Global Innovation Index 2022

MOROCCO

67th

Morocco ranks 67th 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 Morocco 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 Morocco in the GII 2022 is between ranks 61 and 71.

Rankings for Morocco (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	75	85	69
2021	77	84	67
2022	67	87	56

- Morocco performs better in innovation outputs than innovation inputs in 2022.
- This year Morocco ranks 87th in innovation inputs, lower than both 2021 and 2020.
- As for innovation outputs, Morocco ranks 56th. This position is higher than both 2021 and 2020.

6th

Morocco ranks 6th among the 36 lower-middle-income group economies.

8th

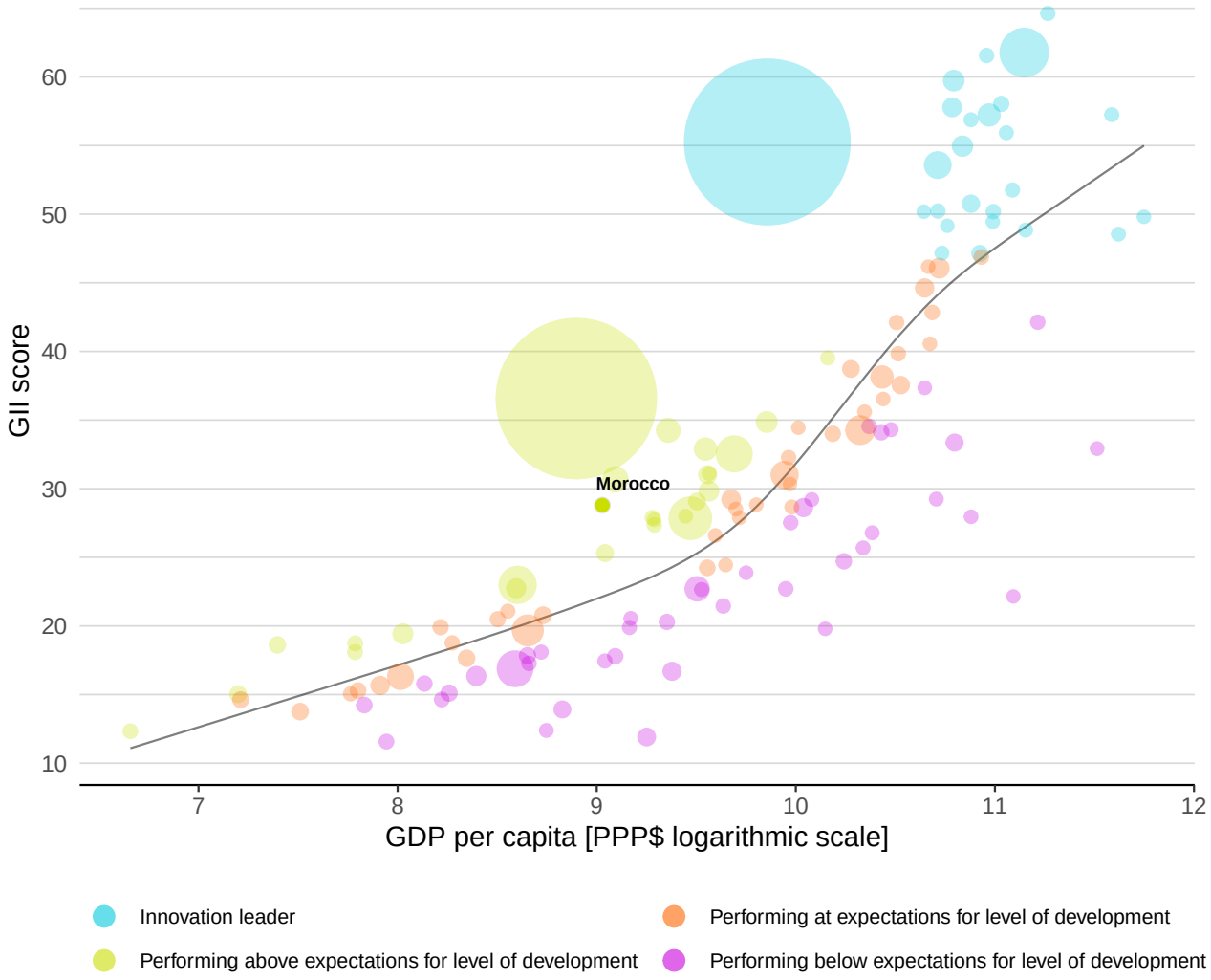
Morocco ranks 8th among the 19 economies in Northern Africa and Western Asia.

