

Global Innovation Index 2023

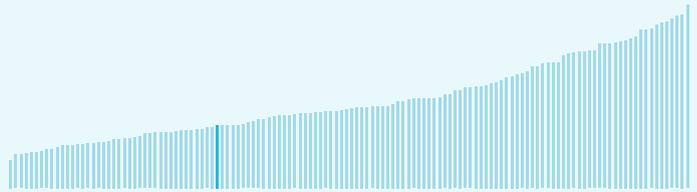


The Global Innovation Index (GII) **ranks world economies according to their innovation capabilities.**

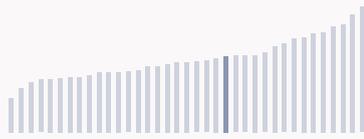
Consisting of **roughly 80 indicators**, grouped into innovation inputs and outputs, the GII **aims to capture the multi-dimensional facets of innovation.**

Lebanon ranking in the Global Innovation Index 2023

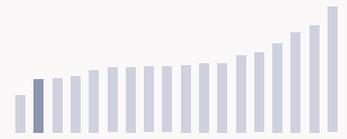
> Lebanon ranks **92nd** among the 132 economies featured in the GII 2023.



> Lebanon ranks **15th** among the 37 lower-middle-income group economies.



> Lebanon ranks **17th** among the 18 economies in Northern Africa and Western Asia.



> Lebanon GII Ranking (2020-2023)

The table shows the rankings of Lebanon over the past four years. 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 Lebanon in the GII 2023 is between ranks 80 and 93.

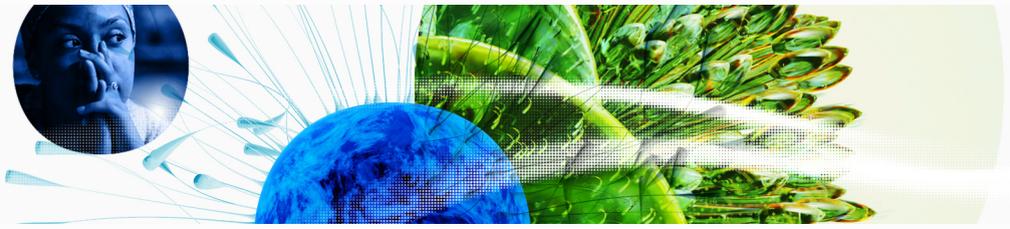
	GII Position	Innovation Inputs	Innovation Outputs
2020	87th	93rd	80th
2021	92nd	94th	97th
2022	n/a	n/a	n/a
2023	92nd	86th	95th

Lebanon performs worse in innovation outputs than innovation inputs in 2023.

This year Lebanon ranks **86th** in innovation inputs. This position is the same as last year.

Lebanon ranks **95th** in innovation outputs. This position is the same as last year.

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→ Expected vs. observed innovation performance

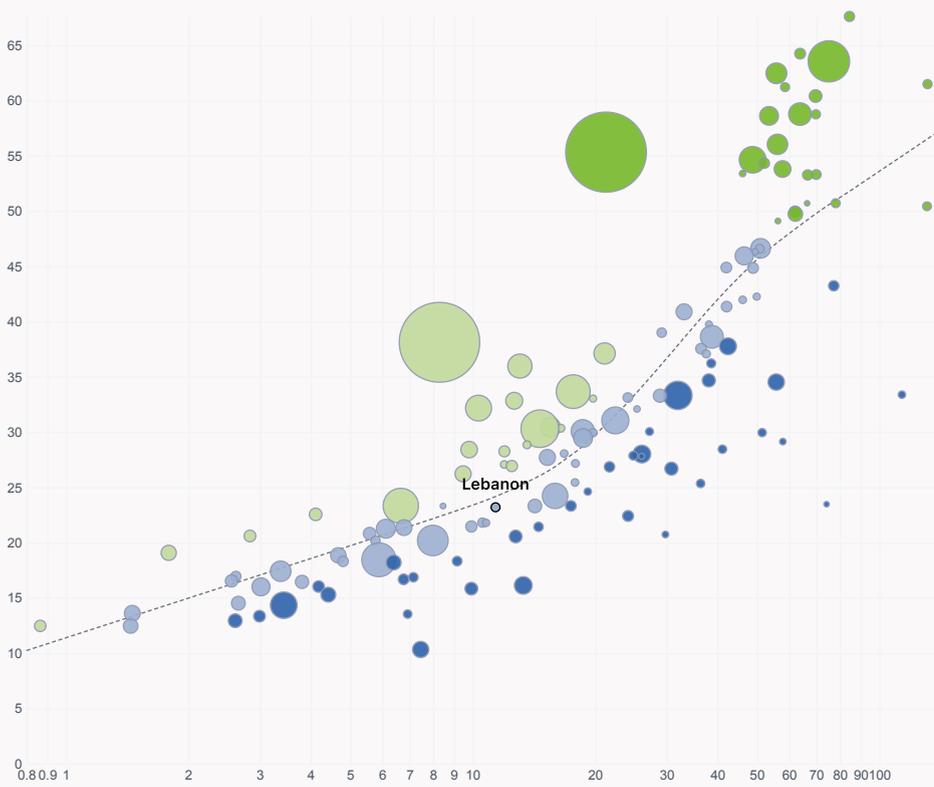
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected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



> Relative to GDP, Lebanon's performance is at expectations for its level of development.

