



GLOBAL INNOVATION INDEX 2019

MOROCCO

74th

Morocco ranks 74th 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 Morocco 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 Morocco's ranking in the GII 2019 is between 67 and 76.

Morocco's Rankings, 2017 - 2019

	GII	Innovation Inputs	Innovation Outputs
2019	74	83	66
2018	76	84	69
2017	72	79	68

- Morocco performs better in Innovation Outputs than Inputs.
- This year Morocco ranks 83rd in Innovation Inputs, better than last year but worse compared to 2017.
- As for Innovation Outputs, Morocco ranks 66th. This position is better than last year and compared to 2017.

9th

Morocco ranks 9th among the 26 lower middle-income economies.

11th

Morocco ranks 11th among the 19 economies in Northern Africa and Western Asia.

Morocco gains two positions this year, improving in several areas of the GII. Its most notable gains are found in indicators such as Ease of resolving insolvency, School life expectancy, Patent families in two or more offices, Labor productivity growth, and National feature films.

Morocco ranks in top 25 in a number of indicators: Government funding per pupil, Gross capital formation, GDP per unit of energy use, ICT services exports, and Industrial designs by origin (pages 6 and 7).

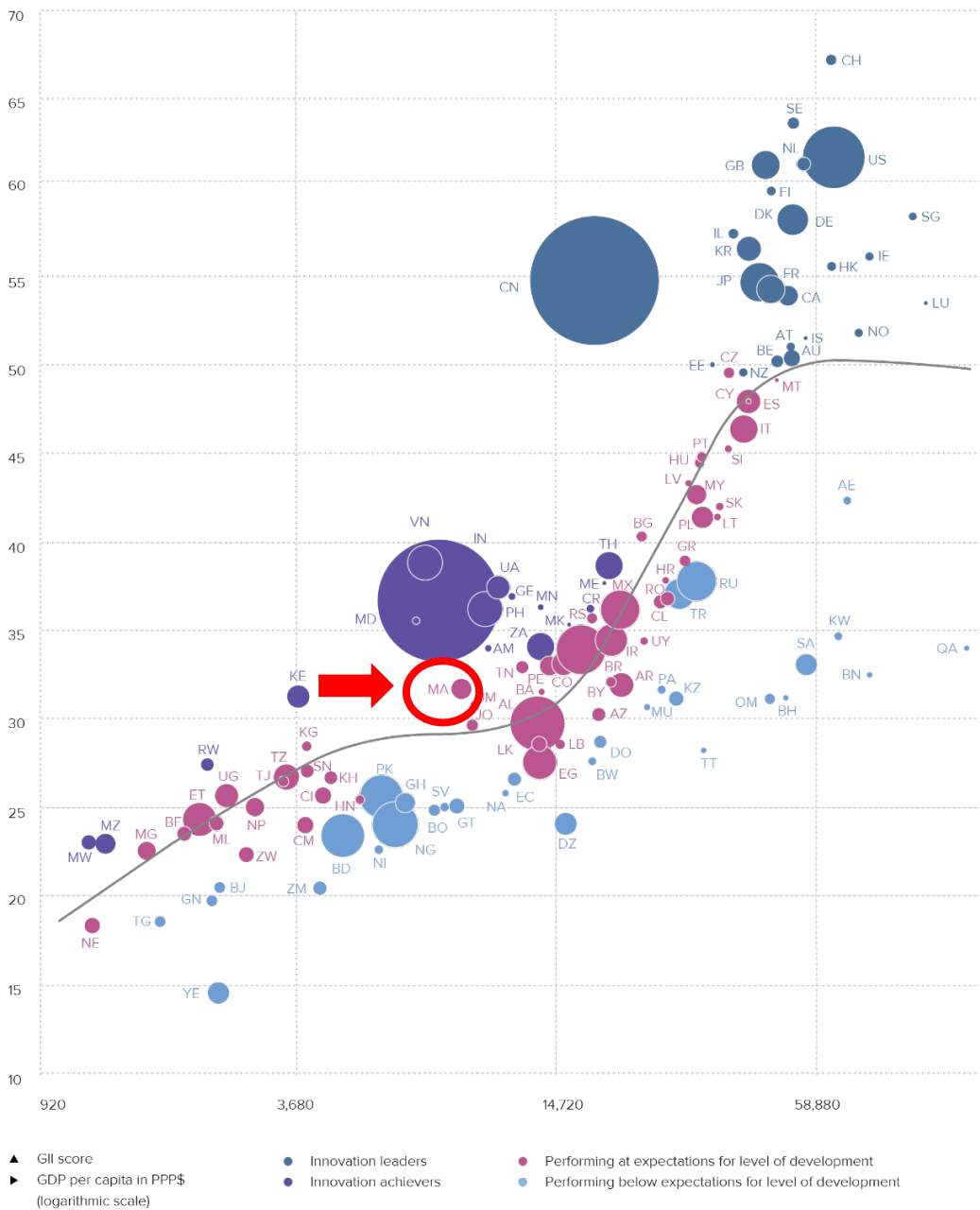
Despite these good ranks, the country still presents a number of areas of opportunity. Most of these are concentrated in the GII area that captures the degree of sophistication of the business sector - and in particular, indicators Knowledge-intensive employment, University-industry research collaboration, and ICT services imports. Other notable weaknesses for Morocco are Global R&D companies, Ease of getting credit, and Intellectual property receipts (pages 6 and 7).