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

The positive relationship between innovation and development

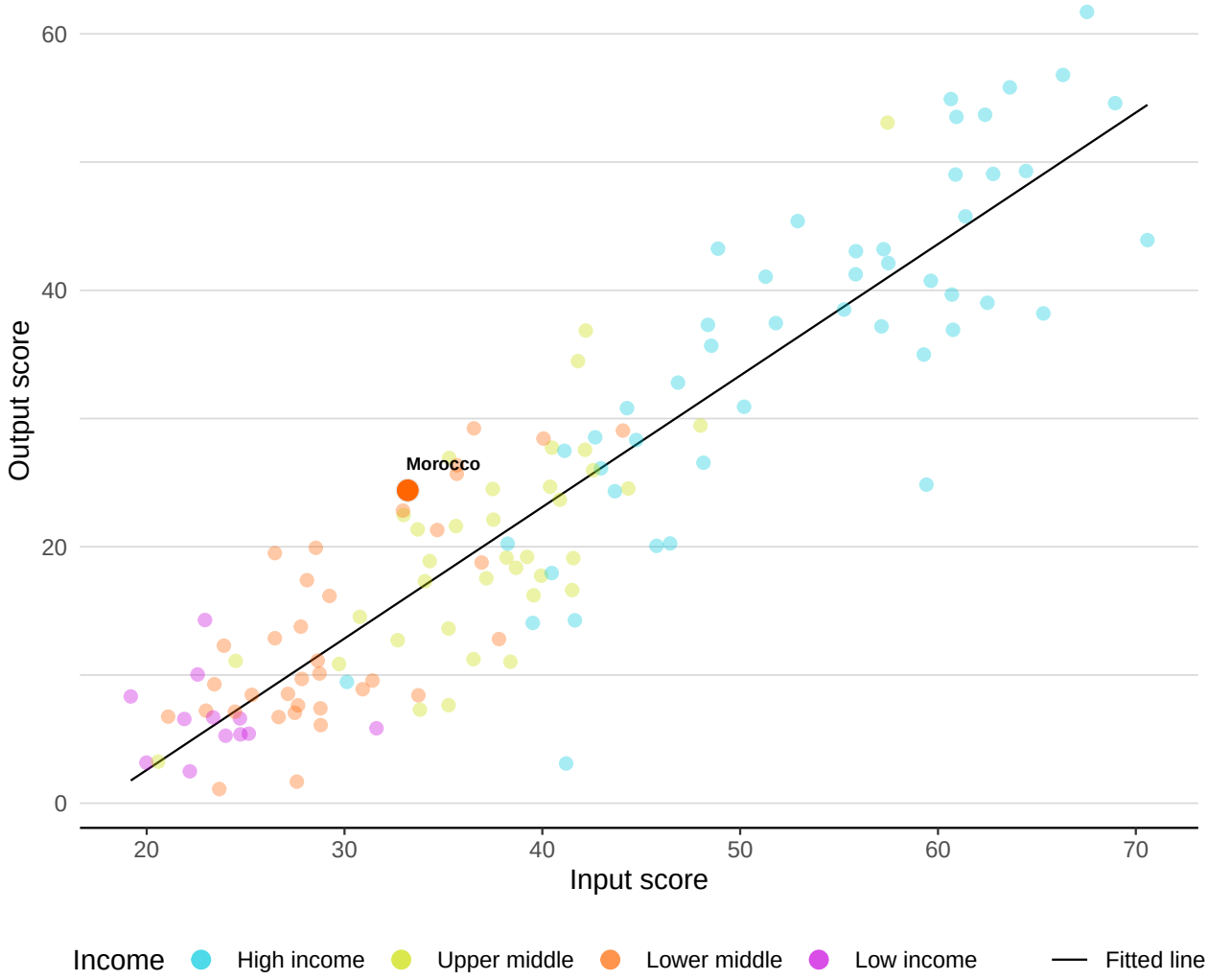


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

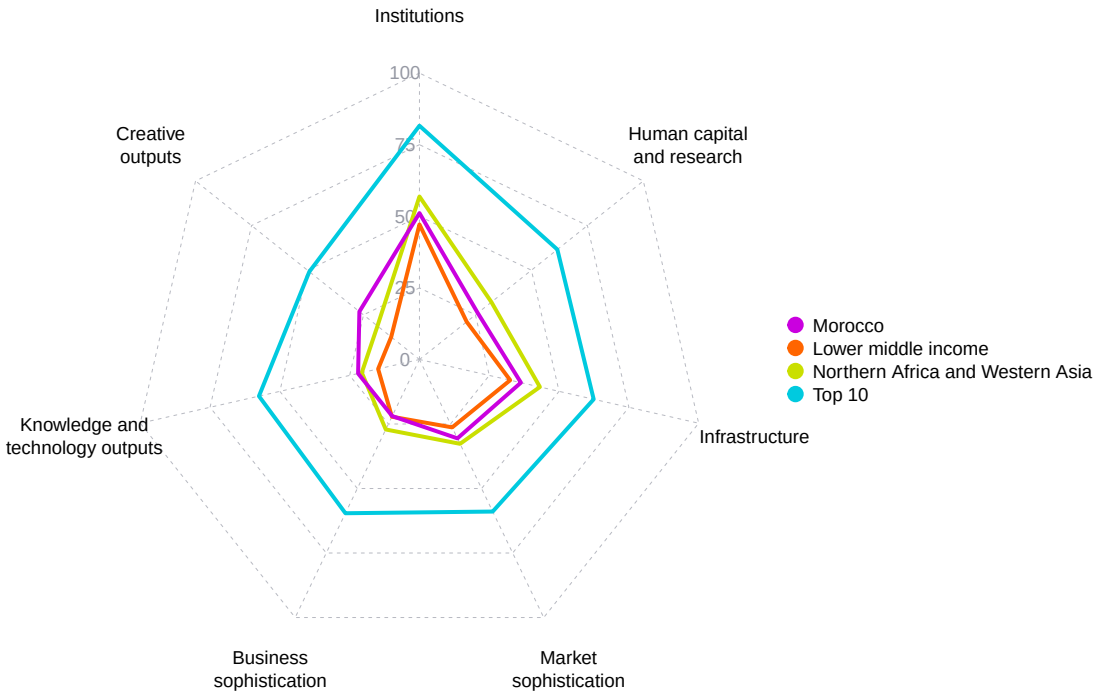
Morocco produces more innovation outputs relative to its level of innovation investments.

Innovation input to output performance



BENCHMARKING AGAINST OTHER LOWER MIDDLE-INCOME GROUP ECONOMIES AND NORTHERN AFRICA AND WESTERN ASIA

The seven GII pillar scores for Morocco



Lower-middle-income group economies