> Innovation overperformers relative to their economic development

↑ **GII Score**



- Innovation leader
- Performing above expectations for level of development
- Performing at expectations for level of development
- Performing below expectations for level of development

Size legend (Population)



→ GDP per capita, PPP logarithmic scale (thousands of \$)

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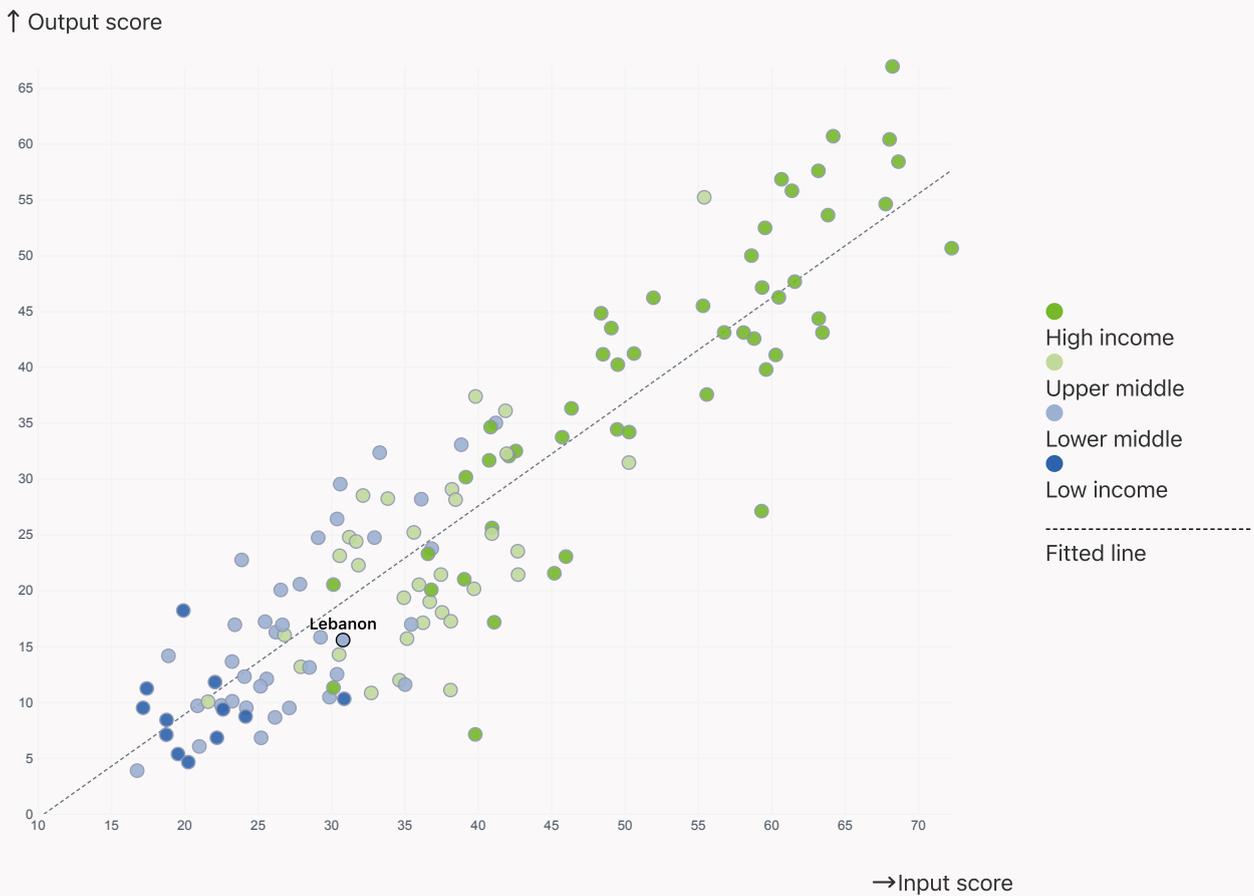
→ Effectively translating innovation investments into innovation outputs

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.

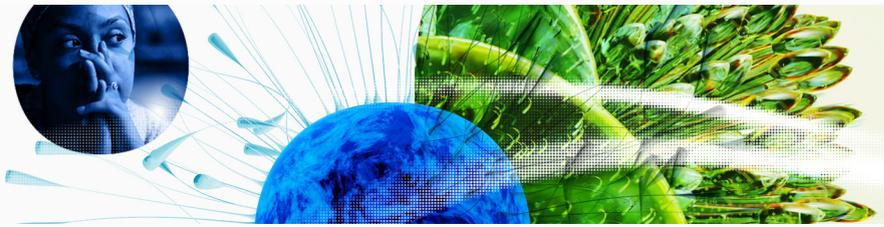


> Lebanon produces less innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs



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→ Overview of Lebanon's rankings in the seven areas of the GII in 2023

The chart shows the ranking for each of the seven areas that the GII comprises. The strongest areas for Lebanon are those that rank above the GII (shown in blue) and the weakest are those that rank below.



> Highest rankings



Lebanon ranks highest in Market sophistication (46th), Human capital and research (72nd), Business sophistication (76th) and Knowledge and technology outputs (86th).

> Lowest rankings



Lebanon ranks lowest in Institutions (125th), Infrastructure, Creative outputs (96th) and Knowledge and technology outputs (86th).

The full WIPO Intellectual Property Statistics profile for Lebanon can be found on [this link](#).

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→ Benchmark of Lebanon against other country groupings for each of the seven areas of the GII Index

The charts show the relative position of Lebanon (blue bar) against other country groupings (grey bars), for each of the seven areas of the GII Index.

> Lower-Middle-Income economies

Lebanon performs above the lower-middle-income group average in Knowledge and technology outputs, Business sophistication, Market sophistication, Human capital and research, Infrastructure.



> Northern Africa And Western Asia

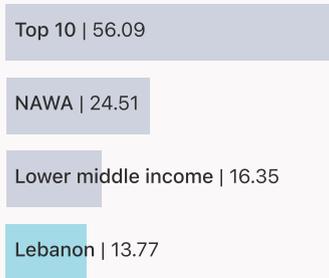
Lebanon performs below the regional average in Knowledge and technology outputs, Creative outputs, Business sophistication, Human capital and research, Infrastructure, Institutions.