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, Morocco performs at its expected level of development.

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

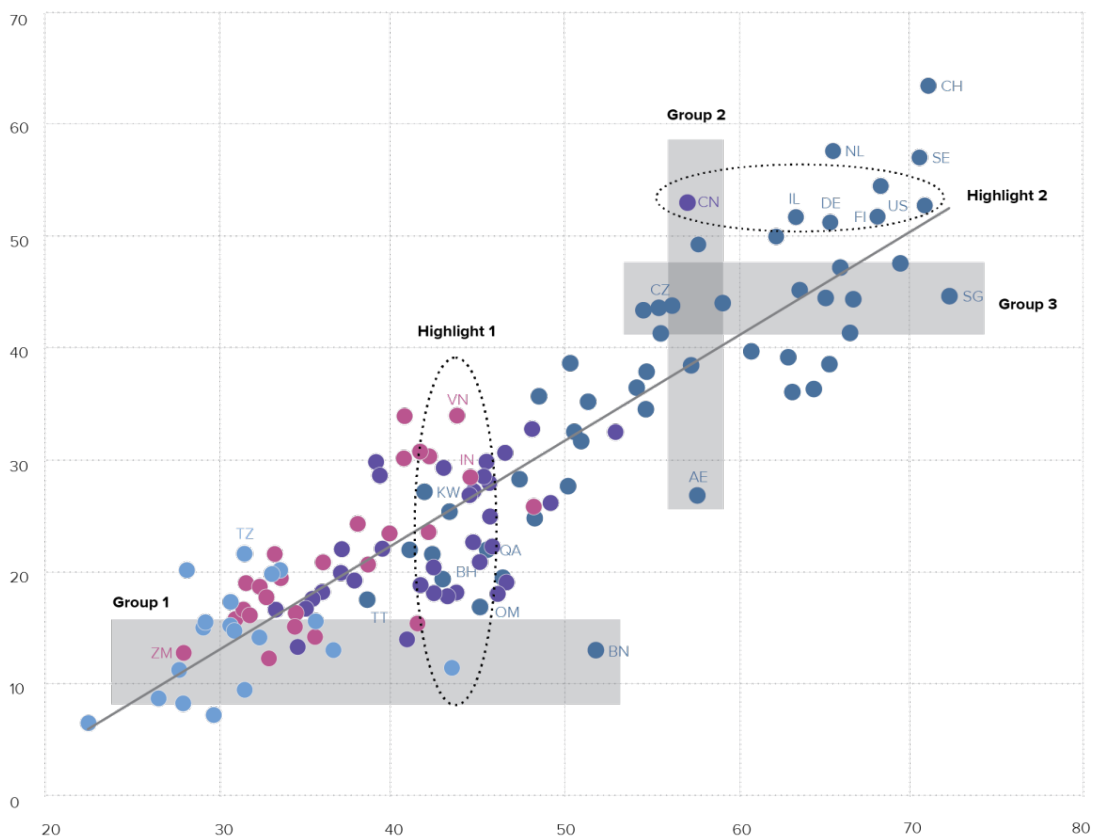


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

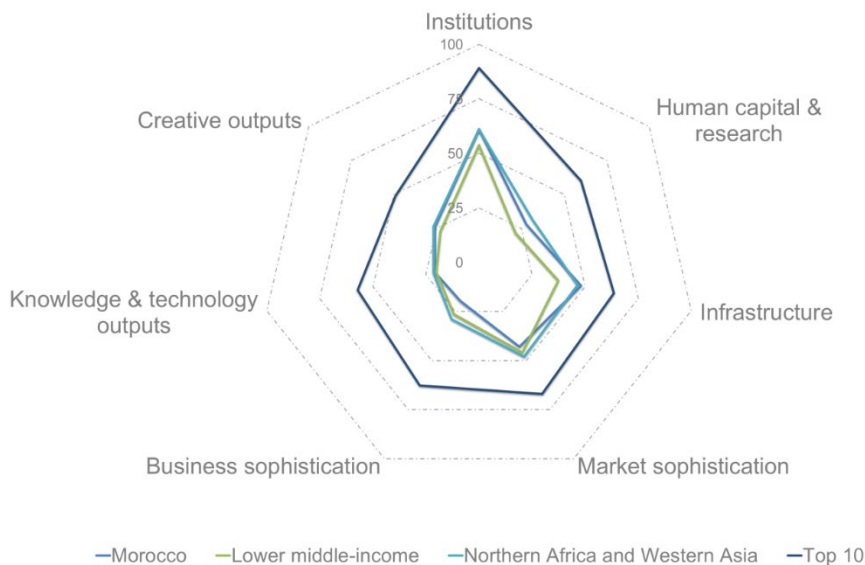
Innovation input/output performance by income group, 2019



- ▲ 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 MOROCCO TO OTHER LOWER MIDDLE-INCOME ECONOMIES AND THE NORTHERN AFRICA AND WESTERN ASIA REGION

Morocco's scores in the seven GII pillars



Lower middle-income economies

Morocco has high scores in five out of the seven GII pillars: Institutions, Human capital & research, Infrastructure, Knowledge & technology outputs, and Creative outputs, which are above the average of the lower middle-income group.