Morocco performs above the lower-middle-income group average in six pillars, namely: Institutions; Human capital and research; Infrastructure; Market sophistication; Knowledge and technology outputs; and, Creative outputs.

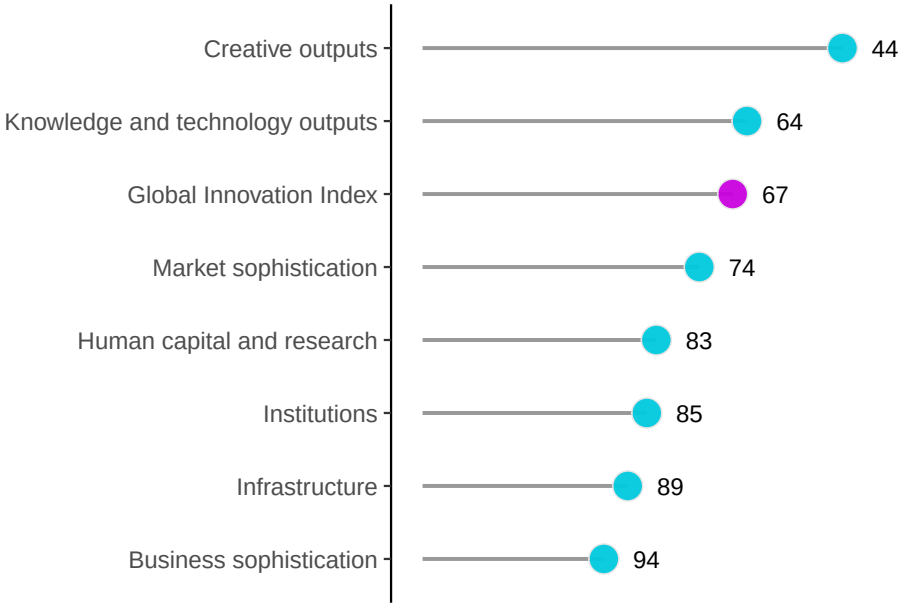
Northern Africa and Western Asia

Morocco performs above the regional average in two pillars, namely: Knowledge and technology outputs; and, Creative outputs.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Morocco performs best in Creative outputs and its weakest performance is in Business sophistication.

