



## BENIN

**124th** Benin ranks 124th 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 Benin 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 Benin in the GII 2022 is between ranks 116 and 130.

### Rankings for Benin (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	126	116	131
2021	128	113	132
2022	124	107	131

- Benin performs better in innovation inputs than innovation outputs in 2022.
- This year Benin ranks 107th in innovation inputs, higher than both 2021 and 2020.
- As for innovation outputs, Benin ranks 131st. This position is higher than last year but the same as 2020.

**34th** Benin ranks 34th among the 36 lower-middle-income group economies.

**21st** Benin ranks 21st among the 27 economies in Sub-Saharan Africa.

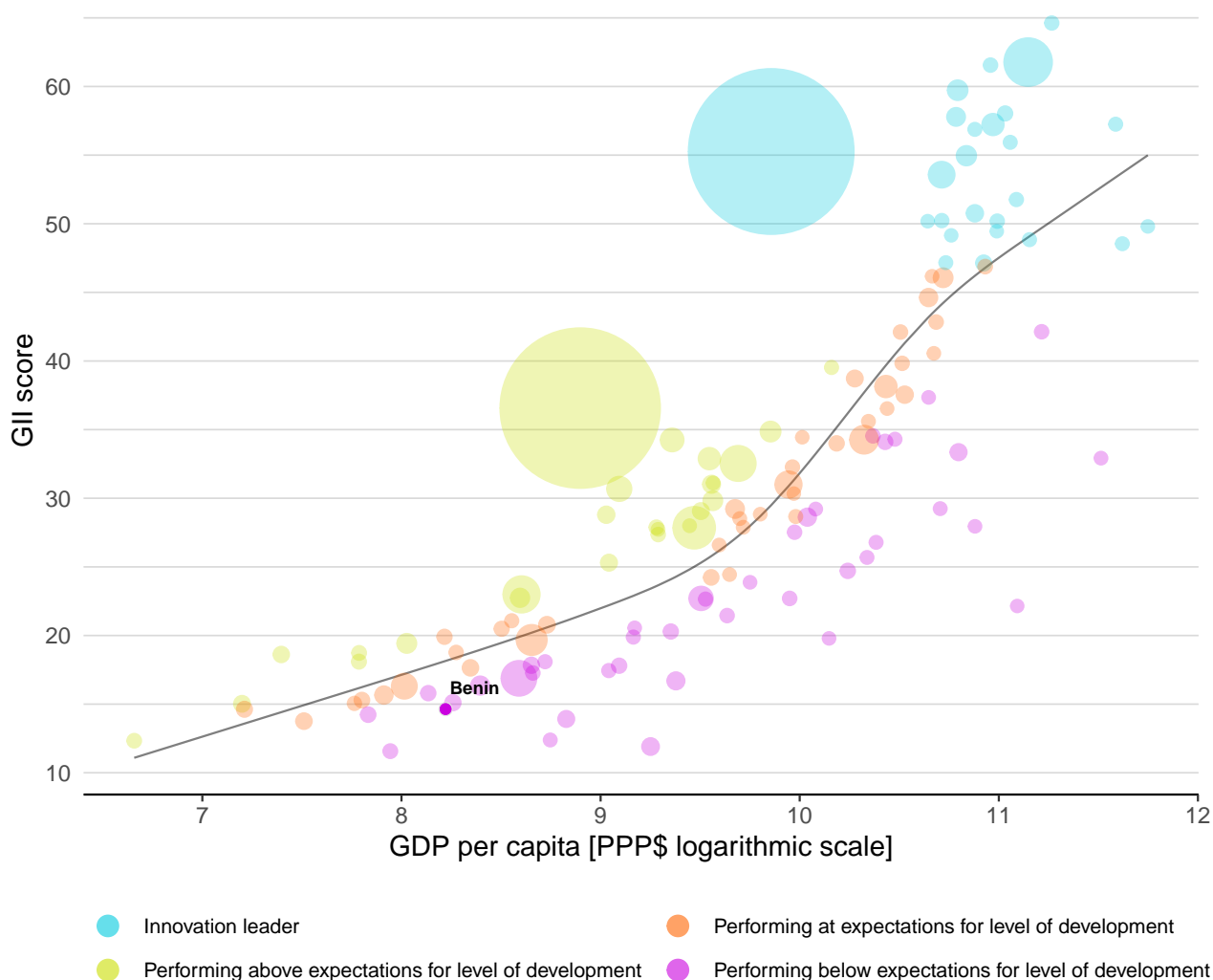


## EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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, Benin's performance is below expectations for its level of development.