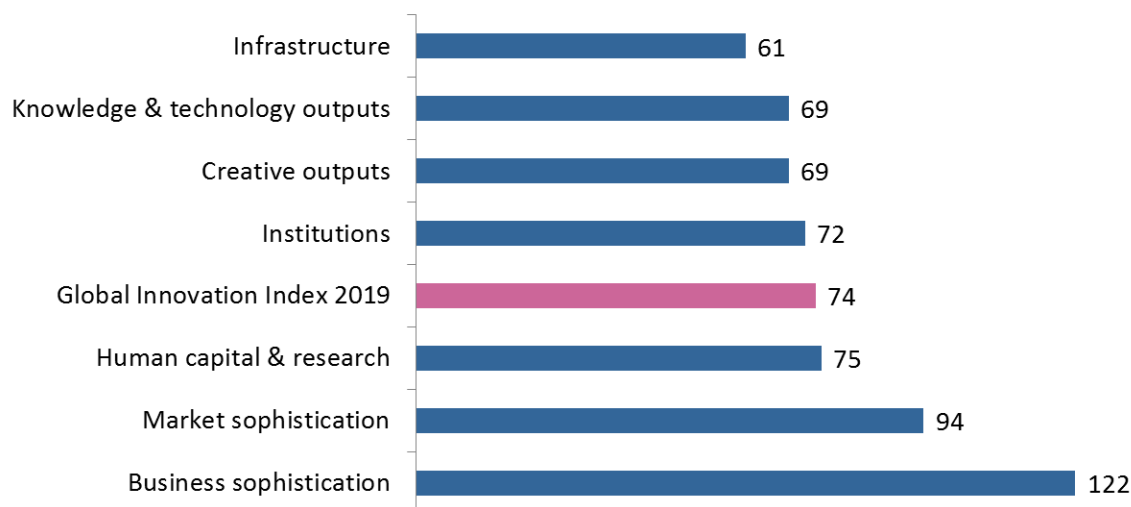
Northern Africa and Western Asia Region

Compared to other economies in the Northern Africa and Western Asia region, Morocco performs above average in two out of the seven GII pillars: Institutions and Infrastructure.

Top ranks are found in areas such as Education, Ecological sustainability, Trade, competition, & market scale, and Intangible assets where the country ranks in the top 50 worldwide.

OVERVIEW OF MOROCCO'S RANKINGS IN THE 7 GII AREAS

Morocco performs the best in Infrastructure and its weakest performance is in Business sophistication.



*The highest possible ranking in each pillar is 1.

MOROCCO'S INNOVATION STRENGTHS AND WEAKNESSES

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

Strengths		
Code	Indicator name	Rank
1.3.1	Ease of starting a business*	31
2.1	Education	47
2.1.1	Expenditure on education, % GDP	36
2.1.2	Government funding/pupil, secondary, % GDP/cap	5
3.2.3	Gross capital formation, % GDP	13
3.3	Ecological sustainability	47
3.3.1	GDP/unit of energy use	23
6.2.1	Growth rate of PPP\$ GDP/worker, %, 3-year average	39
6.2.5	High- & medium-high-tech manufactures, %	38
6.3.3	ICT services exports, % total trade	25
7.1	Intangible assets	43
7.1.1	Trademarks by origin/bn PPP\$ GDP	39
7.1.2	Industrial designs by origin/bn PPP\$ GDP	9

Weaknesses		
Code	Indicator name	Rank
2.1.5	Pupil-teacher ratio, secondary	90
2.3.3	Global R&D companies, top 3, in mn US\$	43
3.2.2	Logistics performance*	101
4.1.1	Ease of getting credit*	94
5	Business sophistication	122
5.1	Knowledge workers	107
5.1.1	Knowledge-intensive employment, %	105
5.2	Innovation linkages	114
5.2.1	University/industry research collaboration†	103
5.3	Knowledge absorption	116
5.3.3	ICT services imports, % total trade	103
6.3.1	Intellectual property receipts, % total trade	88
7.2.3	Entertainment & Media market/th pop. 15–69	58
7.2.4	Printing & other media, % manufacturing	84

STRENGTHS

- GII strengths for Morocco are scattered across five of the seven GII pillars.
- In Institutions (72), Morocco's strength is indicator Ease of starting a business (31).
- In Human capital & research (75), GII strengths are sub-pillar Education (47) and two of its five indicators - Expenditure on education (36) and Government funding per pupil (5).
- In Infrastructure (61), strengths are sub-pillar Ecological sustainability (47) as well as indicators Gross capital formation (13) and GDP per unit of energy use (23).
- In Knowledge & technology outputs (69), three indicators are indicated as relative strengths for Morocco: Labor productivity growth (39), High- & medium-high-tech manufactures (38), and ICT services exports (25).
- In Creative outputs (69), relative GII strengths for this economy are found in sub-pillar Intangible assets (43) as well as in two of its four indicators - Trademarks by origin (39) and Industrial designs by origin (9).