The seven GII pillar ranks for Morocco



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

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

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

INNOVATION STRENGTHS AND WEAKNESSES

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

Strengths and weaknesses for Morocco

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
2.1.1	Expenditure on education, % GDP	9	1.3.2	Entrepreneurship policies and culture	61
2.1.2	Government funding/pupil, secondary, % GDP/cap	5	2.1.4	PISA scales in reading, maths and science	74
3.1.1	ICT access	39	2.3.3	Global corporate R&D investors, top 3, mn USD	38
3.2.3	Gross capital formation, % GDP	32	2.3.4	QS university ranking, top 3	72
4.1.2	Domestic credit to private sector, % GDP	30	3.2.2	Logistics performance	101
6.2.1	Labor productivity growth, %	34	3.3.2	Environmental performance	115
6.2.5	High-tech manufacturing, %	24	4.2.2	Venture capital investors, deals/bn PPP$ GDP	83
6.3.4	ICT services exports, % total trade	23	5.1.1	Knowledge-intensive employment, %	116
7.1.2	Trademarks by origin/bn PPP$ GDP	33	5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	114
7.1.4	Industrial designs by origin/bn PPP$ GDP	9	7.2.3	Entertainment and media market/th pop. 15–69	60

GII 2022 rank

Morocco

67

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
56	87	Lower middle	NAWA	37.3	302.8	8,338

		Score/ Value	Rank	
Institutions		**51.1**	**85**	
1.1	**Political environment**	56.3	77	
1.1.1	Political and operational stability*	63.6	81	
1.1.2	Government effectiveness*	49.1	72	◆
1.2	**Regulatory environment**	58.9	83	
1.2.1	Regulatory quality*	42.0	80	◆
1.2.2	Rule of law*	43.8	67	◆
1.2.3	Cost of redundancy dismissal	20.7	89	
1.3	**Business environment**	38.1	90	
1.3.1	Policies for doing business†	59.6	40	◆
1.3.2	Entrepreneurship policies and culture*	16.7	61 ○	
Human capital and research		**26.0**	**83**	
2.1	**Education**	53.1	62	◆
2.1.1	Expenditure on education, % GDP	6.8	9 ●	◆
2.1.2	Government funding/pupil, secondary, % GDP/cap	36.4	5 ●	◆
2.1.3	School life expectancy, years	14.2	70	◆
2.1.4	PISA scales in reading, maths and science	367.9	74 ○	
2.1.5	Pupil-teacher ratio, secondary	20.0	94	
2.2	**Tertiary education**	22.5	85	
2.2.1	Tertiary enrolment, % gross	40.6	75	
2.2.2	Graduates in science and engineering, %	20.4	65	
2.2.3	Tertiary inbound mobility, %	2.1	76	
2.3	**Research and development (R&D)**	2.4	83	
2.3.1	Researchers, FTE/mn pop.	1,073.5	51	◆
2.3.2	Gross expenditure on R&D, % GDP	n/a	n/a	
2.3.3	Global corporate R&D investors, top 3, mn USD	0.0	38 ○	◇
2.3.4	QS university ranking, top 3*	0.0	72 ○	◇
Infrastructure		**36.3**	**89**	
3.1	**Information and communication technologies (ICTs)**	63.7	88	
3.1.1	ICT access*	90.7	39 ●	◆
3.1.2	ICT use*	60.6	73	◆
3.1.3	Government's online service*	52.3	99	
3.1.4	E-participation*	51.2	99	
3.2	**General infrastructure**	22.8	91	
3.2.1	Electricity output, GWh/mn pop.	1,073.7	95	
3.2.2	Logistics performance*	22.8	101 ○	
3.2.3	Gross capital formation, % GDP	28.1	32 ●	
3.3	**Ecological sustainability**	22.5	81	
3.3.1	GDP/unit of energy use	12.3	47	
3.3.2	Environmental performance*	28.4	115 ○	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.9	71	
Market sophistication		**30.6**	**74**	
4.1	**Credit**	25.7	69	
4.1.1	Finance for startups and scaleups*	30.2	59	
4.1.2	Domestic credit to private sector, % GDP	96.3	30 ●	◆
4.1.3	Loans from microfinance institutions, % GDP	0.8	32	
4.2	**Investment**	7.2	64	
4.2.1	Market capitalization, % GDP	54.5	35	
4.2.2	Venture capital investors, deals/bn PPP$ GDP	0.0	83 ○	
4.2.3	Venture capital recipients, deals/bn PPP$ GDP	0.0	73	
4.2.4	Venture capital received, value, % GDP	0.0	70	
4.3	**Trade, diversification, and market scale**	58.8	59	
4.3.1	Applied tariff rate, weighted avg., %	3.6	80	
4.3.2	Domestic industry diversification	93.1	34	
4.3.3	Domestic market scale, bn PPP$	302.8	56	