### The positive relationship between innovation and development



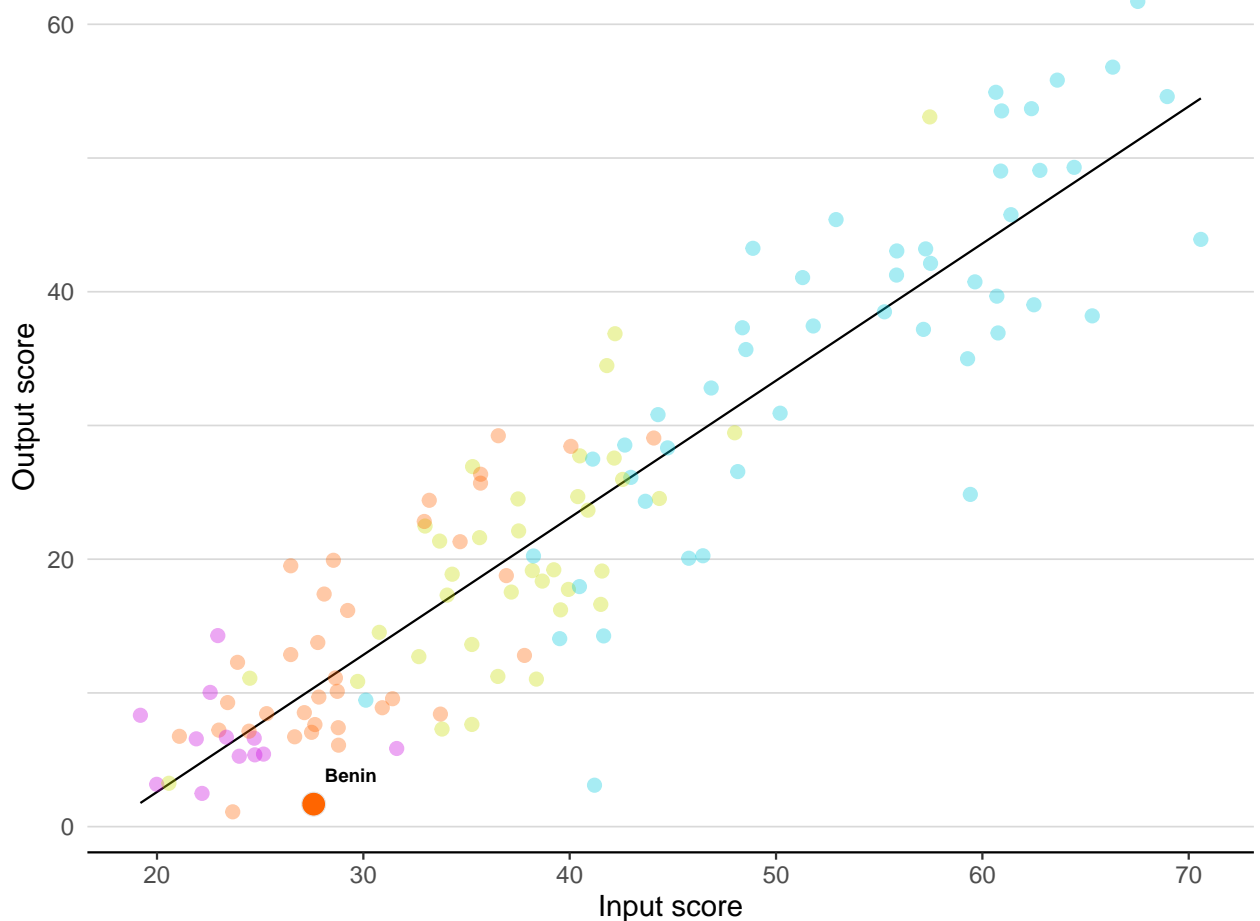


## EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

### Innovation input to output performance

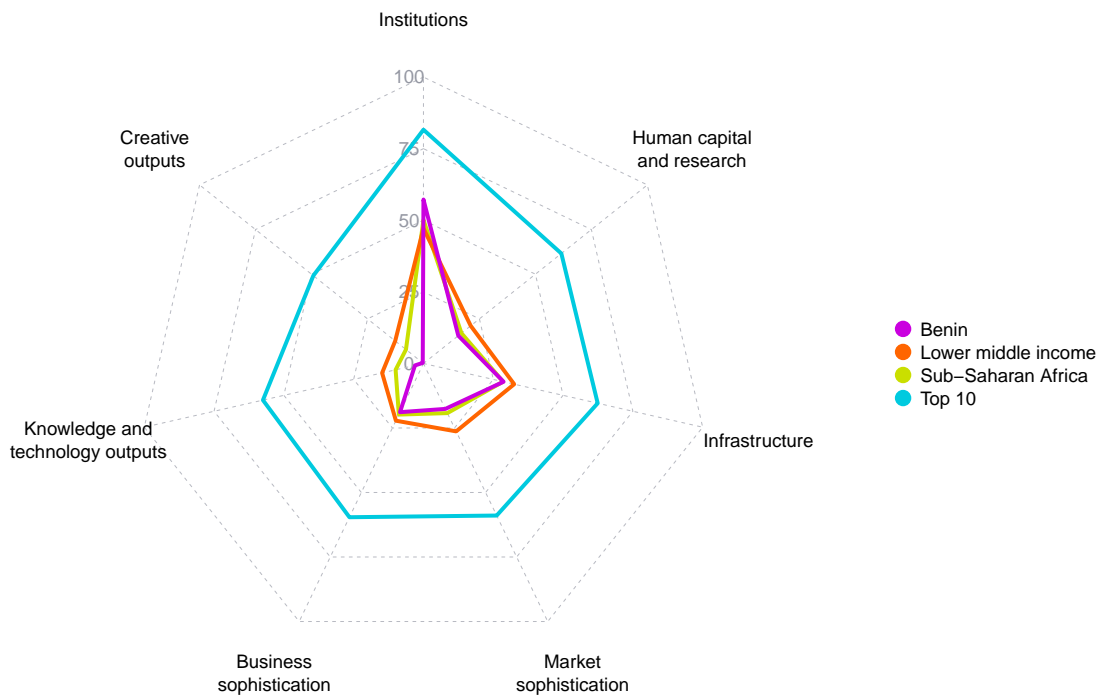


Income    ● High income    ● Upper middle    ● Lower middle    ● Low income    — Fitted line



## BENCHMARKING AGAINST OTHER LOWER MIDDLE-INCOME GROUP ECONOMIES AND SUB-SAHARAN AFRICA

### The seven GII