WEAKNESSES

- Morocco's weaknesses in the GII are found in six of the seven GII pillars.
- Pillar Business sophistication (122) is a relative weakness for Morocco.
- In Business sophistication (122), weaknesses are all its sub-pillars: Knowledge workers (107), Innovation linkages (114), and Knowledge absorption (116). At the indicator level, Knowledge-intensive employment (105), University-industry research collaboration (103), and ICT services imports (103) are weaknesses for this country.
- In Human capital & research (75), Morocco's weaknesses are indicators Pupil-teacher ratio (90) and Global R&D companies (43).
- In Infrastructure (61), only one GII weakness is identified in indicator Logistics performance (101).
- In Market sophistication (94), Morocco has one weakness in indicator Ease of getting credit (94).
- In Knowledge & technology outputs (69), only one indicator – Intellectual property receipts (88) – is a relative weakness for the country.
- In Creative outputs (69), Morocco's weaknesses are indicators Entertainment & Media market (58) and Printing & other media (84).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2018 rank
66	83	Lower middle	NAWA	36.2	315.4	8,932.6	76
				Score/Value	Rank		
INSTITUTIONS..... 61.1 72				BUSINESS SOPHISTICATION..... 19.8 122			
1.1	Political environment.....	50.7	79	5.1	Knowledge workers.....	20.9	107
1.1.1	Political and operational stability*.....	66.7	74	5.1.1	Knowledge-intensive employment, %.....	6.9	105
1.1.2	Government effectiveness*.....	42.7	81	5.1.2	Firms offering formal training, % firms.....	26.3	60
1.2	Regulatory environment.....	59.7	82	5.1.3	GERD performed by business, % GDP.....	0.2	51
1.2.1	Regulatory quality*.....	35.8	86	5.1.4	GERD financed by business, %.....	29.9	60
1.2.2	Rule of law*.....	41.7	71	5.1.5	Females employed w/advanced degrees, %.....	n/a	n/a
1.2.3	Cost of redundancy dismissal, salary weeks.....	20.7	86	5.2	Innovation linkages.....	16.9	114
1.3	Business environment.....	72.9	55	5.2.1	University/industry research collaboration*.....	31.2	103
1.3.1	Ease of starting a business*.....	93.0	31	5.2.2	State of cluster development*.....	45.9	71
1.3.2	Ease of resolving insolvency*.....	52.8	65	5.2.3	GERD financed by abroad, %.....	1.7	81
				5.2.4	JV-strategic alliance deals/bn PPP\$ GDP.....	0.0	80
				5.2.5	Patent families 2+ offices/bn PPP\$ GDP.....	0.0	80
HUMAN CAPITAL & RESEARCH..... 27.8 75				KNOWLEDGE & TECHNOLOGY OUTPUTS....20.7 69			
2.1	Education.....	54.0	47	5.3	Knowledge absorption.....	21.5	116
2.1.1	Expenditure on education, % GDP.....	5.3	36	5.3.1	Intellectual property payments, % total trade.....	0.3	82
2.1.2	Government funding/pupil, secondary, % GDP/cap.....	36.5	5	5.3.2	High-tech imports, % total trade.....	6.5	86
2.1.3	School life expectancy, years.....	13.5	75	5.3.3	ICT services imports, % total trade.....	0.5	103
2.1.4	PISA scales in reading, maths, & science.....	n/a	n/a	5.3.4	FDI net inflows, % GDP.....	2.6	62
2.1.5	Pupil-teacher ratio, secondary.....	20.3	90	5.3.5	Research talent, % in business enterprise.....	7.0	67
2.2	Tertiary education.....	21.5	90	5.3	Knowledge absorption.....	21.5	116
2.2.1	Tertiary enrolment, % gross.....	33.8	78	5.3.1	Intellectual property payments, % total trade.....	0.3	82
2.2.2	Graduates in science & engineering, %.....	18.4	71	5.3.2	High-tech imports, % total trade.....	6.5	86
2.2.3	Tertiary inbound mobility, %.....	2.0	75	5.3.3	ICT services imports, % total trade.....	0.5	103