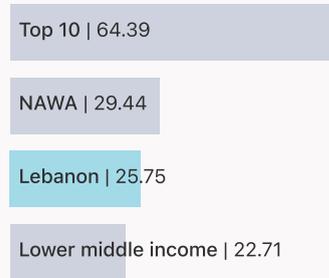
Knowledge and technology outputs



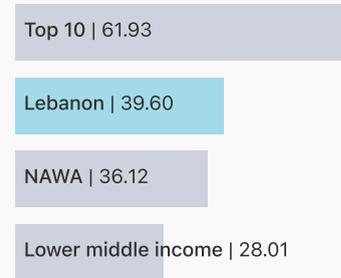
Creative outputs



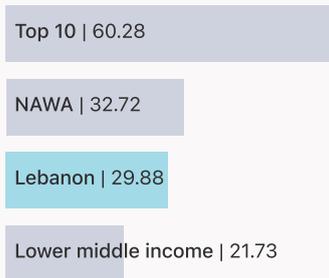
Business sophistication



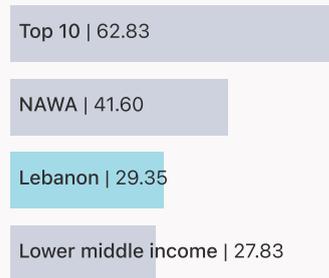
Market sophistication



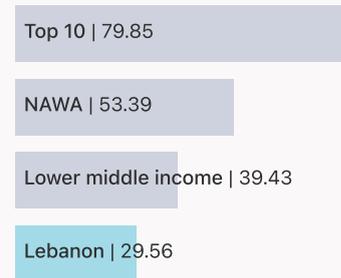
Human capital and research



Infrastructure



Institutions





→ Innovation strengths and weaknesses in Lebanon

The table below gives an overview of the indicator strengths and weaknesses of Lebanon in the GII 2023.



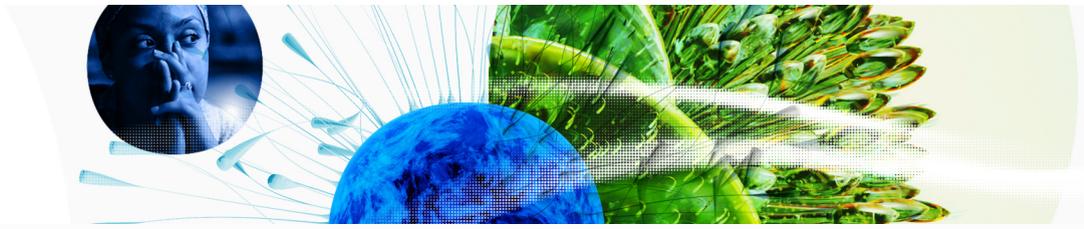
> Lebanon's main innovation strengths are **Pupil-teacher ratio, secondary (rank 6)**, **Cultural and creative services exports, % total trade (rank 7)** and **Finance for startups and scaleups (rank 14)**.

Strengths

Weaknesses

Rank	Code	Indicator name	Rank	Code	Indicator name
6	2.1.5	Pupil-teacher ratio, secondary	132	1.1.1	Operational stability for businesses
7	7.2.1	Cultural and creative services exports, % total trade	131	1.1.2	Government effectiveness
14	4.1.1	Finance for startups and scaleups	131	6.2.1	Labor productivity growth, %
18	2.2.3	Tertiary inbound mobility, %	125	1.3.1	Policies for doing business
20	1.2.3	Cost of redundancy dismissal	122	1.2.2	Rule of law
24	6.1.4	Scientific and technical articles/bn PPP\$ GDP	74	7.1.3	Global brand value, top 5,000
25	7.3.4	Mobile app creation/bn PPP\$ GDP	73	2.1.4	PISA scales in reading, maths and science
25	4.1.2	Domestic credit to private sector, % GDP	48	6.2.2	Unicorn valuation, % GDP
27	2.2.2	Graduates in science and engineering, %	40	2.3.3	Global corporate R&D investors, top 3, mn US\$
35	5.3.4	FDI net inflows, % GDP			

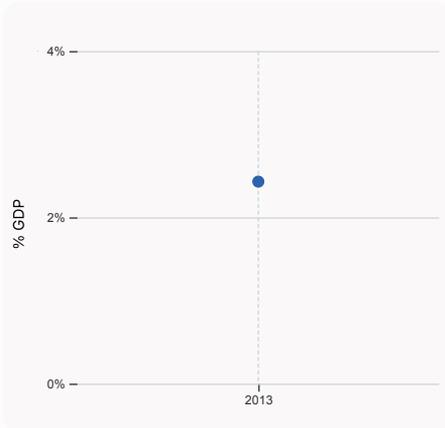
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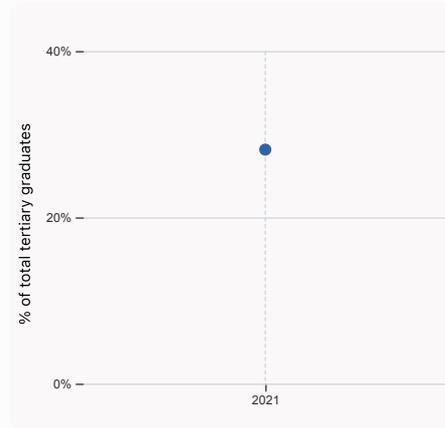
→ Lebanon's innovation system

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

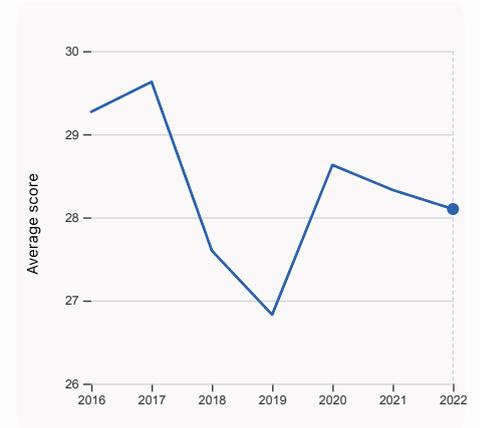
> Innovation inputs in Lebanon



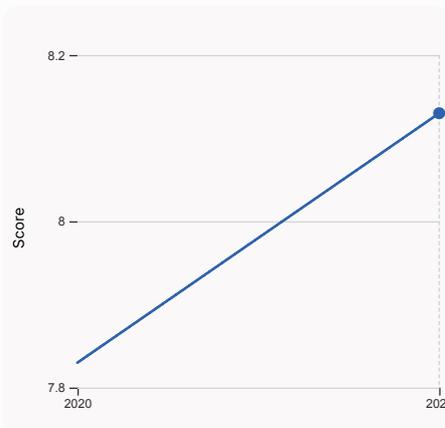
2.1.1 Expenditure on education, % GDP was equal to 2.43 % GDP in 2013, equivalent to an indicator rank of 114.



