

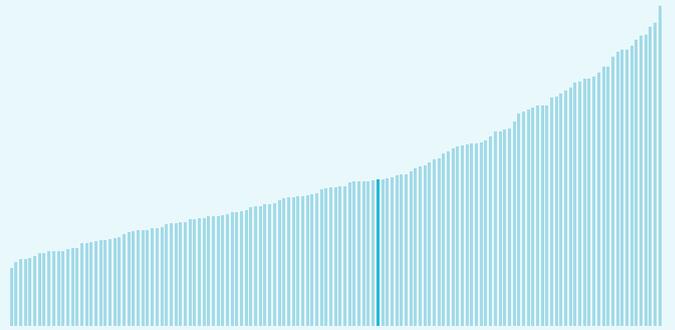
Global Innovation Index 2025



South Africa ranking in the Global Innovation Index 2025

South Africa ranks **61st** among the 139 economies featured in the GII 2025.

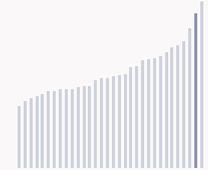
The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.



South Africa ranks 12th among the 36 Upper middle-income group economies.



South Africa ranks 2nd among the 32 economies in Sub-Saharan Africa.



> South Africa GII Ranking (2020-2025)

The table shows the rankings of South Africa over the past six 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 South Africa in the GII 2025 is between ranks 58 and 66.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	60th	49th	68th
2021	61st	55th	68th
2022	61st	69th	61st
2023	59th	71st	57th
2024	69th	75th	61st
2025	61st	68th	60th

South Africa performs better in innovation outputs than innovation inputs in 2025.

This year South Africa ranks 68th in innovation inputs. This position is higher than last year.

South Africa ranks 60th in innovation outputs. This position is higher than last year.

South Africa has no clusters in the world's top innovation clusters of the Global Innovation Index.

Global Innovation Index 2025



> Global Innovation Tracker

The Global Innovation Tracker 2025 shows what is the current state of innovation in South Africa, how rapidly is technology being embraced and what are the resulting societal impacts.



For South Africa, 7 indicators have improved in the short-term and 4 indicators have worsened.

Science and innovation investment

	Scientific publications	R&D investments	Venture capital deal numbers	International patent filings
Short term	▲ 2.6 % 2023 - 2024	▲ 2.1 % 2021 - 2022	▼ -33 % 2023 - 2024	▼ -7.4 % 2023 - 2024
Long term (annual growth)	▲ 4 % 2014 - 2024	▲ 0.1 % 2012 - 2022	▼ -8.6 % 2020 - 2024	▼ -5.7 % 2014 - 2024

Technology adoption

	Safe sanitation	Connectivity		Robots	Electric vehicles
		Fixed broadband	5G		
Short term	▲ 0.8% 2023 - 2024	▲ 10.5% 2022 - 2023	▲ 76.3% 2022 - 2023	▲ 2.1% 2022 - 2023	n/a
Long term (annual growth)	▲ 2.9% 2014 - 2024	▲ 2.9% 2013 - 2023	n/a	▲ 6.9% 2013 - 2023	n/a
Penetration	73.8 per 100 inhabitants in 2024	3.4 per 100 inhabitants in 2023	41.8 per 100 inhabitants in 2023	n/a	n/a

Socioeconomic impact

	Labor productivity	Life expectancy	Temperature change
Short term	▼ -1.5 % 2023 - 2024	▲ 1 % 2022 - 2023	+ 1.5 °C 2024
Long term (annual growth)	▼ -0.3 % 2014 - 2024	▲ 0.6 % 2013 - 2023	+ 0.9 °C 2014
Level	61,296.1 USD in 2024	66.1 years in 2023	n/a

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 countries. from 1951–1980. Figures are rounded.

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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 South Africa performs above expectations for its level of development.

> Innovation overperformers relative to their economic development



Global Innovation Index 2025



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.



