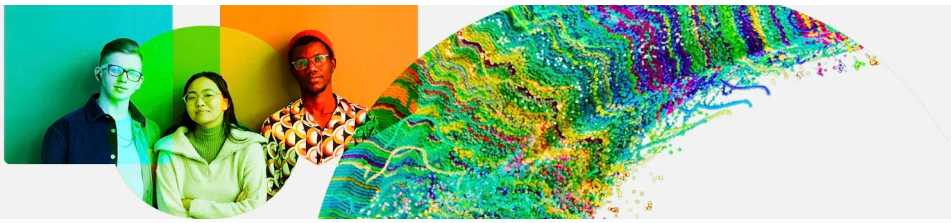
Global Innovation Index 2024



Bosnia and Herzegovina ranking in the Global Innovation Index 2024

Bosnia and Herzegovina ranks 80th among the 133 economies featured in the GII 2024.

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.

Bosnia and Herzegovina ranks 24th among the 34 upper-middle-income group economies.

Bosnia and Herzegovina ranks 37th among the 39 economies in Europe.

Bosnia and Herzegovina GII Ranking (2020-2024)

The table shows the rankings of Bosnia and Herzegovina 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 Bosnia and Herzegovina in the GII 2024 is between ranks 76 and 88.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	74th	72nd	75th
2021	75th	70th	80th
2022	70th	64th	75th
2023	77th	75th	80th
2024	80th	74th	84th

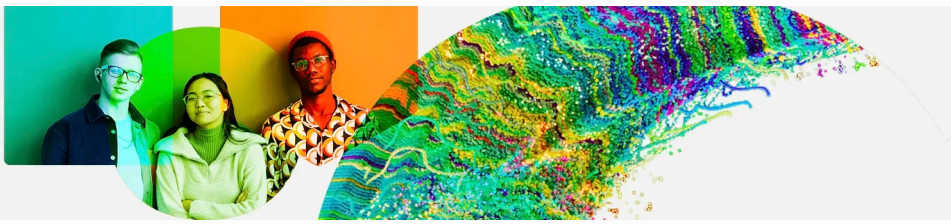
Bosnia and Herzegovina performs worse in innovation outputs than innovation inputs in 2024.

This year **Bosnia and Herzegovina ranks 74th in innovation inputs.** This position is higher than last year.

Bosnia and Herzegovina ranks 84th in innovation outputs. This position is lower than last year.

Bosnia and Herzegovina has no clusters in the top 100 S&T clusters of the Global Innovation Index.

Global Innovation Index 2024



> Global Innovation Tracker

The Global Innovation Tracker 2024 shows what is the current state of innovation in Bosnia and Herzegovina, how rapidly is technology being embraced and what are the resulting societal impacts.

For Bosnia and Herzegovina, 4 indicators have improved in the short-term and 3 indicators have worsened.

Science and innovation investment

Scientific publications	R&D investments	Venture capital		International patent filings
		Deal numbers	Deal values	
▼ -6% 2022 - 2023	▲ 2.4% 2021 - 2022	n/a	n/a	▼ -75% 2022 - 2023
▲ 8.5% 2013 - 2023	▼ -0.6% 2012 - 2022	n/a	n/a	▼ -16.4% 2013 - 2023

Technology adoption

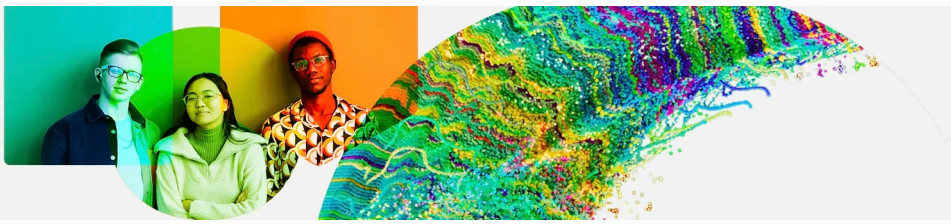
Safe sanitation	Connectivity		Robots	Electric vehicles
	Fixed broadband	5G		
n/a	▲ 11% 2021 - 2022	n/a	▲ 40.4% 2021 - 2022	n/a
▲ 7.5% 2008 - 2018	▲ 7.8% 2012 - 2022		▲ 32.4% 2012 - 2022	n/a
54.6 per 100 inhabitants in 2018	27.1 per 100 inhabitants in 2022	n/a		n/a

Socioeconomic impact

Labor productivity	Life expectancy	Temperature change
▲ 0.4% 2022 - 2023	0% 2021 - 2022	▲ 2.6°C 2023
▲ 1.4% 2013 - 2023	▼ -0.2% 2012 - 2022	n/a
79,462 USD in 2023	75.3 years in 2022	

Notes: Not all indicators of the Global Innovation Tracker are used to calculate the Global Innovation Index. Long-term annual growth refers to the compound annual growth rate (CAGR) over the indicated period. For each variable, a one-year growth rate is set for the short run, and ten-year CAGR is set for the long run; time windows might differ when gaps exist in data availability. The end period corresponds to the most recent available observation, which may differ among countries. Temperature change is an exception: it indicates the change in degrees Celsius with respect to the average temperature in the country from 1951–1980. Figures are rounded.