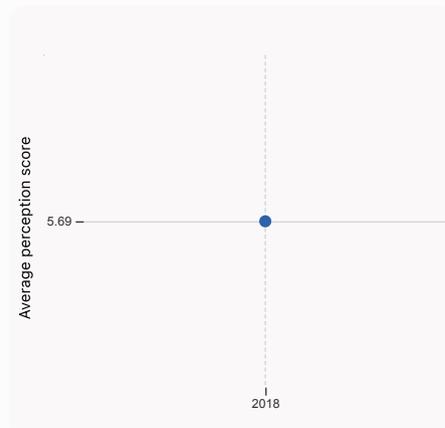
2.2.2 Graduates in science and engineering, % was equal to 28.15 % of total tertiary graduates in 2021, equivalent to an indicator rank of 27.



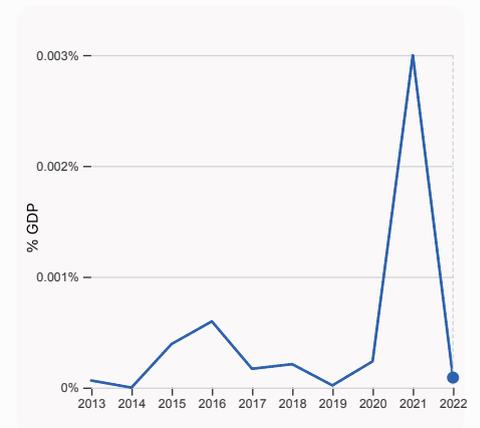
2.3.4 QS university ranking, top 3 was equal to an average score of 28.1 for the top 3 universities in 2022, down by 0.81% from the year prior – and equivalent to an indicator rank of 43.



3.1.1 ICT access was equal to a score of 8.13 in 2021, up by 3.83% from the year prior – and equivalent to an indicator rank of 87.

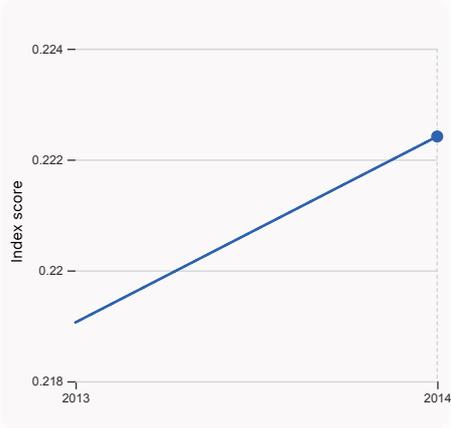


4.1.1 Finance for startups and scaleups was equal to an average perception score of 5.69 in 2018, equivalent to an indicator rank of 14.



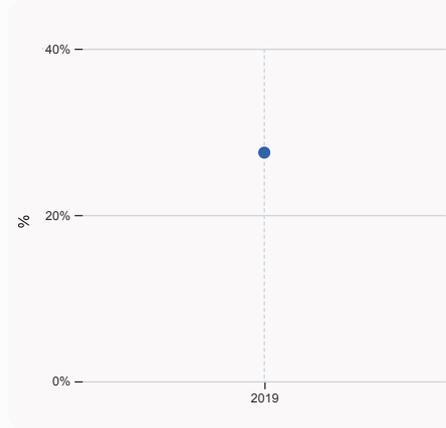
4.2.4 VC received, value, % GDP was equal to 0.00009% GDP in 2022, down by 0.0029 percentage points from the year prior.

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4.3.2 Domestic industry diversification

was equal to an index score of 0.222 in 2014, up by 1.53% from the year prior – and equivalent to an indicator rank of 75.



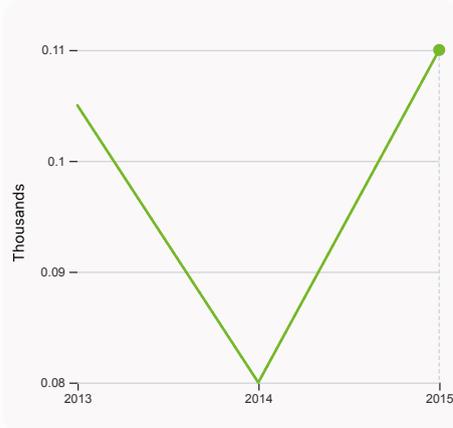
5.1.1 Knowledge-intensive employment, %

was equal to 27.5 % in 2019, equivalent to an indicator rank of 52.

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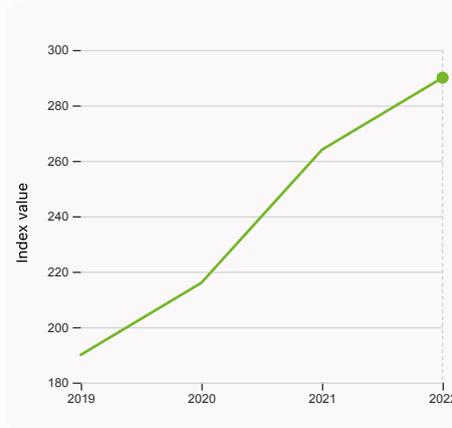


> Innovation outputs in Lebanon



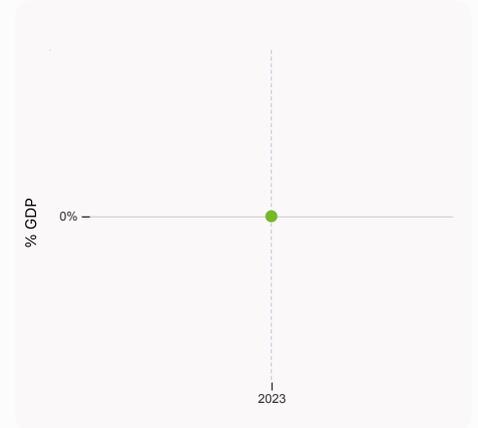
6.1.1 Patents by origin

was equal to 0.11 Thousands in 2015, up by 37.5% from the year prior – and equivalent to an indicator rank of 56.



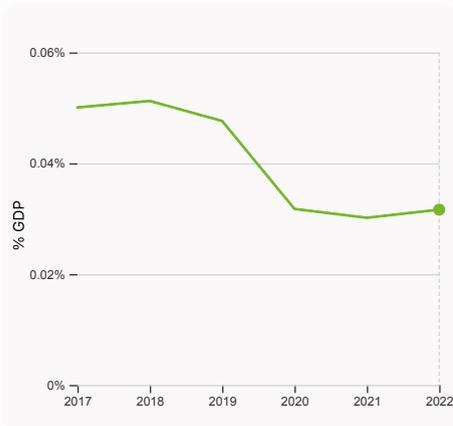
6.1.5 Citable documents H-index

was equal to an index value of 290 in 2022, up by 9.85% from the year prior – and equivalent to an indicator rank of 61.