pillar scores for Benin



#### Lower-middle-income group economies

Benin performs above the lower-middle-income group average in Institutions.

#### Sub-Saharan Africa

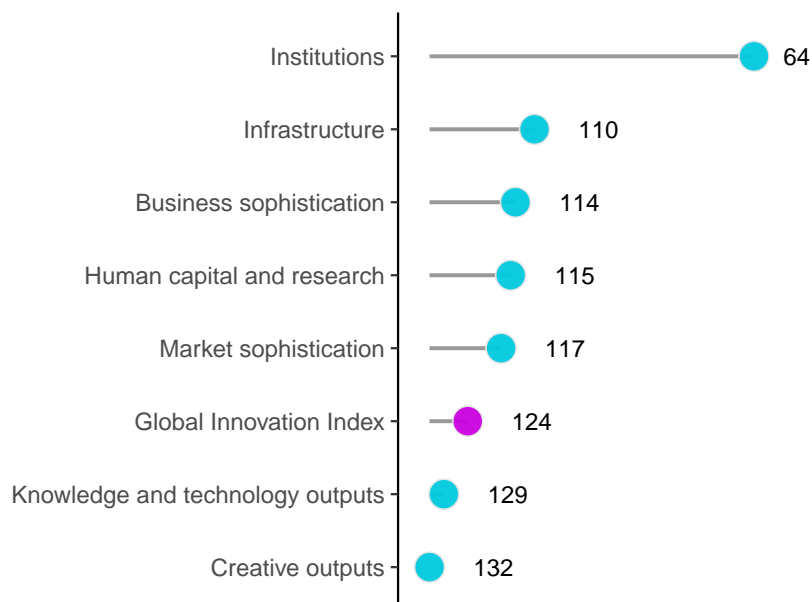
Benin performs above the regional average in two pillars, namely: Institutions; and, Infrastructure.



## OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Benin performs best in Institutions and its weakest performance is in Creative outputs.