Global Innovation Index 2024



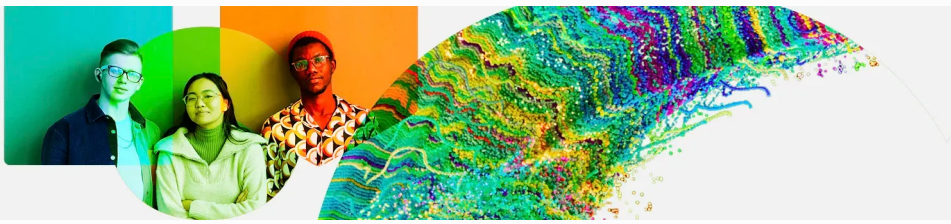
Expected vs. observed innovation performance

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, Bosnia and Herzegovina's performance is at expectations for its level of development.

> Innovation overperformers relative to their economic development

Global Innovation Index 2024



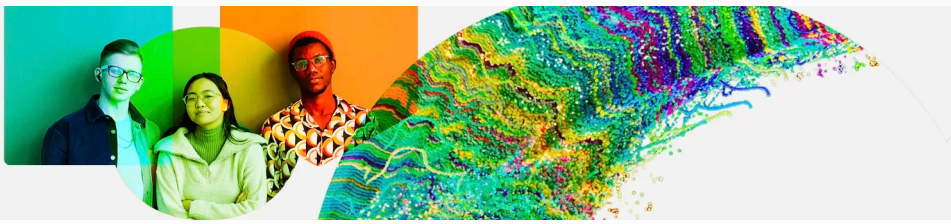
Effectively translating innovation investments into innovation outputs

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.

Bosnia and Herzegovina produces less innovation outputs relative to its level of innovation investments.

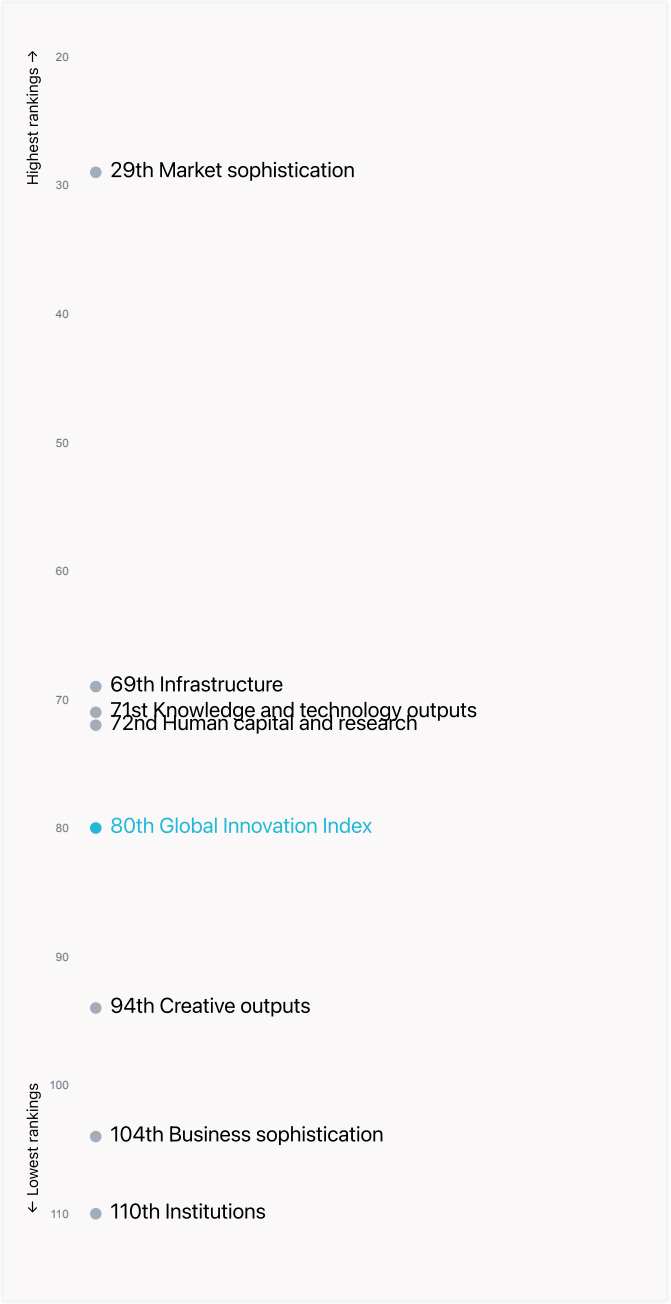
> Relationship between innovation inputs and outputs