South Africa produces more innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

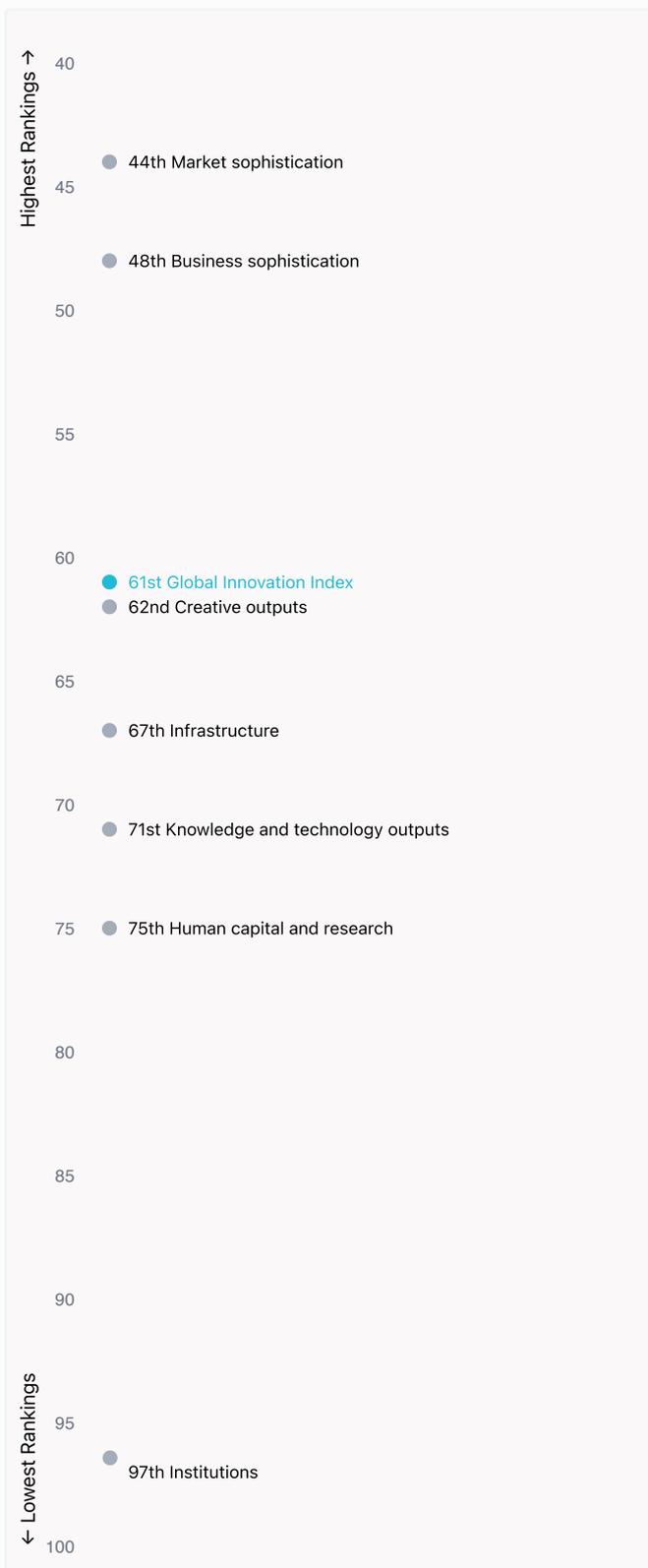


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Overview of South Africa's rankings in the seven areas of the GII in 2025

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



Highest Rankings

South Africa ranks highest in Market sophistication (44th) and Business sophistication (48th).



Lowest Rankings

South Africa ranks lowest in Institutions (97th), Human capital and research (75th) and Knowledge and technology outputs (71st).



The full WIPO Intellectual Property Statistics profile for South Africa can be found on <https://www.wipo.int/edocs/statistics-country-profile/en/za.pdf>

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Benchmark of South Africa against other economy groupings for each of the seven areas of the GII Index



Upper middle-income economies

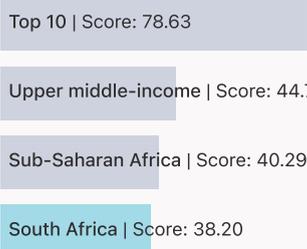
South Africa performs above the Upper middle-income group average in Infrastructure, Market sophistication, Business sophistication, Knowledge and technology outputs, Creative outputs.



Sub-Saharan Africa

South Africa performs above the regional average in Human capital and research, Infrastructure, Market sophistication, Business sophistication, Knowledge and technology outputs, Creative outputs.