### The seven GII pillar ranks for Benin



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

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

[https://www.wipo.int/ipstats/en/statistics/country\\_profile/profile.jsp?code=BJ](https://www.wipo.int/ipstats/en/statistics/country_profile/profile.jsp?code=BJ).







## INNOVATION STRENGTHS AND WEAKNESSES

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

### Strengths and weaknesses for Benin

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal	38	2.3.3	Global corporate R&D investors, top 3, mn USD	38
1.3.1	Policies for doing business	45	2.3.4	QS university ranking, top 3	72
2.2.2	Graduates in science and engineering, %	70	3.2.1	Electricity output, GWh/mn pop.	127
2.2.3	Tertiary inbound mobility, %	68	5.2.5	Patent families/bn PPP\$ GDP	101
3.2.2	Logistics performance	75	6.1.2	PCT patents by origin/bn PPP\$ GDP	101
3.2.3	Gross capital formation, % GDP	40	6.1.3	Utility models by origin/bn PPP\$ GDP	78
4.1.3	Loans from microfinance institutions, % GDP	16	7.1.2	Trademarks by origin/bn PPP\$ GDP	127
5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	76	7.1.3	Global brand value, top 5,000, % GDP	77
5.3.3	ICT services imports, % total trade	19	7.2.1	Cultural and creative services exports, % total trade	109
6.1.4	Scientific and technical articles/bn PPP\$ GDP	74	7.2.5	Creative goods exports, % total trade	129

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
131	107	Lower middle	SSA	12.5	46.5	3,720