Global Innovation Index 2024



Overview of Bosnia and Herzegovina's rankings in the seven areas of the GII in 2024

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



Highest rankings

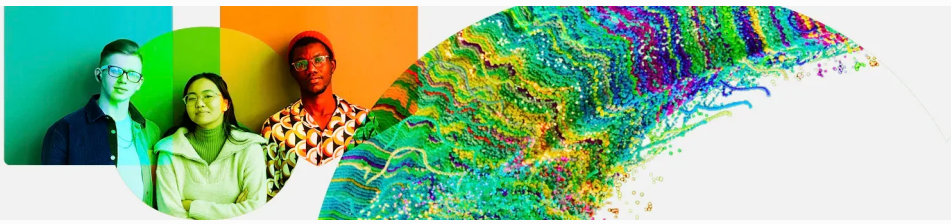
Bosnia and Herzegovina ranks highest in Market sophistication (29th), Infrastructure (69th), Knowledge and technology outputs (71st) and Human capital and research (72nd).

Lowest rankings

Bosnia and Herzegovina ranks lowest in Institutions (110th), Business sophistication (104th) and Creative outputs (94th).

The full WIPO Intellectual Property Statistics profile for Bosnia and Herzegovina can be found on this link.

Global Innovation Index 2024



Benchmark of Bosnia and Herzegovina against other economy groupings for each of the seven areas of the GII Index

The charts shows the relative position of Bosnia and Herzegovina (blue bar) against other economy groupings (grey bars), for each of the seven areas of the GII Index.

Upper-Middle-Income economies

Bosnia and Herzegovina performs above the upper-middle-income group average in Human capital and research, Infrastructure, Market sophistication.

Europe

Bosnia and Herzegovina performs above the regional average in Market sophistication.

Institutions

- Top 10 | Score: 80.81
- Europe | Score: 59.14
- Upper middle income | Score: 43.0
- Bosnia and Herzegovina | Score: 2

Human capital and research

- Top 10 | Score: 61.30
- Europe | Score: 44.92
- Bosnia and Herzegovina | Score: 3
- Upper middle income | Score: 29.5

Infrastructure

- Top 10 | Score: 58.57
- Europe | Score: 51.74
- Bosnia and Herzegovina | Score: 4
- Upper middle income | Score: 39.8

Market sophistication

- Top 10 | Score: 62.12
- Bosnia and Herzegovina | Score: 4
- Europe | Score: 42.79
- Upper middle income | Score: 32.9

Business sophistication

- Top 10 | Score: 63.64
- Europe | Score: 42.68
- Upper middle income | Score: 27.6
- Bosnia and Herzegovina | Score: 1

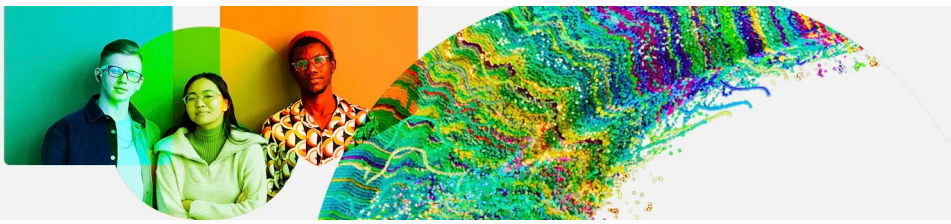
Knowledge and technology outputs

- Top 10 | Score: 57.29
- Europe | Score: 36.30
- Upper middle income | Score: 20.6
- Bosnia and Herzegovina | Score: 2

Creative outputs

- Top 10 | Score: 56.54
- Europe | Score: 39.15
- Upper middle income | Score: 24.3
- Bosnia and Herzegovina | Score: 1

Global Innovation Index 2024



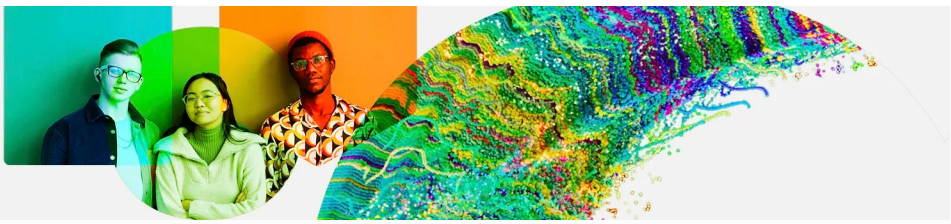
Innovation strengths and weaknesses in Bosnia and Herzegovina

The table below gives an overview of the indicator strengths and weaknesses of Bosnia and Herzegovina in the GII 2024.