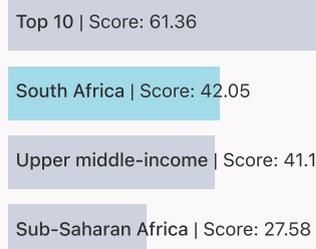
Institutions



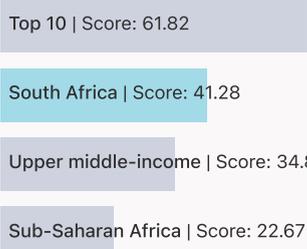
Human capital and research



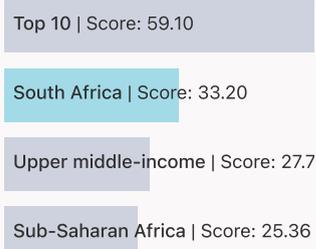
Infrastructure



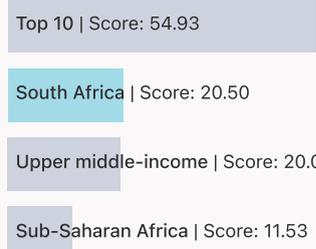
Market sophistication



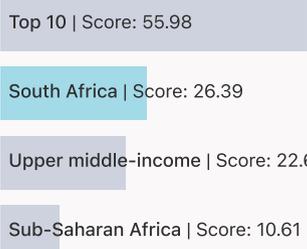
Business sophistication



Knowledge and technology outputs



Creative outputs



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Innovation strengths and weaknesses in South Africa

The table below gives an overview of the indicator strengths and weaknesses of South Africa in the GII 2025.



South Africa's best-ranked innovation strengths are **Market capitalization, % GDP** (rank 4), **Expenditure on education, % GDP** (rank 8) and **ICT services imports, % total trade** (rank 18).

Strengths

Rank	Code	Indicator name
4	4.2.1	Market capitalization, % GDP
8	2.1.1	Expenditure on education, % GDP
18	5.3.3	ICT services imports, % total trade
18	3.2.2	Logistics performance*
23	7.1.3	Global brand value, top 5,000, % GDP
24	3.1.3	Government's online service*
24	5.2.3	University industry & international engagement, top 5*
27	4.1.2	Domestic credit to private sector, % GDP
29	5.3.1	Intellectual property payments, % total trade
31	6.1.5	Citable documents H-index

Weaknesses

Rank	Code	Indicator name
125	3.2.3	Gross capital formation, % GDP
123	2.1.5	Pupil-teacher ratio, secondary
110	3.3.2	Low-carbon energy use, %
106	3.3.1	GDP/unit of energy use
103	1.1.1	Operational stability for businesses*
99	2.2.1	Tertiary enrolment, % gross
96	2.2.2	Graduates in science and engineering, %
88	7.2.2	National feature films/mn pop. 15-69
83	1.3.2	Entrepreneurship policies and culture [†]
61	5.3.5	Research talent, % in businesses

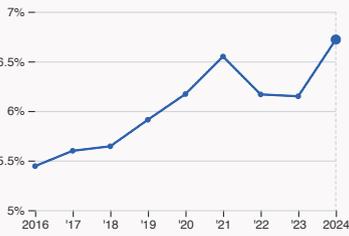
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South Africa's innovation system

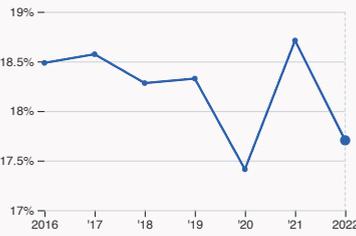
As far as practicable, the plots below present unscaled indicator data.

› Innovation inputs in South Africa



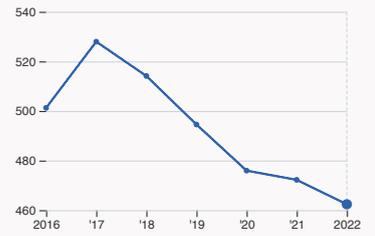
2.1.1 Expenditure on education

was equal to 6.72 % GDP in 2024, up by 0.57 percentage points from the year prior – and equivalent to an indicator rank of 8.



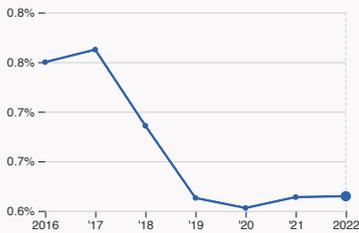
2.2.2 Graduates in science and engineering

was equal to 17.7 % of total graduates in 2022, down by 1.006 percentage points from the year prior – and equivalent to an indicator rank of 96.