	Score/Value	Rank		Score/Value	Rank
 <b>Institutions</b>	57.2	64 ● ◆	 <b>Business sophistication</b>	18.9	114
<b>1.1 Political environment</b>	52.9	89	<b>5.1 Knowledge workers</b>	9.7	[122]
1.1.1 Political and operational stability*	61.8	87	5.1.1 Knowledge-intensive employment, %	⊙	6.1 118
1.1.2 Government effectiveness*	44.0	86	5.1.2 Firms offering formal training, %	⊙	20.0 79
<b>1.2 Regulatory environment</b>	62.1	74 ● ◆	5.1.3 GERD performed by business, % GDP	n/a	n/a
1.2.1 Regulatory quality*	35.6	94	5.1.4 GERD financed by business, %	n/a	n/a
1.2.2 Rule of law*	27.2	107	5.1.5 Females employed w/advanced degrees, %	⊙	1.2 112
1.2.3 Cost of redundancy dismissal	11.6	38 ●	<b>5.2 Innovation linkages</b>	19.3	98
<b>1.3 Business environment</b>	56.7	[37]	5.2.1 University-industry R&D collaboration†	37.1	95
1.3.1 Policies for doing business†	56.7	45 ● ◆	5.2.2 State of cluster development and depth†	34.5	119
1.3.2 Entrepreneurship policies and culture*	n/a	n/a	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	76 ●
			5.2.5 Patent families/bn PPP\$ GDP	0.0	101 ○ ◇
 <b>Human capital and research</b>	15.6	115	<b>5.3 Knowledge absorption</b>	27.6	77 ●
<b>2.1 Education</b>	31.0	119	5.3.1 Intellectual property payments, % total trade	⊙	0.0 120 ◇
2.1.1 Expenditure on education, % GDP	3.0	108	5.3.2 High-tech imports, % total trade	4.7	119
2.1.2 Government funding/pupil, secondary, % GDP/cap ⊙	7.9	102	5.3.3 ICT services imports, % total trade	⊙	2.9 19 ● ◆
2.1.3 School life expectancy, years	10.8	97	5.3.4 FDI net inflows, % GDP	1.3	89
2.1.4 PISA scales in reading, maths and science	n/a	n/a	5.3.5 Research talent, % in businesses	n/a	n/a
2.1.5 Pupil-teacher ratio, secondary	18.2	88	 <b>Knowledge and technology outputs</b>	3.0	129 ○ ◇
<b>2.2 Tertiary education</b>	15.7	101	<b>6.1 Knowledge creation</b>	4.5	110
2.2.1 Tertiary enrolment, % gross	11.1	110	6.1.1 Patents by origin/bn PPP\$ GDP	0.1	117
2.2.2 Graduates in science and engineering, %	19.7	70 ●	6.1.2 PCT patents by origin/bn PPP\$ GDP	0.0	101 ○ ◇
2.2.3 Tertiary inbound mobility, %	3.0	68 ●	6.1.3 Utility models by origin/bn PPP\$ GDP	⊙	0.0 78 ○ ◇
<b>2.3 Research and development (R&amp;D)</b>	0.0	[120]	6.1.4 Scientific and technical articles/bn PPP\$ GDP	13.1	74 ●
2.3.1 Researchers, FTE/mn pop.	n/a	n/a	6.1.5 Citable documents H-index	4.0	105
2.3.2 Gross expenditure on R&D, % GDP	n/a	n/a	<b>6.2 Knowledge impact</b>	3.1	[128]
2.3.3 Global corporate R&D investors, top 3, mn USD	0.0	38 ○ ◇	6.2.1 Labor productivity growth, %	n/a	n/a
2.3.4 QS university ranking, top 3*	0.0	72 ○ ◇	6.2.2 New businesses/th pop. 15-64	0.6	91
			6.2.3 Software spending, % GDP	0.1	101
 <b>Infrastructure</b>	28.7	110	6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	1.0	104
<b>3.1 Information and communication technologies (ICTs)</b>	46.9	112	6.2.5 High-tech manufacturing, %	n/a	n/a
3.1.1 ICT access*	54.2	119 ◇	<b>6.3 Knowledge diffusion</b>	1.5	131 ○ ◇
3.1.2 ICT use*	27.4	116 ◇	6.3.1 Intellectual property receipts, % total trade	⊙	0.0 104
3.1.3 Government's online service*	51.2	104	6.3.2 Production and export complexity	n/a	n/a
3.1.4 E-participation*	54.8	93	6.3.3 High-tech exports, % total trade	0.1	123
<b>3.2 General infrastructure</b>	23.5	87	6.3.4 ICT services exports, % total trade	⊙	0.4 104
3.2.1 Electricity output, GWh/mn pop.	81.7	127 ○	 <b>Creative outputs</b>	0.3	132 ○ ◇
3.2.2 Logistics performance*	32.6	75 ●	<b>7.1 Intangible assets</b>	0.4	130 ○ ◇
3.2.3 Gross capital formation, % GDP	26.7	40 ●	7.1.1 Intangible asset intensity, top 15, %	n/a	n/a
<b>3.3 Ecological sustainability</b>	15.6	124	7.1.2 Trademarks by origin/bn PPP\$ GDP	3.7	127 ○
3.3.1 GDP/unit of energy use	7.1	101	7.1.3 Global brand value, top 5,000, % GDP	0.0	77 ○ ◇
3.3.2 Environmental performance*	29.6	110	7.1.4 Industrial designs by origin/bn PPP\$ GDP	0.1	112
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	0.1	121	<b>7.2 Creative goods and services</b>	0.1	[131]
			7.2.1 Cultural and creative services exports, % total trade	0.0	109 ○
 <b>Market sophistication</b>	17.6	117	7.2.2 National feature films/mn pop. 15-69	n/a	n/a
<b>4.1 Credit</b>	16.7	95	7.2.3 Entertainment and media market/th pop. 15-69	n/a	n/a
4.1.1 Finance for startups and scaleups*	n/a	n/a	7.2.4 Printing and other media, % manufacturing	n/a	n/a
4.1.2 Domestic credit to private sector, % GDP	15.5	116	7.2.5 Creative goods exports, % total trade	0.0	129 ○
4.1.3 Loans from microfinance institutions, % GDP	2.0	16 ●	<b>7.3 Online creativity</b>	0.4	114
<b>4.2 Investment</b>	n/a	[n/a]	7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	0.6	103
4.2.1 Market capitalization, % GDP	n/a	n/a	7.3.2 Country-code TLDs/th pop. 15-69	0.1	119
4.2.2 Venture capital investors, deals/bn PPP\$ GDP	n/a	n/a	7.3.3 GitHub commit pushes received/mn pop. 15-69	0.4	112
4.2.3 Venture capital recipients, deals/bn PPP\$ GDP	n/a	n/a	7.3.4 Mobile app creation/bn PPP\$ GDP	n/a	n/a
4.2.4 Venture capital received, value, % GDP	n/a	n/a			
<b>4.3 Trade, diversification, and market scale</b>	18.5	127 ◇			
4.3.1 Applied tariff rate, weighted avg., %	9.9	117			
4.3.2 Domestic industry diversification	n/a	n/a			
4.3.3 Domestic market scale, bn PPP\$	46.5	105			

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](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 Benin.