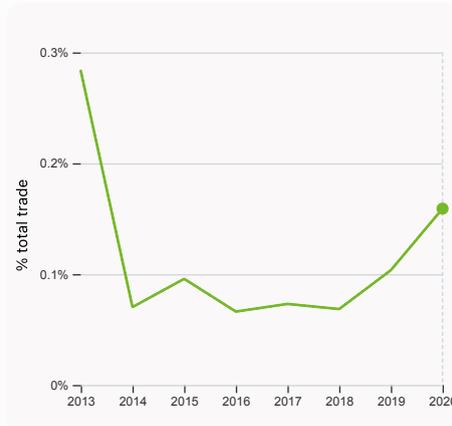
6.2.2 Unicorn valuation, % GDP

was equal to 0 % GDP in 2023 – and equivalent to an indicator rank of 48.



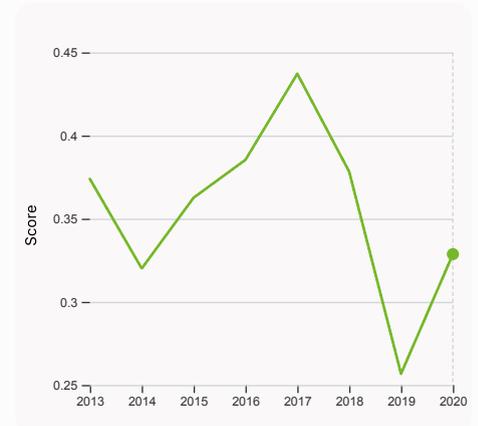
6.2.3 Software spending, % GDP

was equal to 0.032% GDP in 2022, up by 0.0015 percentage points from the year prior – and equivalent to an indicator rank of 113.



6.3.1 Intellectual property receipts, % total trade

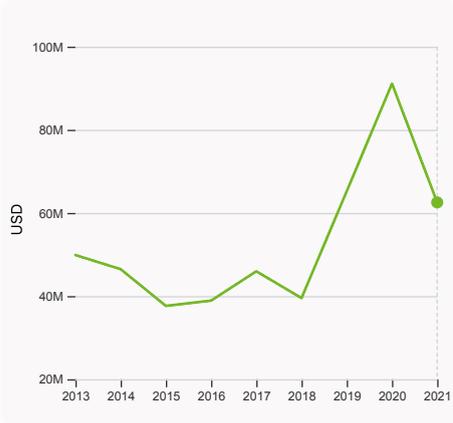
was equal to 0.159% total trade in 2020, up by 0.056 percentage points from the year prior – and equivalent to an indicator rank of 55.



6.3.2 Production and export complexity

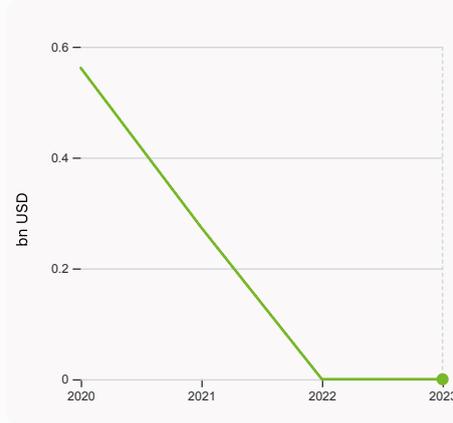
was equal to a score of 0.329 in 2020, up by 28.012% from the year prior – and equivalent to an indicator rank of 47.

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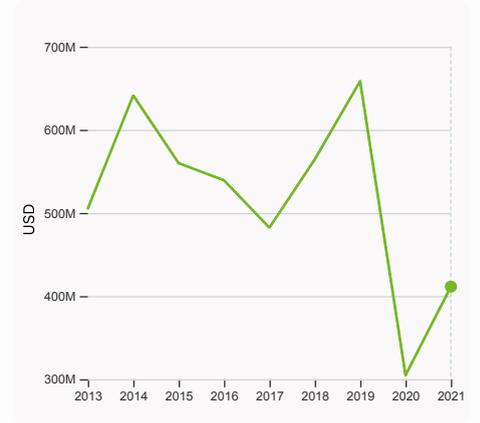
6.3.3 High-tech exports

was equal to 62,546,714 USD in 2021, down by 31.35% from the year prior – and equivalent to an indicator rank of 94.



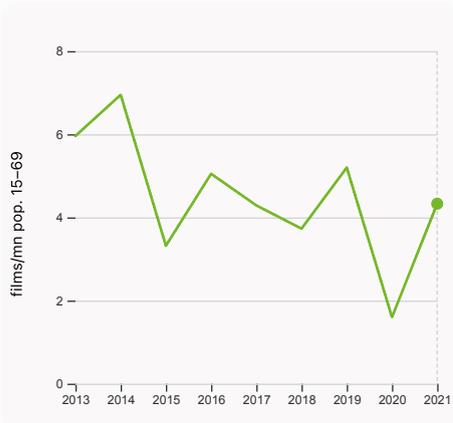
7.1.3 Global brand value, top 5,000

was equal to 0 bn USD in 2023 – and equivalent to an indicator rank of 74.



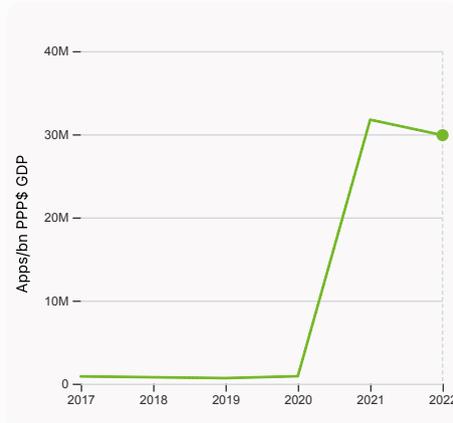
7.2.1 Cultural and creative services exports

was equal to 411,443,000 USD in 2021, up by 34.95% from the year prior – and equivalent to an indicator rank of 7.