2.3.1 Researchers

was equal to 462.39 FTE per million population in 2022, down by 2.08% from the year prior – and equivalent to an indicator rank of 77.



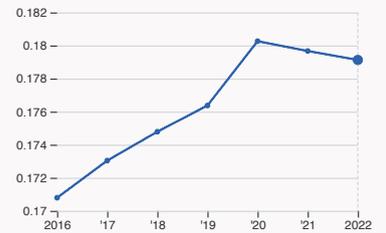
2.3.2 Gross expenditure on R&D

was equal to 0.61 % GDP in 2022, up by 0.001 percentage points from the year prior – and equivalent to an indicator rank of 58.



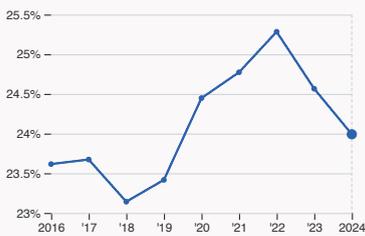
2.3.4 QS university ranking

was equal to an average score of 41.8 for the top three universities in 2024, up by 1.88% from the year prior – and equivalent to an indicator rank of 32.



4.3.2 Domestic industry diversification

was equal to an index score of 0.179 in 2022, down by 0.3% from the year prior – and equivalent to an indicator rank of 72.



5.1.1 Knowledge-intensive employment

was equal to 23.99 % of total workforce in 2024, down by 0.57 percentage points from the year prior – and equivalent to an indicator rank of 61.

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> Innovation outputs in South Africa



6.1.1 Patents by origin

was equal to 413 patents in 2023, down by 9.43% from the year prior – and equivalent to an indicator rank of 75.



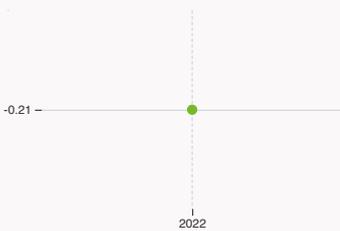
6.2.2 Unicorn valuation

was equal to 0.74 % GDP in 2025, up by 0.34 percentage points from the year prior – and equivalent to an indicator rank of 39.



6.2.4 High-tech manufacturing

was equal to 32.07 high-tech manufacturing output in billion USD in 2022, up by 8.05% from the year prior – and equivalent to an indicator rank of 69.



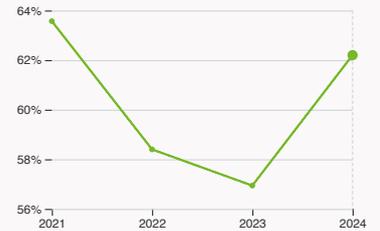
6.3.2 Production and export complexity

was equal to a score of -0.21 in 2022 – and equivalent to an indicator rank of 74.



6.3.3 High-tech exports

was equal to 2.37 billion USD in 2023, down by 10.23% from the year prior – and equivalent to an indicator rank of 64.



7.1.1 Intangible asset intensity, top 15

was equal to 62.2 % for the top 15 companies in 2024, up by 5.26 percentage points from the year prior – and equivalent to an indicator rank of 30.



7.1.3 Global brand value, top 5,000

was equal to 35.29 billion USD in 2025, up by 6.1% from the year prior – and equivalent to an indicator rank of 23.



7.2.2 National feature films

was equal to 15 films in 2023, down by 25% from the year prior – and equivalent to an indicator rank of 88.



7.3.3 Mobile app creation

was equal to 98.02 million global downloads of mobile apps in 2024, up by 5.42% from the year prior – and equivalent to an indicator rank of 75.

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South Africa's innovation top performers

Disclaimer: This section contains only the top performers per country. For the complete list, please visit the GII Innovation Ecosystems and Data Explorer website.

2.3.3 Global corporate R&D investors from South Africa

Rank	Firm	Industry	R&D [mn EUR]	R&D Growth [%]	R&D Intensity [%]
1	SASOL	Chemicals	67	-1	n/a

Source: WIPO, based on European Commission's Joint Research Centre (<https://iri.jrc.ec.europa.eu/scoreboard/2024-eu-industrial-rd-investment-scoreboard>) and Orbis database (<https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html>).