		Score/ Value	Rank	
Business sophistication		**21.9**	**94**	
5.1	**Knowledge workers**	24.1	[82]	
5.1.1	Knowledge-intensive employment, %	6.9	116 ○	
5.1.2	Firms offering formal training, %	35.7	44	
5.1.3	GERD performed by business, % GDP	n/a	n/a	
5.1.4	GERD financed by business, %	n/a	n/a	
5.1.5	Females employed w/advanced degrees, %	n/a	n/a	
5.2	**Innovation linkages**	20.5	90	
5.2.1	University-industry R&D collaboration†	36.2	98	
5.2.2	State of cluster development and depth†	42.5	91	
5.2.3	GERD financed by abroad, % GDP	n/a	n/a	
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.0	114 ○	
5.2.5	Patent families/bn PPP$ GDP	0.0	71	
5.3	**Knowledge absorption**	21.2	105	
5.3.1	Intellectual property payments, % total trade	0.3	78	
5.3.2	High-tech imports, % total trade	8.0	74	
5.3.3	ICT services imports, % total trade	1.1	85	
5.3.4	FDI net inflows, % GDP	2.0	75	
5.3.5	Research talent, % in businesses	7.0	64	
Knowledge and technology outputs		**22.0**	**64**	
6.1	**Knowledge creation**	11.6	68	
6.1.1	Patents by origin/bn PPP$ GDP	0.9	68	
6.1.2	PCT patents by origin/bn PPP$ GDP	0.2	51	◆
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	n/a	
6.1.4	Scientific and technical articles/bn PPP$ GDP	17.4	56	
6.1.5	Citable documents H-index	11.0	68	
6.2	**Knowledge impact**	31.7	53	◆
6.2.1	Labor productivity growth, %	2.0	34 ●	
6.2.2	New businesses/th pop. 15–64	2.2	56	◆
6.2.3	Software spending, % GDP	0.2	63	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	4.0	66	◆
6.2.5	High-tech manufacturing, %	42.8	24 ●	◆
6.3	**Knowledge diffusion**	22.6	68	
6.3.1	Intellectual property receipts, % total trade	0.0	84	
6.3.2	Production and export complexity	29.3	87	
6.3.3	High-tech exports, % total trade	2.1	58	
6.3.4	ICT services exports, % total trade	4.4	23 ●	
Creative outputs		**26.8**	**44**	◆
7.1	**Intangible assets**	49.5	23 ●	◆
7.1.1	Intangible asset intensity, top 15, %	65.1	31	
7.1.2	Trademarks by origin/bn PPP$ GDP	66.9	33 ●	◆
7.1.3	Global brand value, top 5,000, % GDP	17.8	48	
7.1.4	Industrial designs by origin/bn PPP$ GDP	10.4	9 ●	◆
7.2	**Creative goods and services**	6.1	95	
7.2.1	Cultural and creative services exports, % total trade	0.4	58	
7.2.2	National feature films/mn pop. 15–69	0.9	62	
7.2.3	Entertainment and media market/th pop. 15–69	0.7	60 ○	◇
7.2.4	Printing and other media, % manufacturing	0.7	73	
7.2.5	Creative goods exports, % total trade	0.1	96	
7.3	**Online creativity**	2.2	83	
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	1.6	87	
7.3.2	Country-code TLDs/th pop. 15–69	1.2	81	
7.3.3	GitHub commit pushes received/mn pop. 15–69	1.6	91	
7.3.4	Mobile app creation/bn PPP$ GDP	4.3	58	

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 Morocco.

Missing data for Morocco

Code	Indicator name	Economy year	Model year	Source
2.3.2	Gross expenditure on R&D, % GDP	n/a	2020	UNESCO Institute for Statistics
5.1.3	GERD performed by business, % GDP	n/a	2020	UNESCO Institute for Statistics
5.1.4	GERD financed by business, %	n/a	2019	UNESCO Institute for Statistics
5.1.5	Females employed w/advanced degrees, %	n/a	2021	International Labour Organization
5.2.3	GERD financed by abroad, % GDP	n/a	2019	UNESCO Institute for Statistics
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2020	World Intellectual Property Organization

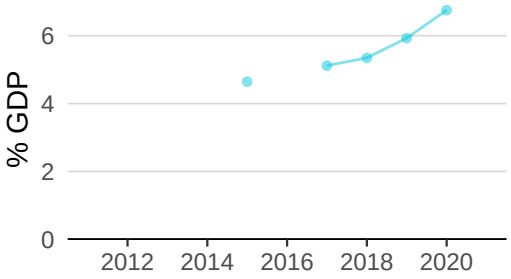
Outdated data for Morocco

Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	2012	2018	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2016	2020	UNESCO Institute for Statistics
5.1.1	Knowledge-intensive employment, %	2011	2021	International Labour Organization
5.3.5	Research talent, % in businesses	2016	2020	UNESCO Institute for Statistics
7.2.4	Printing and other media, % manufacturing	2011	2019	United Nations Industrial Development Organization