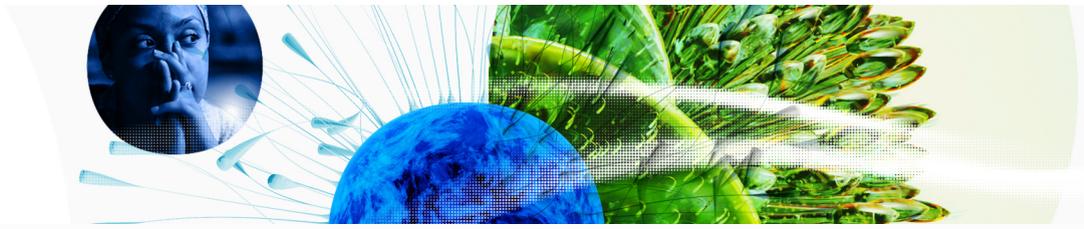
7.2.2 National feature films/mn pop. 15-69

was equal to 4.33 films/mn pop. 15-69 in 2021, up by 170.62% from the year prior – and equivalent to an indicator rank of 29.



7.3.4 Mobile app creation/bn PPP\$ GDP

was equal to 29,894,035 Apps/bn PPP\$ GDP in 2022, down by 5.86% from the year prior.



→ Lebanon's innovation top performers

> 2.3.4 QS university ranking of Lebanon's top universities

Rank	University	Score
252	AMERICAN UNIVERSITY OF BEIRUT (AUB)	38.40
531-540	UNIVERSITY OF BALAMAND	23.00
531-540	SAINT JOSEPH UNIVERSITY OF BEIRUT (USJ)	22.90

Source: QS Quacquarelli Symonds Ltd (<https://www.topuniversities.com/university-rankings/world-university-rankings/2023>).

Note: QS Quacquarelli Symonds Ltd annually assesses over 1,200 universities across the globe and scores them between [0,100]. Ranks can represent a single value "x", a tie "x=" or a range "x-y".

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GII 2023 rank

92

Lebanon

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$	
95	86	Lower middle	NAWA	5.5	n/a	n/a	
			Score / Value Rank				
Institutions			29.6 125 ○	Business sophistication			25.7 76
1.1 Institutional environment			0.6 132 ○ ◇	5.1 Knowledge workers			35.8 [58]
1.1.1 Operational stability for businesses*			0.0 132 ○ ◇	5.1.1 Knowledge-intensive employment, %			● 27.5 52 ◆
1.1.2 Government effectiveness*			1.2 131 ○ ◇	5.1.2 Firms offering formal training, %			20.8 77
1.2 Regulatory environment			56.2 86	5.1.3 GERD performed by business, % GDP			n/a n/a
1.2.1 Regulatory quality*			19.2 119	5.1.4 GERD financed by business, %			n/a n/a
1.2.2 Rule of law*			8.3 122 ○ ◇	5.1.5 Females employed w/advanced degrees, %			● 14.6 51 ◆
1.2.3 Cost of redundancy dismissal			8.7 20 ● ◆	5.2 Innovation linkages			17.1 89
1.3 Business environment			31.9 95	5.2.1 University-industry R&D collaboration+			● 35.2 86
1.3.1 Policies for doing business+			● 11.4 125 ○ ◇	5.2.2 State of cluster development+			● 28.1 99
1.3.2 Entrepreneurship policies and culture+			● 52.3 30	5.2.3 GERD financed by abroad, % GDP			n/a n/a
Human capital and research			29.9 72 ◆	5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP			● 0.0 84
2.1 Education			31.2 118	5.2.5 Patent families/bn PPP\$ GDP			0.0 73
2.1.1 Expenditure on education, % GDP			● 2.4 114	5.3 Knowledge absorption			24.4 108
2.1.2 Government funding/pupil, secondary, % GDP/cap			● 6.1 98	5.3.1 Intellectual property payments, % total trade			● 0.1 105
2.1.3 School life expectancy, years			n/a n/a	5.3.2 High-tech imports, % total trade			5.1 113
2.1.4 PISA scales in reading, maths and science			376.8 73 ○	5.3.3 ICT services imports, % total trade			● 0.9 89
2.1.5 Pupil-teacher ratio, secondary			● 7.7 6 ● ◆	5.3.4 FDI net inflows, % GDP			3.8 35 ● ◆
2.2 Tertiary education			44.2 22 ● ◆	5.3.5 Research talent, % in businesses			n/a n/a
2.2.1 Tertiary enrolment, % gross			n/a n/a	Knowledge and technology outputs			17.3 86
2.2.2 Graduates in science and engineering, %			28.1 27 ● ◆	6.1 Knowledge creation			29.5 [33]
2.2.3 Tertiary inbound mobility, %			12.4 18 ● ◆	6.1.1 Patents by origin/bn PPP\$ GDP			● 1.1 56
2.3 Research and development (R&D)			14.2 [50]	6.1.2 PCT patents by origin/bn PPP\$ GDP			n/a n/a
2.3.1 Researchers, FTE/mn pop.			n/a n/a	6.1.3 Utility models by origin/bn PPP\$ GDP			n/a n/a
2.3.2 Gross expenditure on R&D, % GDP			n/a n/a	6.1.4 Scientific and technical articles/bn PPP\$ GDP			n/a n/a
2.3.3 Global corporate R&D investors, top 3, mn US\$			0.0 40 ○ ◇	6.1.5 Citable documents H-index			13.7 61
2.3.4 QS university ranking, top 3*			28.5 43 ◆	6.2 Knowledge impact			0.8 132 ○ ◇
Infrastructure			29.3 96	6.2.1 Labor productivity growth, %			-4.9 131 ○ ◇
3.1 Information and communication technologies (ICTs)			51.4 96	6.2.2 Unicorn valuation, % GDP			0.0 48 ○ ◇
3.1.1 ICT access*			71.9 87	6.2.3 Software spending, % GDP			0.0 113 ○ ◇
3.1.2 ICT use*			58.8 94	6.2.4 High-tech manufacturing, %			n/a n/a
3.1.3 Government's online service*			36.5 114	6.3 Knowledge diffusion			21.6 68
3.1.4 E-participation*			38.4 90	6.3.1 Intellectual property receipts, % total trade			● 0.1 55
3.2 General infrastructure			13.5 [112]	6.3.2 Production and export complexity			59.4 47 ◆
3.2.1 Electricity output, GWh/mn pop.			● 2,669.6 69 ◆	6.3.3 High-tech exports, % total trade			0.4 94
3.2.2 Logistics performance*			n/a n/a	6.3.4 ICT services exports, % total trade			● 2.0 58
3.2.3 Gross capital formation, % GDP			n/a n/a	6.3.5 ISO 9001 quality/bn PPP\$ GDP			n/a n/a
3.3 Ecological sustainability			23.1 70 ◆	Creative outputs			13.8 96
3.3.1 GDP/unit of energy use			10.3 62	7.1 Intangible assets			3.8 [122]
3.3.2 Environmental performance*			22.5 102	7.1.1 Intangible asset intensity, top 15, %			n/a n/a
3.3.3 ISO 14001 environment/bn PPP\$ GDP			n/a n/a	7.1.2 Trademarks by origin/bn PPP\$ GDP			● 12.7 105
Market sophistication			39.6 46	7.1.3 Global brand value, top 5,000			0.0 74 ○ ◇
4.1 Credit			57.0 22 ● ◆	7.1.4 Industrial designs by origin/bn PPP\$ GDP			n/a n/a
4.1.1 Finance for startups and scaleups+			● 74.0 14 ● ◆	7.2 Creative goods and services			24.4 43 ◆
4.1.2 Domestic credit to private sector, % GDP			● 106.6 25 ● ◆	7.2.1 Cultural and creative services exports, % total trade			2.7 7 ● ◆
4.1.3 Loans from microfinance institutions, % GDP			n/a n/a	7.2.2 National feature films/mn pop. 15-69			4.3 29 ◆
4.2 Investment			7.4 62	7.2.3 Entertainment and media market/th pop. 15-69			● 0.5 56
4.2.1 Market capitalization, % GDP			17.9 62	7.2.4 Creative goods exports, % total trade			1.3 39
4.2.2 Venture capital (VC) investors, deals/bn PPP\$ GDP			● 0.2 30 ◆	7.3 Online creativity			23.0 57 ◆
4.2.3 VC recipients, deals/bn PPP\$ GDP			● 0.0 49	7.3.1 Generic top-level domains (TLDs)/th pop. 15-69			8.8 44 ◆
4.2.4 VC received, value, % GDP			● 0.0 71	7.3.2 Country-code TLDs/th pop. 15-69			0.3 107
4.3 Trade, diversification, and market scale			54.5 78	7.3.3 GitHub commits/mn pop. 15-69			8.2 56 ◆
4.3.1 Applied tariff rate, weighted avg., %			2.8 70 ◆	7.3.4 Mobile app creation/bn PPP\$ GDP			● 74.8 25 ● ◆
4.3.2 Domestic industry diversification			● 80.2 75				
4.3.3 Domestic market scale, bn PPP\$			● 77.7 92				