2.3	Research & development (R&D).....	7.9	65	5.3.4	FDI net inflows, % GDP.....	2.6	62
2.3.1	Researchers, FTE/mn pop.....	1,069.0	51	5.3.5	Research talent, % in business enterprise.....	7.0	67
2.3.2	Gross expenditure on R&D, % GDP.....	0.7	49				
2.3.3	Global R&D companies, avg. exp. top 3, mn US\$.....	0.0	43				
2.3.4	QS university ranking, average score top 3*.....	3.5	73				
INFRASTRUCTURE..... 48.0 61							
3.1	Information & communication technologies (ICTs).....	62.5	74	6.1	Knowledge creation.....	8.4	77
3.1.1	ICT access*.....	63.6	70	6.1.1	Patents by origin/bn PPP\$ GDP.....	0.7	74
3.1.2	ICT use*.....	42.2	84	6.1.2	PCT patents by origin/bn PPP\$ GDP.....	0.2	55
3.1.3	Government's online service*.....	66.7	75	6.1.3	Utility models by origin/bn PPP\$ GDP.....	n/a	n/a
3.1.4	E-participation*.....	77.5	56	6.1.4	Scientific & technical articles/bn PPP\$ GDP.....	5.8	72
3.2	General infrastructure.....	37.5	53	6.1.5	Citable documents H-index.....	10.0	67
3.2.1	Electricity output, kWh/mn pop.....	899.5	96	6.2	Knowledge impact.....	36.2	67
3.2.2	Logistics performance*.....	22.3	101	6.2.1	Growth rate of PPP\$ GDP/worker, %.....	2.3	39
3.2.3	Gross capital formation, % GDP.....	34.4	13	6.2.2	New businesses/th pop. 15-64.....	1.7	59
3.3	Ecological sustainability.....	43.9	47	6.2.3	Computer software spending, % GDP.....	0.3	58
3.3.1	GDP/unit of energy use.....	13.2	23	6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP.....	2.9	78
3.3.2	Environmental performance*.....	63.5	49	6.2.5	High- & medium-high-tech manufactures, %.....	0.3	38
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP.....	0.6	82	6.3	Knowledge diffusion.....	17.6	64
				6.3.1	Intellectual property receipts, % total trade.....	0.0	88
				6.3.2	High-tech net exports, % total trade.....	1.5	61
				6.3.3	ICT services exports, % total trade.....	3.4	25
				6.3.4	FDI net outflows, % GDP.....	0.7	59
MARKET SOPHISTICATION..... 42.9 94				CREATIVE OUTPUTS.....26.0 69			
4.1	Credit.....	26.8	101	7.1	Intangible assets.....	48.3	43
4.1.1	Ease of getting credit*.....	45.0	94	7.1.1	Trademarks by origin/bn PPP\$ GDP.....	56.9	39
4.1.2	Domestic credit to private sector, % GDP.....	63.0	51	7.1.2	Industrial designs by origin/bn PPP\$ GDP.....	12.4	9
4.1.3	Microfinance gross loans, % GDP.....	0.4	37	7.1.3	ICTs & business model creation*.....	60.4	63
4.2	Investment.....	36.3	96	7.1.4	ICTs & organizational model creation*.....	51.3	76
4.2.1	Ease of protecting minority investors*.....	60.0	61	7.2	Creative goods & services.....	5.6	98
4.2.2	Market capitalization, % GDP.....	54.1	30	7.2.1	Cultural & creative services exports, % total trade.....	0.4	53
4.2.3	Venture capital deals/bn PPP\$ GDP.....	0.0	52	7.2.2	National feature films/mn pop. 15-69.....	1.5	72
4.3	Trade, competition, & market scale.....	65.6	49	7.2.3	Entertainment & Media market/th pop. 15-69.....	0.8	58
4.3.1	Applied tariff rate, weighted avg., %.....	3.2	66	7.2.4	Printing & other media, % manufacturing.....	0.7	84
4.3.2	Intensity of local competition*.....	67.2	73	7.2.5	Creative goods exports, % total trade.....	0.1	101
4.3.3	Domestic market scale, bn PPP\$.....	315.4	52	7.3	Online creativity.....	1.6	91
				7.3.1	Generic top-level domains (TLDs)/th pop. 15-69.....	1.6	86
				7.3.2	Country-code TLDs/th pop. 15-69.....	0.8	85
				7.3.3	Wikipedia edits/mn pop. 15-69.....	5.2	81
				7.3.4	Mobile app creation/bn PPP\$ GDP.....	0.4	71