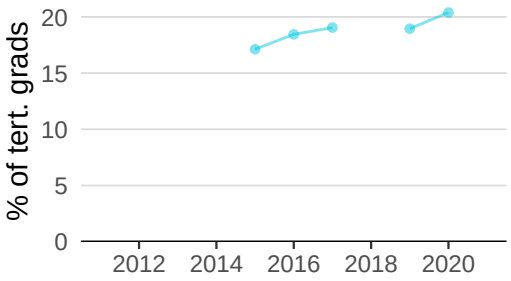
MOROCCO'S INNOVATION SYSTEM

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

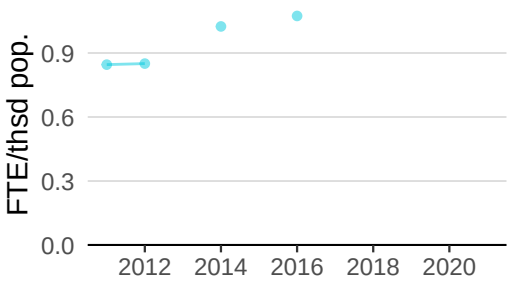
Innovation inputs



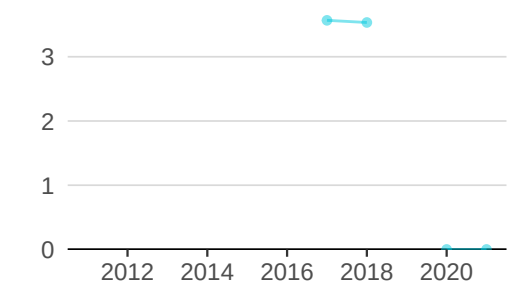
2.1.1 Expenditure on education was equal to 6.8% GDP in 2020–up by 14 percentage points from the year prior–and equivalent to an indicator rank of 9.



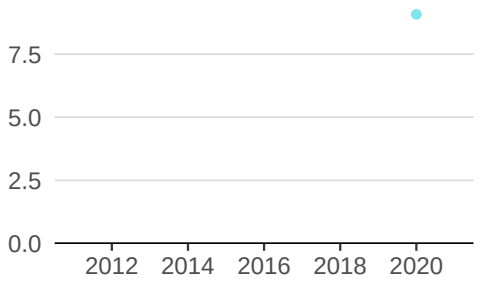
2.2.2 Graduates in science and engineering was equal to 20.4% of tert. grads in 2020–up by 8 percentage points from the year prior–and equivalent to an indicator rank of 65.



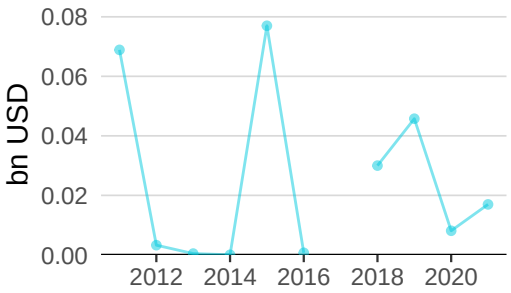
2.3.1 Researchers was equal to 1.1 FTE/thsd pop. in 2016 and equivalent to an indicator rank of 51.



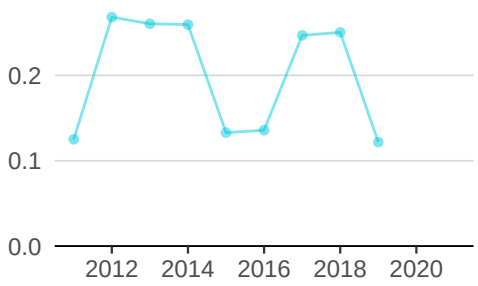
2.3.4 QS university ranking was equal to 0.0 in 2021–effectively unchanged from the year prior–and equivalent to an indicator rank of 72.



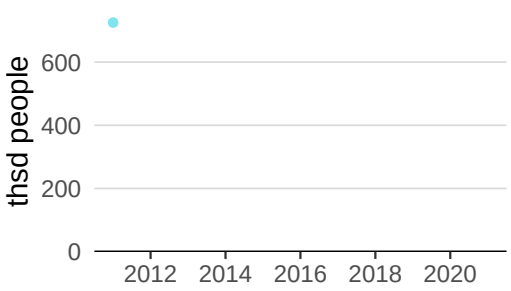
3.1.1 ICT access was equal to 9.1 in 2020 and equivalent to an indicator rank of 39.



4.2.4 Venture capital received was equal to 0.0 bn USD in 2021–up by 110 percentage points from the year prior–and equivalent to an indicator rank of 70.

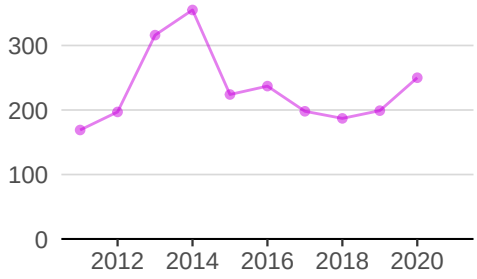


4.3.2 Domestic industry diversification was equal to 0.1 in 2019–down by 51 percentage points from the year prior–and equivalent to an indicator rank of 34.