Bosnia and Herzegovina's main innovation strengths are **Government funding/pupil, secondary, % GDP/cap** (rank 4), **ISO 9001 quality/bn PPP$ GDP** (rank 9) and **Pupil–teacher ratio, secondary** (rank 13).

Strengths			Weaknesses		
Rank	**Code**	**Indicator name**	**Rank**	**Code**	**Indicator name**
4	2.1.2	Government funding/pupil, secondary, % GDP/cap	128	1.1.2	Government effectiveness*
9	6.3.5	ISO 9001 quality/bn PPP$ GDP	127	5.2.2	University-industry R&D collaboration†
13	2.1.5	Pupil–teacher ratio, secondary	124	1.3.1	Policy stability for doing business†
17	4.3.2	Domestic industry diversification	112	5.3.3	ICT services imports, % total trade
17	4.1.3	Loans from microfinance institutions, % GDP	107	7.3.3	Mobile app creation/bn PPP$ GDP
22	3.3.3	ISO 14001 environment/bn PPP$ GDP	76	7.1.1	Intangible asset intensity, top 15, %
32	6.3.2	Production and export complexity	75	7.1.3	Global brand value, top 5,000, % GDP
37	3.2.3	Gross capital formation, % GDP	75	2.3.4	QS university ranking, top 3*
40	6.3.4	ICT services exports, % total trade	49	6.2.2	Unicorn valuation, % GDP
42	6.2.1	Labor productivity growth, %	41	2.3.3	Global corporate R&D investors, top 3, mn USD

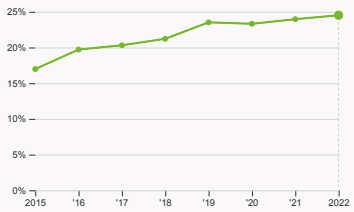
Global Innovation Index 2024



Bosnia and Herzegovina's innovation system

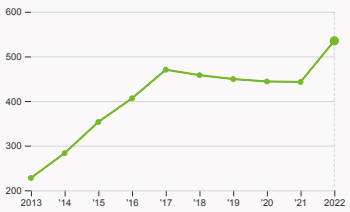
As far as practicable, the plots below present unscaled indicator data.

Innovation inputs in Bosnia and Herzegovina



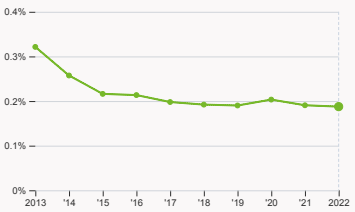
2.2.2 **Graduates in science and engineering**

was equal to 24.52 % of total graduates in 2022, up by 0.56 percentage points from the year prior – and equivalent to an indicator rank of 49.



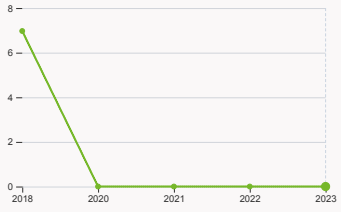
2.3.1 **Researchers**

was equal to 535.005 FTE per million population in 2022, up by 20.81% from the year prior – and equivalent to an indicator rank of 70.



2.3.2 **Gross expenditure on R&D**

was equal to 0.19 % GDP in 2022, down by 0.003 percentage points from the year prior – and equivalent to an indicator rank of 88.

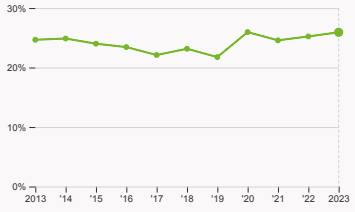


2.3.4 **QS university ranking**

was equal to an average score of 0 for the top three universities in 2023 with no change from the year prior – and equivalent to an indicator rank of 75.

4.3.2 **Domestic industry diversification**

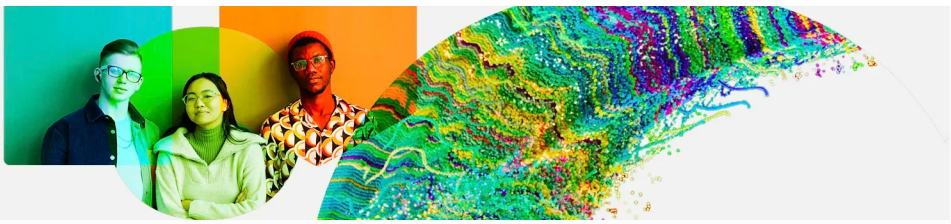
was equal to an index score of 0.09 in 2021, down by 1.49% from the year prior – and equivalent to an indicator rank of 17.