### Missing data for Benin

Code	Indicator name	Economy year	Model year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2021	Global Entrepreneurship Monitor
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD, PISA
2.3.1	Researchers, FTE/mn pop.	n/a	2020	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	n/a	2020	UNESCO Institute for Statistics
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
4.2.2	Venture capital investors, deals/bn PPP\$ GDP	n/a	2021	Refinitiv
4.2.3	Venture capital recipients, deals/bn PPP\$ GDP	n/a	2021	Refinitiv
4.2.4	Venture capital received, value, % GDP	n/a	2021	Refinitiv
4.3.2	Domestic industry diversification	n/a	2019	United Nations Industrial Development Organization
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
5.2.3	GERD financed by abroad, % GDP	n/a	2019	UNESCO Institute for Statistics
5.3.5	Research talent, % in businesses	n/a	2020	UNESCO Institute for Statistics
6.2.1	Labor productivity growth, %	n/a	2021	The Conference Board
6.2.5	High-tech manufacturing, %	n/a	2019	United Nations Industrial Development Organization
6.3.2	Production and export complexity	n/a	2019	Harvard University, Growth Lab
7.1.1	Intangible asset intensity, top 15, %	n/a	2021	Brand Finance
7.2.2	National feature films/mn pop. 15–69	n/a	2019	OMDIA
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2021	PwC, GEMO
7.2.4	Printing and other media, % manufacturing	n/a	2019	United Nations Industrial Development Organization
7.3.4	Mobile app creation/bn PPP\$ GDP	n/a	2021	data.ia



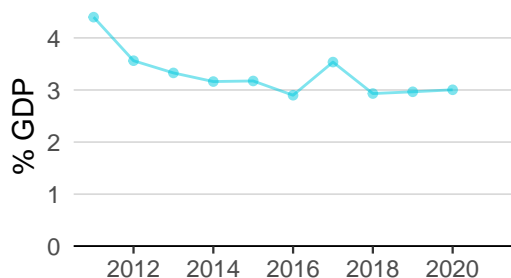
## Outdated data for Benin

Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	2015	2018	UNESCO Institute for Statistics
5.1.1	Knowledge-intensive employment, %	2018	2021	International Labour Organization
5.1.2	Firms offering formal training, %	2016	2019	World Bank Enterprise Surveys
5.1.5	Females employed w/advanced degrees, %	2018	2021	International Labour Organization
5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	2019	2021	Refinitiv
5.3.1	Intellectual property payments, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development
5.3.3	ICT services imports, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development
6.1.3	Utility models by origin/bn PPP\$ GDP	2019	2020	World Intellectual Property Organization
6.3.1	Intellectual property receipts, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development
6.3.4	ICT services exports, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development

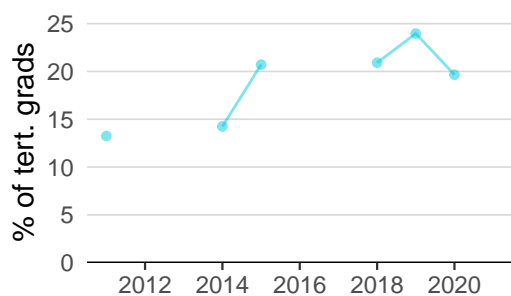
## BENIN'S INNOVATION SYSTEM

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

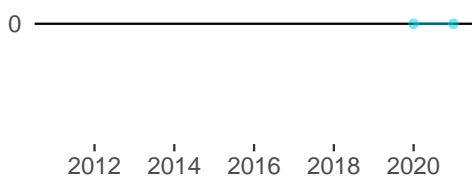
### Innovation inputs



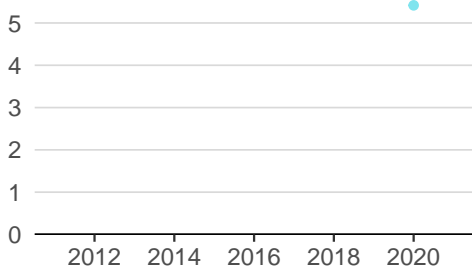
**2.1.1 Expenditure on education** was equal to 3.0% GDP in 2020—up by 1 percentage point from the year prior—and equivalent to an indicator rank of 108.



**2.2.2 Graduates in science and engineering** was equal to 19.7% of tert. grads in 2020—down by 18 percentage points from the year prior—and equivalent to an indicator rank of 70.