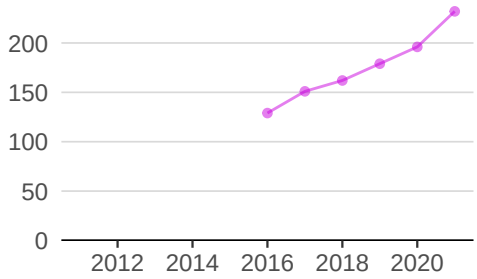


5.1.1 Knowledge-intensive employment was equal to 725.1 thsd people in 2011 and equivalent to an indicator rank of 116.

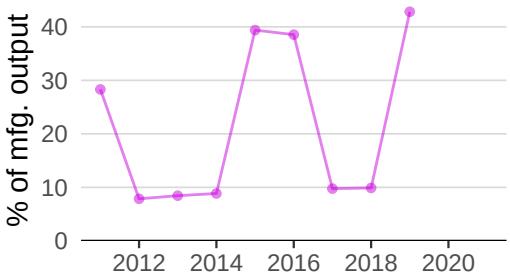
Innovation outputs



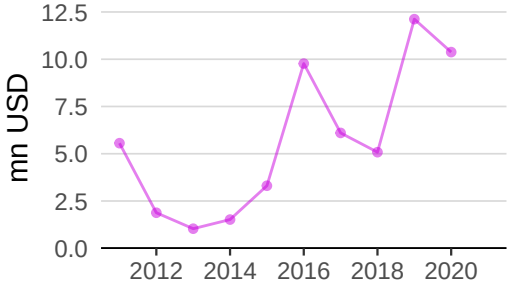
6.1.1 Patents by origin was equal to 250.0 in 2020–up by 26 percentage points from the year prior–and equivalent to an indicator rank of 68.



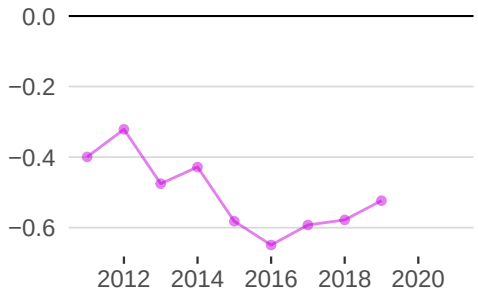
6.1.5 Citable documents H-index was equal to 232.0 in 2021–up by 18 percentage points from the year prior–and equivalent to an indicator rank of 68.



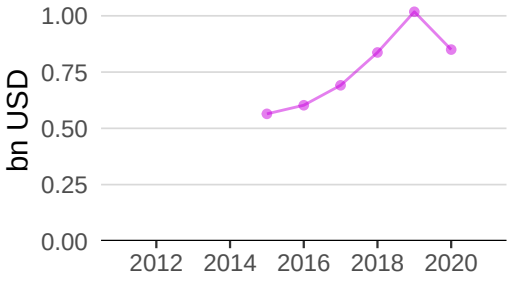
6.2.5 High-tech manufacturing was equal to 42.8% of mfg. output in 2019–up by 333 percentage points from the year prior–and equivalent to an indicator rank of 24.



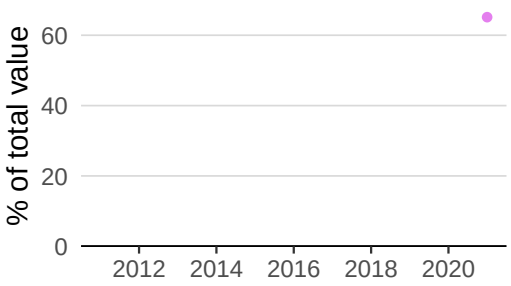
6.3.1 Intellectual property receipts was equal to 10.4 mn USD in 2020–down by 14 percentage points from the year prior–and equivalent to an indicator rank of 84.



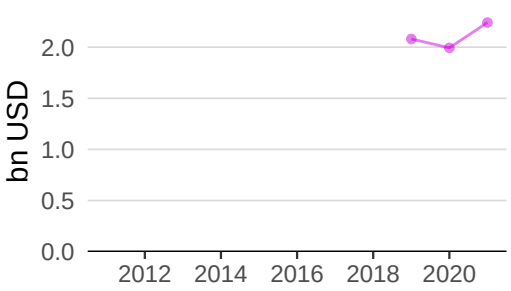
6.3.2 Production and export complexity was equal to -0.5 in 2019–up by 9 percentage points from the year prior–and equivalent to an indicator rank of 87.