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/gii-ranking>. 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 Lebanon.

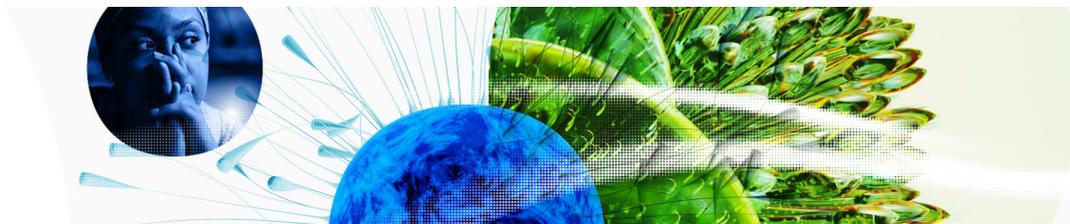


> Lebanon has missing data for eighteen indicators and outdated data for twenty seven indicators.

> Missing data for Lebanon

Code	Indicator name	Economy Year	Model Year	Source
2.1.3	School life expectancy, years	n/a	2020	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	n/a	2020	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
3.2.2	Logistics performance	n/a	2023	World Bank, Logistics Performance Index 2023 (https://lpi.worldbank.org/); and World Bank 2023, Connecting to Compete 2023: Trade Logistics in the Global Economy \u00d8 The Logistics Performance Index and its Indicators.
3.2.3	Gross capital formation, % GDP	n/a	2022	International Monetary Fund
3.3.3	ISO 14001 environment/bn PPP\$ GDP	n/a	2021	International Organization for Standardization, ISO Survey of Certifications to Management System Standards, 2021; International Monetary Fund, World Economic Outlook Database, October 2022
4.1.3	Loans from microfinance institutions, % GDP	n/a	2021	International Monetary Fund, Financial Access Survey (FAS)
5.1.3	GERD performed by business, % GDP	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD financed by business, %	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.2.3	GERD financed by abroad, % GDP	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.5	Research talent, % in businesses	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.1.2	PCT patents by origin/bn PPP\$ GDP	n/a	2022	World Intellectual Property Organization; International Monetary Fund
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2021	World Intellectual Property Organization; International Monetary Fund
6.2.4	High-tech manufacturing, %	n/a	2020	United Nations Industrial Development Organization
6.3.5	ISO 9001 quality/bn PPP\$ GDP	n/a	2021	International Organization for Standardization, ISO Survey of Certifications to Management System

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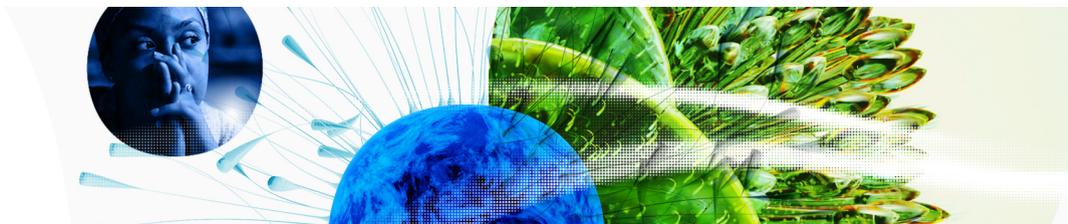
Code	Indicator name	Economy Year	Model Year	Source
				Standards, 2021; International Monetary Fund, World Economic Outlook Database, October 2022
7.1.1	Intangible asset intensity, top 15, %	n/a	2022	Brand Finance
7.1.4	Industrial designs by origin/bn PPP\$ GDP	n/a	2021	World Intellectual Property Organization; International Monetary Fund



