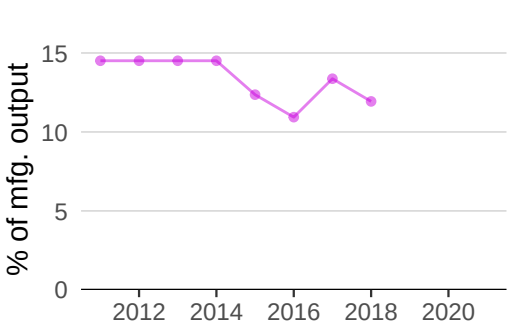
Innovation outputs



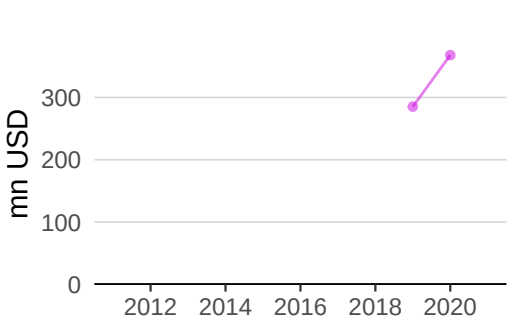
6.1.1 Patents by origin was equal to 85.0 in 2020–down by 12 percentage points from the year prior–and equivalent to an indicator rank of 22.



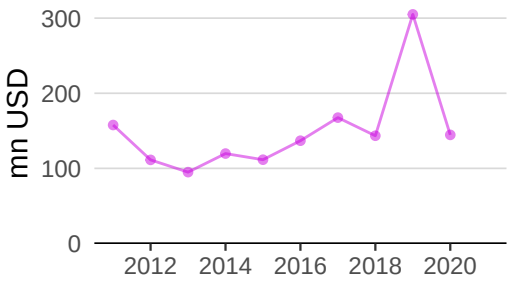
6.1.5 Citable documents H-index was equal to 370.0 in 2021–up by 16 percentage points from the year prior–and equivalent to an indicator rank of 42.



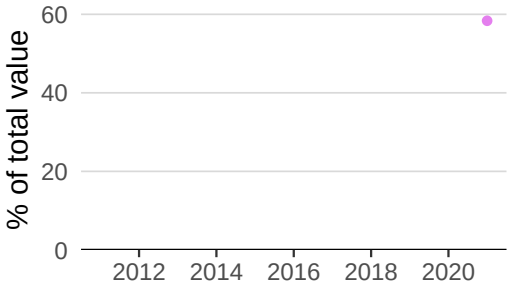
6.2.5 High-tech manufacturing was equal to 11.9% of mfg. output in 2018–down by 11 percentage points from the year prior–and equivalent to an indicator rank of 82.



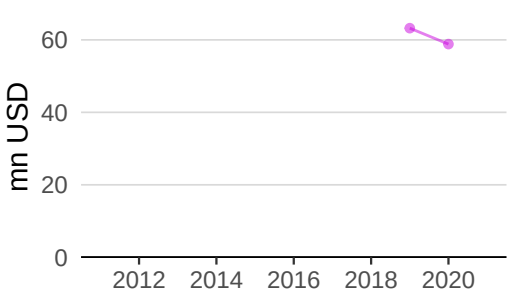
6.3.1 Intellectual property receipts was equal to 367.9 mn USD in 2020–up by 29 percentage points from the year prior–and equivalent to an indicator rank of 6.



6.3.3 High-tech exports was equal to 144.6 mn USD in 2020–down by 53 percentage points from the year prior–and equivalent to an indicator rank of 61.



7.1.1 Intangible asset intensity was equal to 58.4% of total value in 2021 and equivalent to an indicator rank of 42.



7.2.1 Cultural and creative services exports was equal to 58.8 mn USD in 2020–down by 7 percentage points from the year prior–and equivalent to an indicator rank of 38.