5.1.1 **Knowledge-intensive employment**

was equal to 25.92 % in 2023, up by 0.69 percentage points from the year prior – and equivalent to an indicator rank of 56.

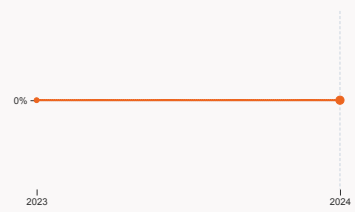
Global Innovation Index 2024



Innovation outputs in Bosnia and Herzegovina

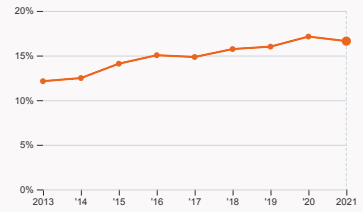
6.1.1 Patents by origin

was equal to 36 patents in 2022, down by 32.08% from the year prior – and equivalent to an indicator rank of 71.



6.2.2 Unicorn valuation

was equal to 0 % GDP in 2024 with no change from the year prior – and equivalent to an indicator rank of 49.



6.2.4 High-tech manufacturing

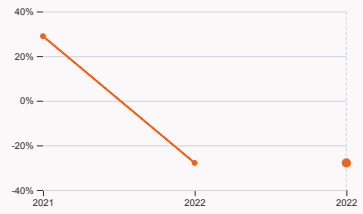
was equal to 16.62 % of total manufacturing output in 2021, down by 0.51 percentage points from the year prior – and equivalent to an indicator rank of 70.

6.3.2 Production and export complexity

was equal to a score of 0.77 in 2021, up by 14.93% from the year prior – and equivalent to an indicator rank of 32.

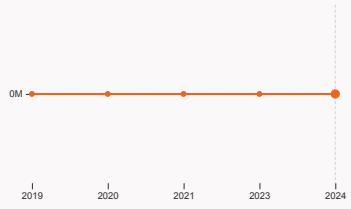
6.3.3 High-tech exports

was equal to 384.68 million USD in 2022, up by 7.47% from the year prior – and equivalent to an indicator rank of 50.



7.1.1 Intangible asset intensity

was equal to -27.86 % for the top 15 companies in 2022 with no change from the year prior – and equivalent to an indicator rank of 76.



7.1.3 Global brand value

was equal to 0 million USD for the brands in the top 5,000 in 2024 with no change from the year prior – and equivalent to an indicator rank of 75.

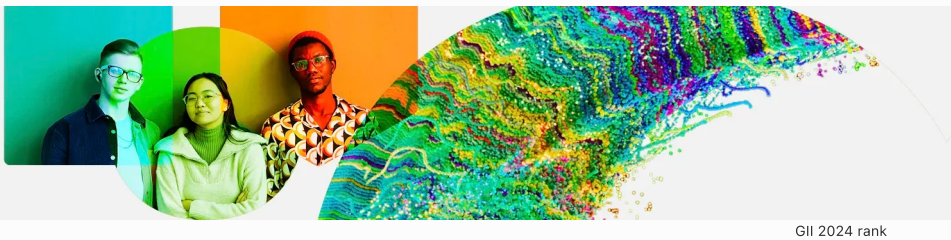
7.2.2 National feature films

was equal to 9 films in 2022 with no change from the year prior – and equivalent to an indicator rank of 34.

7.3.3 Mobile app creation

was equal to 428.68 thousand global downloads of mobile apps in 2023, up by 31.41% from the year prior – and equivalent to an indicator rank of 107.

Global Innovation Index 2024



Bosnia and Herzegovina

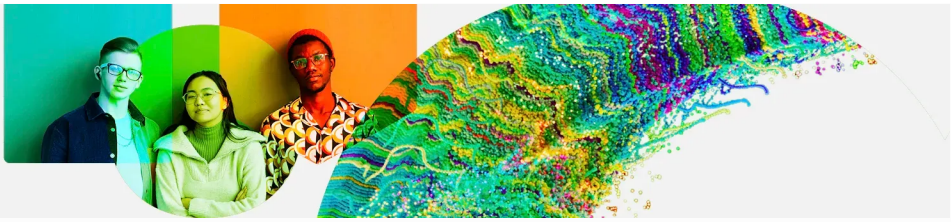
GII 2024 rank **80**

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
84	74	Upper middle	EUR	3.2	68	19,633.6