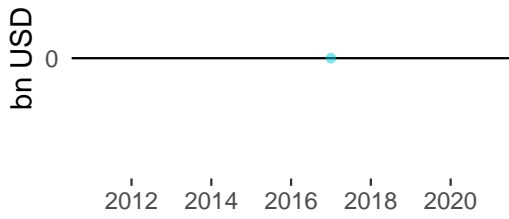
**2.3.4 QS university ranking** was equal to 0.0 in 2021—effectively unchanged from the year prior—and equivalent to an indicator rank of 72.



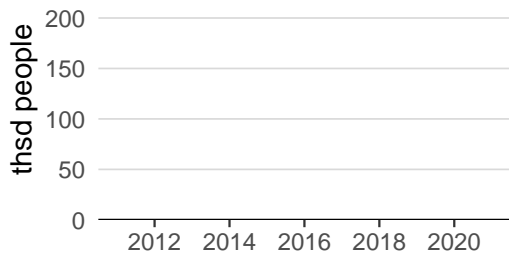
**3.1.1 ICT access** was equal to 5.4 in 2020 and equivalent to an indicator rank of 119.



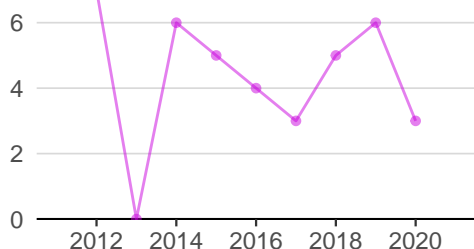
**4.2.4 Venture capital received** was equal to 0.0 bn USD in 2017 .



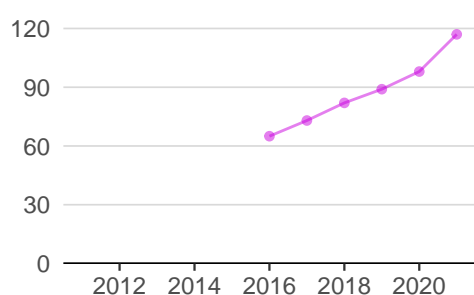
**5.1.1 Knowledge-intensive employment** was equal to 227.0 thsd people in 2018 and equivalent to an indicator rank of 118.



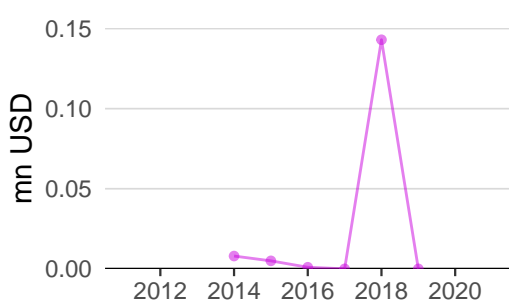
## Innovation outputs



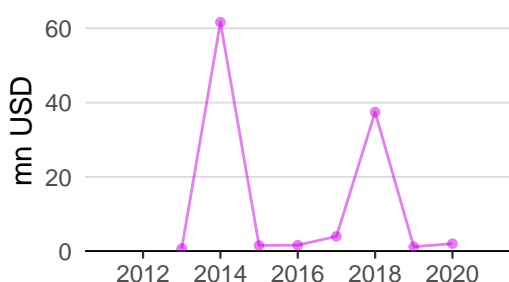
**6.1.1 Patents by origin** was equal to 3.0 in 2020—down by 50 percentage points from the year prior—and equivalent to an indicator rank of 117.



**6.1.5 Citable documents H-index** was equal to 117.0 in 2021—up by 19 percentage points from the year prior—and equivalent to an indicator rank of 105.



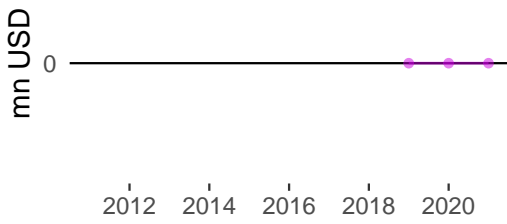
**6.3.1 Intellectual property receipts** was equal to 0.0 mn USD in 2019—down by 100 percentage points from the year prior—and equivalent to an indicator rank of 104.