ICELAND'S INNOVATION TOP PERFORMERS

2.3.3 Global corporate R&D investors

Firm	Industry	R&D	R&D Growth	R&D Intensity	Rank
		[mn EUR]	[%]	[%]	
MAREL	Industrial Engineering	83	-7.0	6.7	1,362

Source: European Commission's Joint Research Centre (https://iri.jrc.ec.europa.eu/scoreboard/2021-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

University	Score	Rank

No observations

Source: QS Quacquarelli Symonds Ltd (https://www.topuniversities.com/university-rankings/world-university-rankings/2022).

7.1.1 Intangible asset intensity, top 15

Firm	Rank
MAREL	1
OSSUR	2
BRIM	3

Source: Brand Finance (https://brandirectory.com/reports/gift-2021).
Note: Brand Finance only provides within economy ranks.

7.1.3 Global brand value, top 5,000

Brand	Industry	Rank

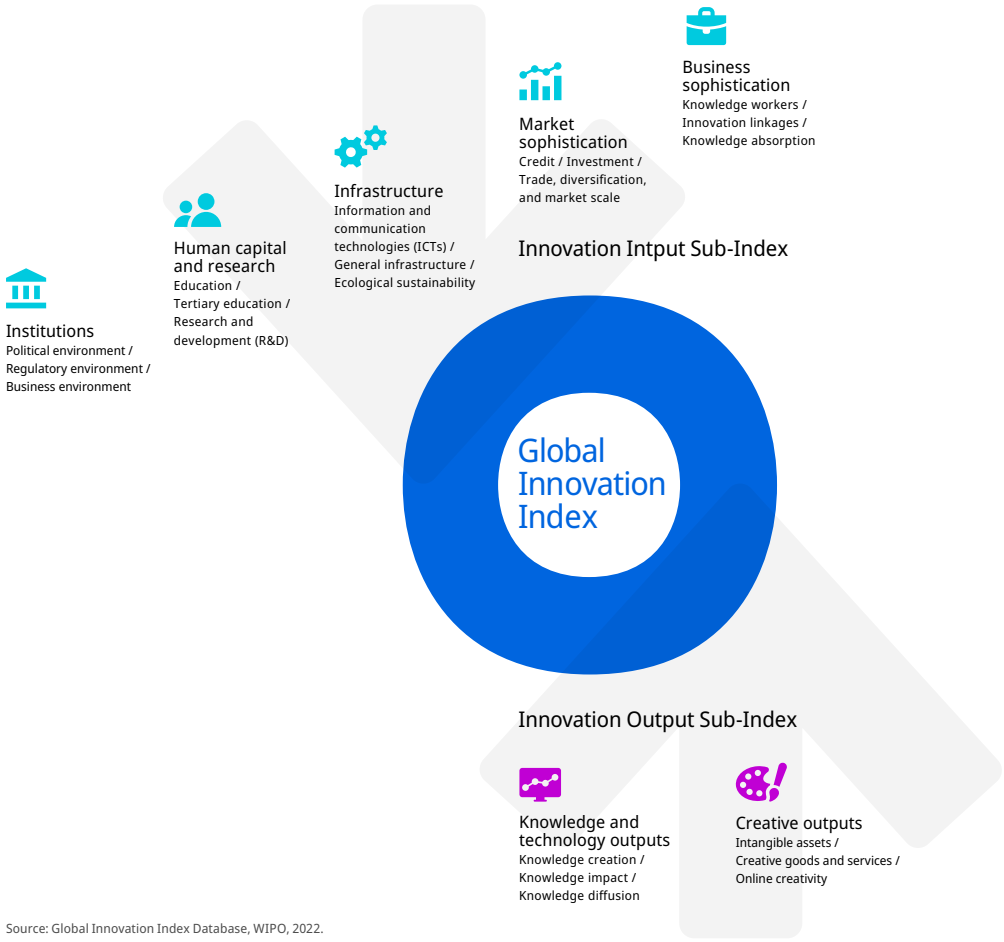
No observations

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

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 Database, WIPO, 2022.

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.