	Score / Value	Rank	
Institutions	**30**	**110**	
1.1 Institutional environment	**33.4**	**109**	◇
1.1.1 Operational stability for businesses*	50.7	92	
1.1.2 Government effectiveness*	16.2	128	○ ◇
1.2 Regulatory environment	**36.4**	**80**	
1.2.1 Regulatory quality*	37.7	81	
1.2.2 Rule of law*	35	83	
1.3 Business environment	**20.1**	**118**	○
1.3.1 Policy stability for doing business†	13	124	○ ◇
1.3.2 Entrepreneurship policies and culture†	27.2	58	
Human capital and research	**30.4**	**72**	
2.1 Education	**57.2**	**51**	
2.1.1 Expenditure on education, % GDP	n/a	n/a	
2.1.2 Government funding/pupil, secondary, % GDP/cap	33	4	● ◆
2.1.3 School life expectancy, years	13.3	77	
2.1.4 PISA scales in reading, maths and science	402.6	61	
2.1.5 Pupil–teacher ratio, secondary	8.2	13	● ◆
2.2 Tertiary education	**32**	**71**	
2.2.1 Tertiary enrolment, % gross	44.6	74	
2.2.2 Graduates in science and engineering, %	24.5	49	
2.2.3 Tertiary inbound mobility, %	7.2	40	◆
2.3 Research and development (R&D)	**2.1**	**90**	
2.3.1 Researchers, FTE/mn pop.	535	70	
2.3.2 Gross expenditure on R&D, % GDP	0.2	88	
2.3.3 Global corporate R&D investors, top 3, mn USD	0	41	○ ◇
2.3.4 QS university ranking, top 3*	0	75	○ ◇
Infrastructure	**40.6**	**69**	
3.1 Information and communication technologies (ICTs)	**63.8**	**83**	
3.1.1 ICT access*	89.4	68	
3.1.2 ICT use*	69.9	85	
3.1.3 Government's online service*	43.6	103	◇
3.1.4 E-participation*	52.3	71	
3.2 General infrastructure	**33.1**	**58**	
3.2.1 Electricity output, GWh/mn pop.	5,040.2	42	
3.2.2 Logistics performance*	40.9	60	
3.2.3 Gross capital formation, % GDP	26.7	37	● ◆
3.3 Ecological sustainability	**24.7**	**50**	
3.3.1 GDP/unit of energy use	7.1	99	◇
3.3.2 Low-carbon energy use, %	17.6	65	
3.3.3 ISO 14001 environment/bn PPP$ GDP	5	22	● ◆
Market sophistication	**46.5**	**29**	● ◆
4.1 Credit	**31.5**	**54**	
4.1.1 Finance for startups and scaleups†	52.7	36	
4.1.2 Domestic credit to private sector, % GDP	48.2	71	
4.1.3 Loans from microfinance institutions, % GDP	2.4	17	● ◆
4.2 Investment	**n/a**	**[n/a]**	
4.2.1 Market capitalization, % GDP	n/a	n/a	
4.2.2 Venture capital (VC) investors, deals/bn PPP$ GDP	n/a	n/a	
4.2.3 VC recipients, deals/bn PPP$ GDP	n/a	n/a	
4.2.4 VC received, value, % GDP	n/a	n/a	
4.3 Trade, diversification and market scale	**61.6**	**43**	
4.3.1 Applied tariff rate, weighted avg., %	1.5	54	
4.3.2 Domestic industry diversification	94.9	17	● ◆
4.3.3 Domestic market scale, bn PPP$	68	101	