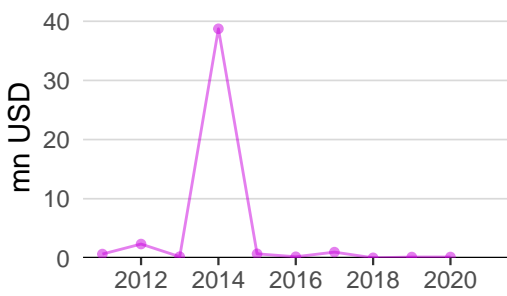
**6.3.3 High-tech exports** was equal to 2.1 mn USD in 2020—up by 70 percentage points from the year prior—and equivalent to an indicator rank of 123.



**7.1.3 Global brand value** was equal to 0.0 mn USD in 2021—effectively unchanged from the year prior—and equivalent to an indicator rank of 77.



**7.2.1 Cultural and creative services exports** was equal to 0.1 mn USD in 2020—up by 5 percentage points from the year prior—and equivalent to an indicator rank of 109.





## BENIN'S INNOVATION TOP PERFORMERS

### 2.3.3 Global corporate R&D investors

Firm	Industry	R&D	R&D Growth	R&D Intensity	Rank
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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
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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
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No observations

Source: Brand Finance (<https://brandirectory.com/reports/gift-2021>).

### 7.1.3 Global brand value, top 5,000

Brand	Industry	Rank
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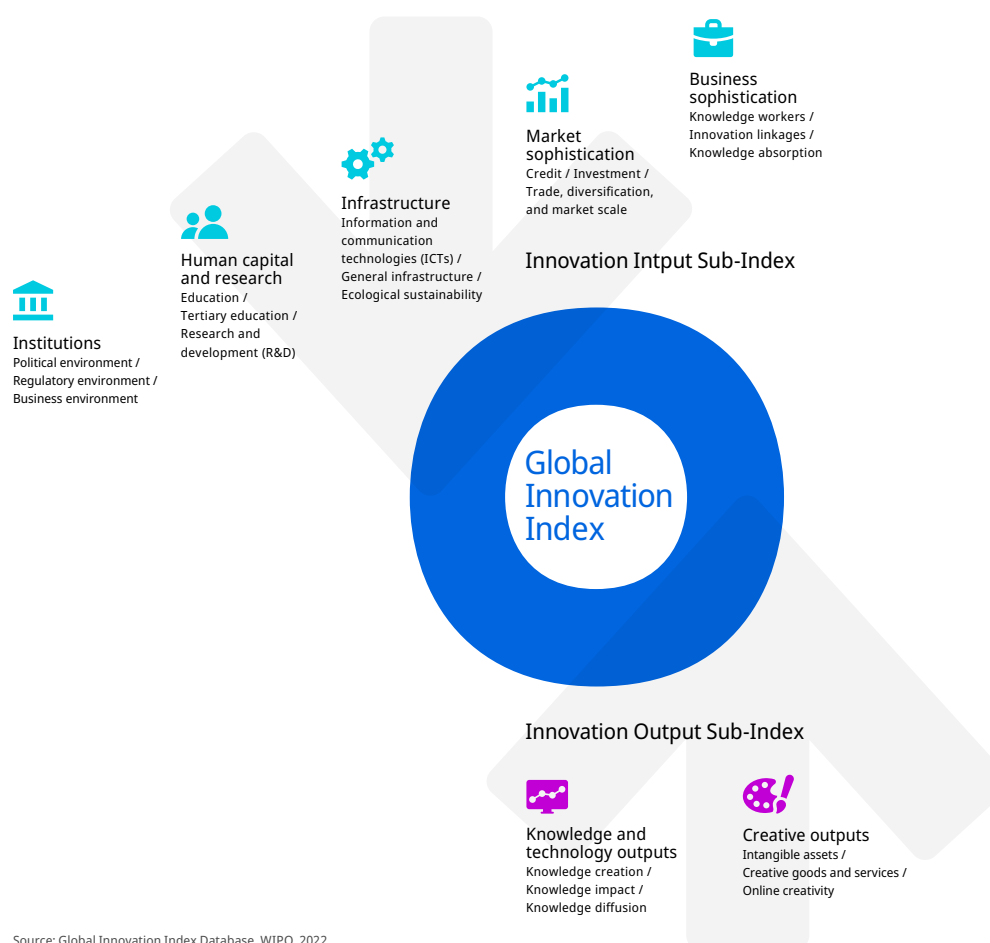
No observations

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.



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.