> Outdated data for Lebanon

Code	Indicator name	Economy Year	Model Year	Source
1.3.1	Policies for doing business	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
1.3.2	Entrepreneurship policies and culture	2018	2022	Global Entrepreneurship Monitor
2.1.1	Expenditure on education, % GDP	2013	2021	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	2013	2019	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2016	2020	UNESCO Institute for Statistics
3.2.1	Electricity output, GWh/mn pop.	2020	2021	International Energy Agency
4.1.1	Finance for startups and scaleups	2018	2022	Global Entrepreneurship Monitor
4.1.2	Domestic credit to private sector, % GDP	2017	2020	International Monetary Fund; World Bank and OECD GDP estimates.
4.2.2	Venture capital (VC) investors, deals/bn PPP\$ GDP	2020	2022	Refinitiv; International Monetary Fund
4.2.3	VC recipients, deals/bn PPP\$ GDP	2020	2022	Refinitiv; International Monetary Fund
4.2.4	VC received, value, % GDP	2020	2022	Refinitiv; International Monetary Fund
4.3.2	Domestic industry diversification	2014	2020	United Nations Industrial Development Organization
4.3.3	Domestic market scale, bn PPP\$	2020	2022	International Monetary Fund
5.1.1	Knowledge-intensive employment, %	2019	2022	International Labour Organization
5.1.5	Females employed w/advanced degrees, %	2019	2022	International Labour Organization
5.2.1	University-industry R&D collaboration	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.2.2	State of cluster development	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	2020	2022	Refinitiv; International Monetary Fund
5.3.1	Intellectual property payments, % total trade	2020	2021	World Trade Organization and United Nations Conference on Trade and Development
5.3.3	ICT services imports, % total trade	2020	2021	World Trade Organization and United Nations Conference on Trade and Development
6.1.1	Patents by origin/bn PPP\$ GDP	2015	2021	World Intellectual Property Organization; International Monetary Fund

Global Innovation Index 2023



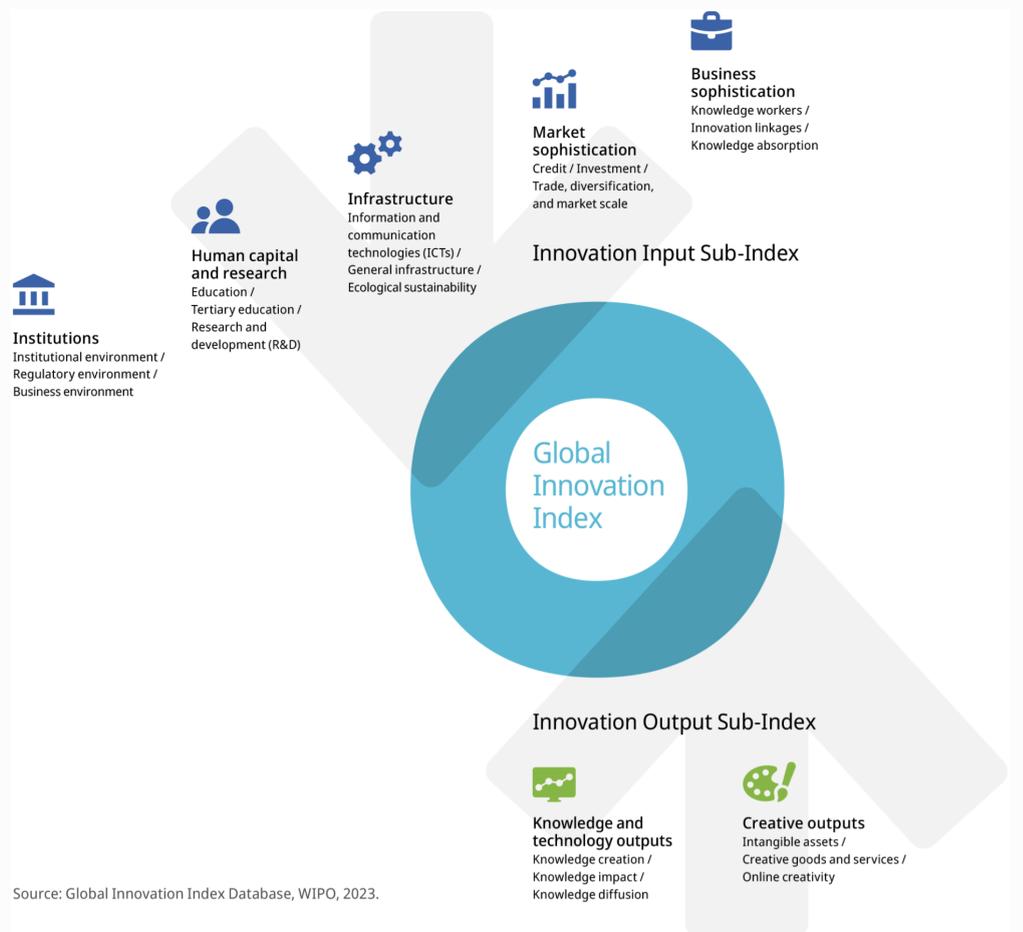
Code	Indicator name	Economy Year	Model Year	Source
6.1.4	Scientific and technical articles/bn PPP\$ GDP	2020	2022	Clarivate; International Monetary Fund
6.3.1	Intellectual property receipts, % total trade	2020	2021	World Trade Organization and United Nations Conference on Trade and Development
6.3.4	ICT services exports, % total trade	2020	2021	World Trade Organization and United Nations Conference on Trade and Development
7.1.2	Trademarks by origin/bn PPP\$ GDP	2015	2021	World Intellectual Property Organization; International Monetary Fund
7.2.3	Entertainment and media market/th pop. 15-69	2020	2022	PwC, GEMO; United Nations, World Population Prospects; International Monetary Fund
7.3.4	Mobile app creation/bn PPP\$ GDP	2020	2022	data.ia; International Monetary Fund

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→ 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.



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.