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 Morocco.

Indicator Pupil-teacher ratio, for which data were not available in the GII 2018, becomes available in the GII 2019.

Missing data

Code	Indicator name	Country year	Model year	Source
2.1.4	PISA scales in reading, maths & science	n/a	2015	OECD Programme for International Student Assessment (PISA)
5.1.5	Females employed w/advanced degrees, %	n/a	2017	International Labour Organization
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2017	World Intellectual Property Organization

Outdated data

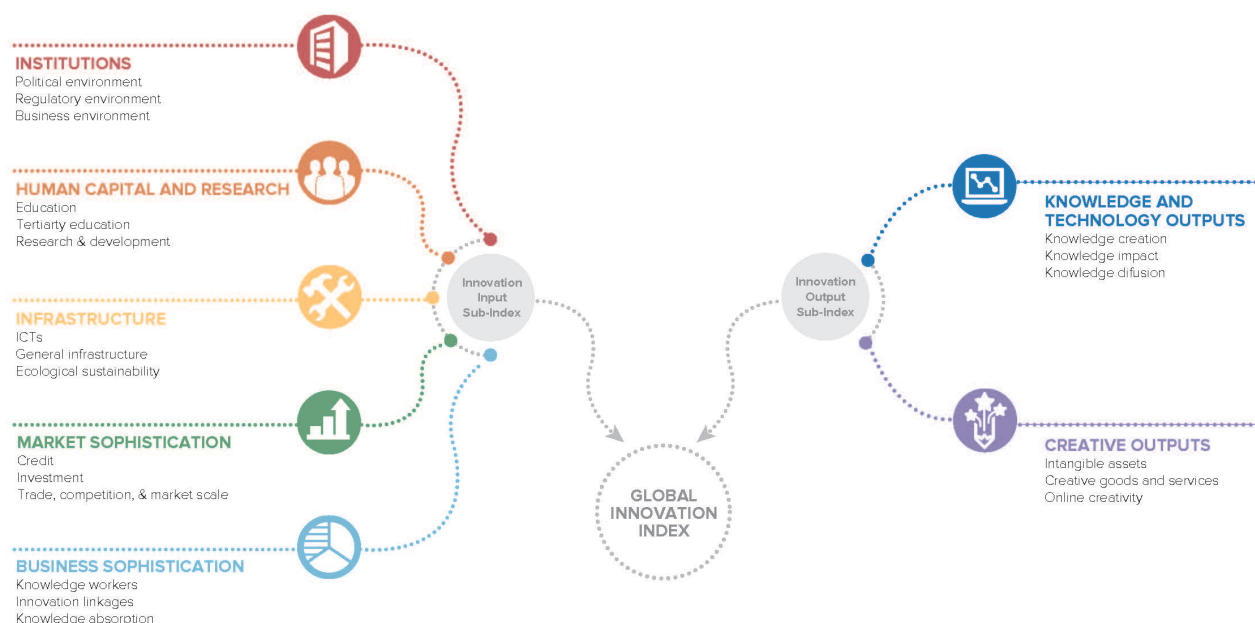
Code	Indicator name	Country year	Model year	Source
2.1.1	Expenditure on education, % GDP	2009	2015	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	2012	2015	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2016	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	2010	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.1	Knowledge-intensive employment, %	2011	2017	Source: International Labour Organization
5.1.3	GERD performed by business, % GDP	2010	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.4	GERD financed by business, %	2010	2016	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.2.3	GERD financed by abroad, %	2010	2016	UNESCO Institute for Statistics
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, %	2013	2016	United Nations Industrial Development Organization
7.2.4	Printing & other media, % manufacturing	2013	2016	United Nations Industrial Development Organization
7.3.3	Wikipedia edits/mn pop. 15–69	2016	2017	Wikimedia Foundation

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.