	Score / Value	Rank	
Business sophistication	**19.7**	**104**	◇
5.1 Knowledge workers	**29.7**	**73**	
5.1.1 Knowledge-intensive employment, %	25.9	56	
5.1.2 Firms offering formal training, %	24.6	67	
5.1.3 GERD performed by business, % GDP	0.07	63	
5.1.4 GERD financed by business, %	38.7	46	
5.1.5 Females employed w/advanced degrees, %	9.7	77	
5.2 Innovation linkages	**13.7**	**111**	
5.2.1 Public Research-Industry co-publications, %	1.6	58	
5.2.2 University-industry R&D collaboration†	10.3	127	○ ◇
5.2.3 State of cluster development†	32.4	100	
5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP	0.02	60	
5.2.5 Patent families/bn PPP$ GDP	0.06	66	
5.3 Knowledge absorption	**15.8**	**121**	○ ◇
5.3.1 Intellectual property payments, % total trade	0.1	100	◇
5.3.2 High-tech imports, % total trade	6.1	96	
5.3.3 ICT services imports, % total trade	0.4	112	○ ◇
5.3.4 FDI net inflows, % GDP	2.5	66	
5.3.5 Research talent, % in businesses	11.5	60	
Knowledge and technology outputs	**20.3**	**71**	
6.1 Knowledge creation	**9.5**	**85**	
6.1.1 Patents by origin/bn PPP$ GDP	0.6	71	
6.1.2 PCT patents by origin/bn PPP$ GDP	0.01	89	
6.1.3 Utility models by origin/bn PPP$ GDP	-	-	
6.1.4 Scientific and technical articles/bn PPP$ GDP	10.9	68	
6.1.5 Citable documents H-index	5.1	96	
6.2 Knowledge impact	**20.1**	**100**	
6.2.1 Labor productivity growth, %	1.4	42	● ◆
6.2.2 Unicorn valuation, % GDP	0	49	○ ◇
6.2.3 Software spending, % GDP	0.06	101	
6.2.4 High-tech manufacturing, %	16.6	70	
6.3 Knowledge diffusion	**31.3**	**39**	● ◆
6.3.1 Intellectual property receipts, % total trade	0.07	65	
6.3.2 Production and export complexity	62.3	32	● ◆
6.3.3 High-tech exports, % total trade	2.9	50	
6.3.4 ICT services exports, % total trade	3.1	40	● ◆
6.3.5 ISO 9001 quality/bn PPP$ GDP	19.6	9	● ◆
Creative outputs	**14.7**	**94**	
7.1 Intangible assets	**13.5**	**94**	
7.1.1 Intangible asset intensity, top 15, %	-27.9	76	○ ◇
7.1.2 Trademarks by origin/bn PPP$ GDP	13	104	◇
7.1.3 Global brand value, top 5,000, % GDP	0	75	○ ◇
7.1.4 Industrial designs by origin/bn PPP$ GDP	1	60	
7.2 Creative goods and services	**11.7**	**68**	
7.2.1 Cultural and creative services exports, % total trade	0.2	73	
7.2.2 National feature films/mn pop. 15–69	3.9	34	
7.2.3 Entertainment and media market/th pop. 15–69	n/a	n/a	
7.2.4 Creative goods exports, % total trade	0.3	71	
7.3 Online creativity	**19.9**	**98**	
7.3.1 Top-level domains (TLDs)/th pop. 15–69	2.9	70	
7.3.2 GitHub commits/mn pop. 15–69	9.7	57	
7.3.3 Mobile app creation/bn PPP$ GDP	47.2	107	○ ◇

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * an index; † a survey question, 🕒 that the economy's data is outdated. Square brackets [ ] indicate the the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level; n/a represents missing values; a dash - indicates an indicator which is not relevant to this economy and thus not considered for DMC thresholds.



Data availability

The following tables list indicators that are either missing or outdated for Bosnia and Herzegovina.

Bosnia and Herzegovina has missing data for seven indicators and outdated data for eight indicators.

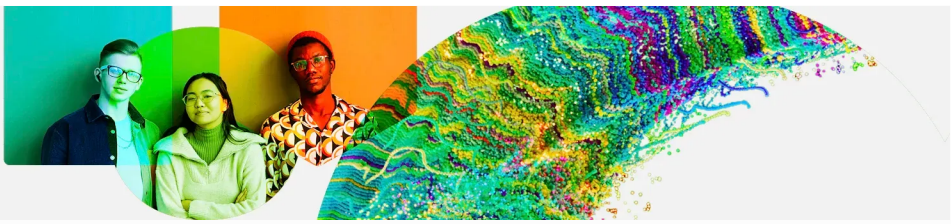
Missing data for Bosnia and Herzegovina

Code	Indicator name	Economy Year	Model Year	Source
2.1.1	Expenditure on education, % GDP	n/a	2022	UNESCO Institute for Statistics
4.2.1	Market capitalization, % GDP	n/a	2022	World Federation of Exchanges; World Bank
4.2.2	Venture capital (VC) investors, deals/bn PPP$ GDP	n/a	2023	LSEG Data & Analytics; International Monetary Fund
4.2.3	VC recipients, deals/bn PPP$ GDP	n/a	2023	LSEG Data & Analytics; International Monetary Fund
4.2.4	VC received, value, % GDP	n/a	2023	LSEG Data & Analytics; International Monetary Fund
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2022	World Intellectual Property Organization; International Monetary Fund
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2023	PwC, GEMO; United Nations, World Population Prospects; International Monetary Fund