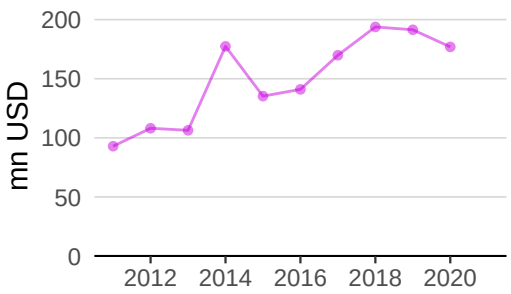
6.3.3 High-tech exports was equal to 0.9 bn USD in 2020–down by 16 percentage points from the year prior–and equivalent to an indicator rank of 58.



7.1.1 Intangible asset intensity was equal to 65.1% of total value in 2021 and equivalent to an indicator rank of 31.



7.1.3 Global brand value was equal to 2.2 bn USD in 2021–up by 12 percentage points from the year prior–and equivalent to an indicator rank of 48.



7.2.1 Cultural and creative services exports was equal to 176.9 mn USD in 2020–down by 8 percentage points from the year prior–and equivalent to an indicator rank of 58.

MOROCCO'S INNOVATION TOP PERFORMERS

2.3.3 Global corporate R&D investors

Firm	Industry	R&D	R&D Growth	R&D Intensity	Rank

No observations

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

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
ITISSALAT AL-MAGHRIB	1
ATTIJARIWAFA BANK	2
LAFARGEHOLCIM MAROC	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

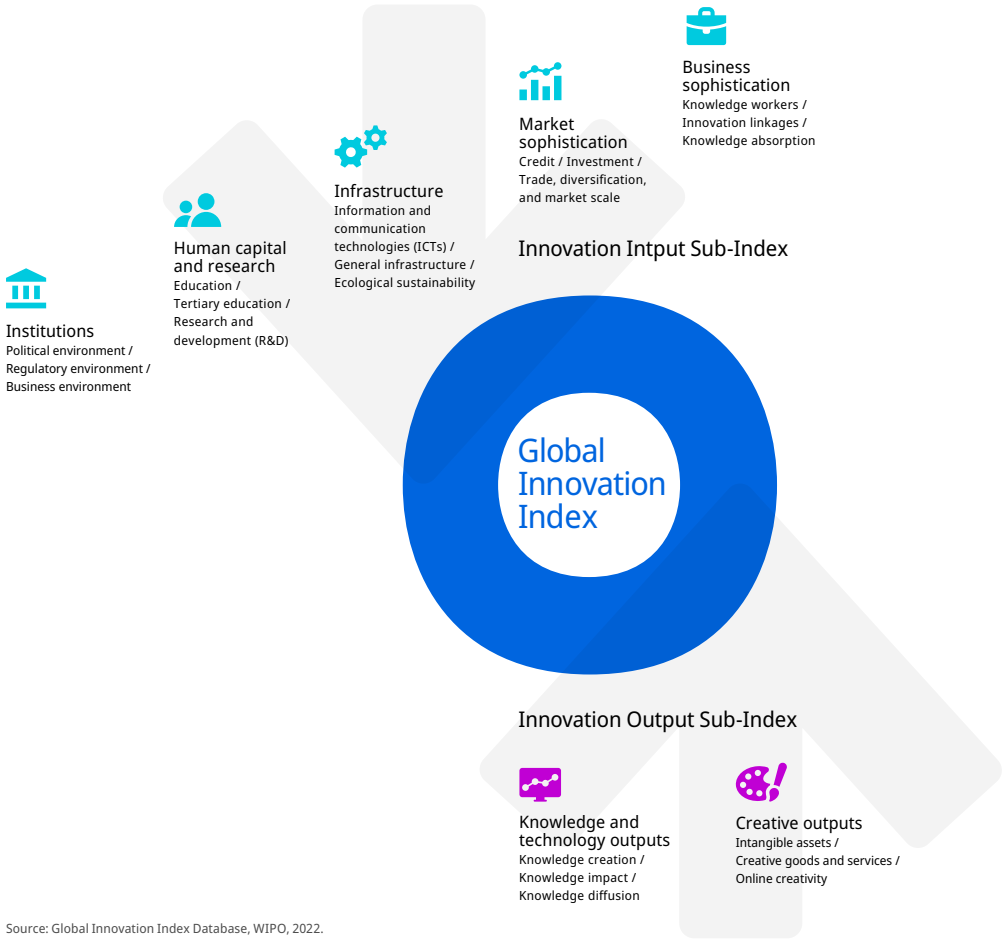
Brand	Industry	Rank
MAROC TELECOM	Telecoms	1
BANQUE POPULAIRE DU MAROC	Banking	2
ATTIJARIWAFA BANK	Banking	3

Source: Brand Finance (https://brandirectory.com).
Note: Rank corresponds to within economy ranks.

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.