Outdated data for Bosnia and Herzegovina

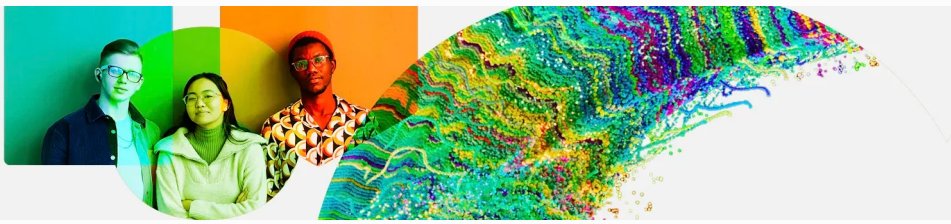
Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture†	2017	2023	Global Entrepreneurship Monitor
2.1.2	Government funding/pupil, secondary, % GDP/cap	2018	2020	UNESCO Institute for Statistics
2.1.4	PISA scales in reading, maths and science	2018	2022	OECD, PISA
4.1.1	Finance for startups and scaleups†	2017	2023	Global Entrepreneurship Monitor
5.1.3	GERD performed by business, % GDP	2021	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	2021	2023	LSEG Data & Analytics; International Monetary Fund
5.3.5	Research talent, % in businesses	2021	2022	UNESCO Institute for Statistics; Eurostat; OECD; RICYT

Global Innovation Index 2024



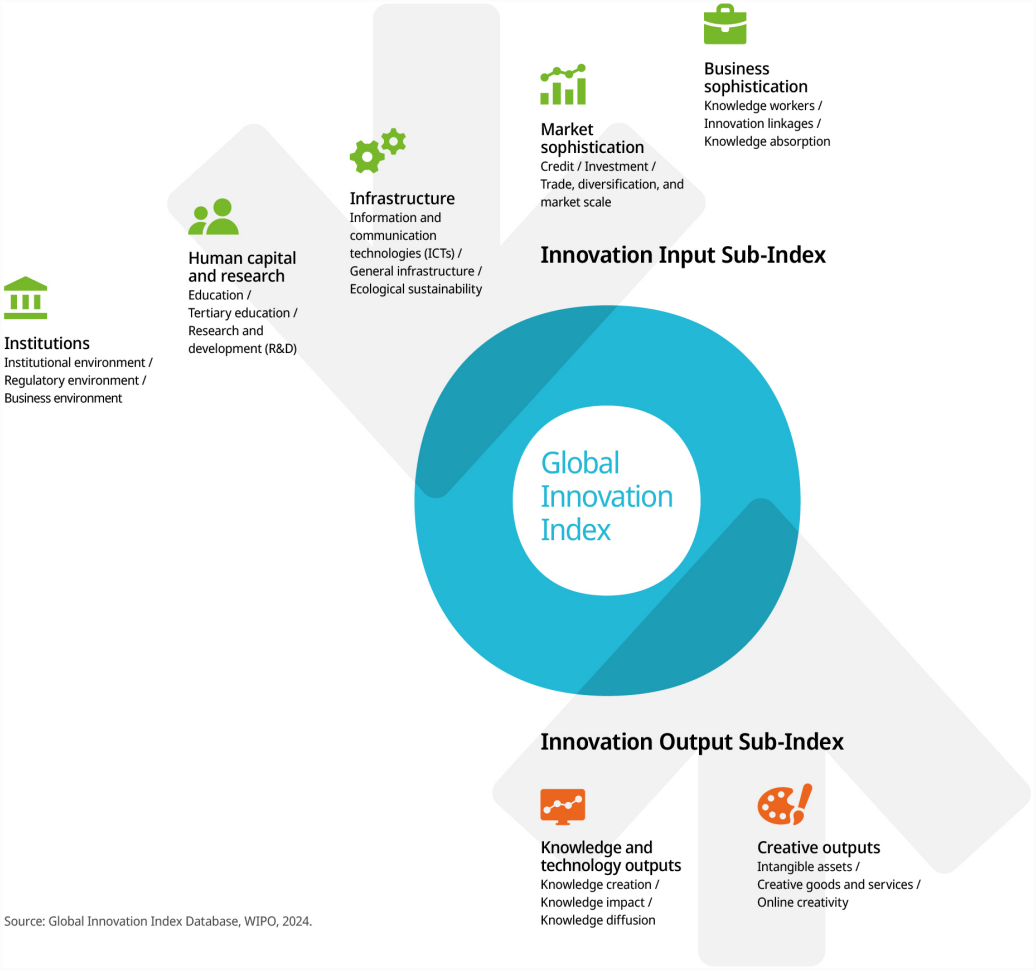
Code	Indicator name	Economy Year	Model Year	Source
7.1.1	Intangible asset intensity, top 15, %	2022	2023	Brand Finance

Global Innovation Index 2024



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, 2024.

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.