Note: Data is based on the 2024 EU Industrial R&D Investment Scoreboard from the European Commission's Joint Research Centre, which ranks the top 2,000 firms by R&D investment annually. For countries not represented in the Scoreboard, companies from Orbis with R&D expenditure above USD 50 million were identified and used to complement the dataset.

2.3.4 QS university ranking of South Africa's top universities

Rank	University	Score
171	UNIVERSITY OF CAPE TOWN	50.00
267	UNIVERSITY OF WITWATERSRAND	38.70
296	STELLENBOSCH UNIVERSITY	36.70

Source: QS Quacquarelli Symonds Ltd (<https://www.topuniversities.com/university-rankings/world-university-rankings/2024>).

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'.

5.2.3 University industry and international engagement, top 5 universities

Rank	University	Score
1	UNIVERSITY OF THE WITWATERSRAND	82.35
2	UNIVERSITY OF CAPE TOWN	81.50
3	UNIVERSITY OF JOHANNESBURG	79.80

Source: Times Higher Education (THE), World University Rankings 2025.

Note: Rank corresponds to within economy ranks. The score is calculated as the average of the International Outlook score (encompassing international staff, students, and co-authorship) and the industry score (reflecting industry income and patent citations). The 2025 ranking corresponds to data from the academic year that ended in 2022.

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6.2.2 Top Unicorn Companies in South Africa

Rank	Unicorn Company	Industry	City	Valuation, bn USD
1	PROMASIDOR HOLDINGS	Consumer & Retail	Bryanston	2
2	TYME	Financial Services	Johannesburg	2

Source: CBInsights, Tracker – The Complete List of Unicorn Companies: <https://www.cbinsights.com/research-unicorn-companies>.

7.1.1 Top 15 intangible-asset intensive companies in South Africa

Rank	Firm	Intensity, %
1	NASPERS LIMITED	31.11
2	CAPITEC BANK HOLDINGS LIMITED	84.94
3	FIRSTRAND LIMITED	52.53

Source: Brand Finance (<https://brandirectory.com/reports/gift-2024>).

Note: Brand Finance only provides within economy ranks.

7.1.3 Top 5,000 companies in South Africa with highest global brand value

Rank	Brand	Industry	Brand Value, mn USD
1	MTN	Telecoms	2,930.1
2	VODACOM	Telecoms	2,535.1
3	STANDARD BANK	Banking	2,184.3

Source: Brand Finance (<https://brandirectory.com>).

Note: Rank corresponds to within economy ranks.

South Africa

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Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
60	68	Upper middle	Sub-Saharan Africa	64.0	993.7	15,723.3
			Score / Value Rank			
Institutions			38.2 97	Business sophistication 33.2 48		
1.1 Institutional environment			41.7 95	5.1 Knowledge workers 31.9 91		
1.1.1 Operational stability for businesses*			46.7 103 ○	5.1.1 Knowledge-intensive employment, % 24 61		
1.1.2 Government effectiveness*			36.8 89	5.1.2 Females employed w/advanced degrees, % 11.2 68		
1.2 Regulatory environment			48 72	5.1.3 Youth demographic dividend, % 42 54		
1.2.1 Regulatory quality*			41.6 86	5.1.4 GERD performed by business, % GDP ● 0.2 54		
1.2.2 Rule of law*			54.3 62	5.1.5 GERD financed by business, % 28.7 62		
1.3 Business environment			24.9 111	5.2 Innovation linkages 36.1 40 ◆		
1.3.1 Policy stability for doing business†			33.6 98	5.2.1 Public research–industry co-publications, % 1.3 71		
1.3.2 Entrepreneurship policies and culture†			16.3 83 ○	5.2.2 University–industry R&D collaboration† 44.1 46		
Human capital and research			29.4 75	5.2.3 University industry & international engagement, top 5* 70.3 24 ●◆		
2.1 Education			49.1 76	5.2.4 State of cluster development† 50.7 59		
2.1.1 Expenditure on education, % GDP			6.7 8 ●◆	5.2.5 Patent families/bn PPP\$ GDP 0.1 47		
2.1.2 Government funding/pupil, secondary, % GDP/cap			21.7 38	5.3 Knowledge absorption 31.5 49		
2.1.3 School life expectancy, years			● 13.9 70	5.3.1 Intellectual property payments, % total trade 1.2 29 ●		
2.1.4 PISA scales in reading, maths and science			n/a n/a	5.3.2 High-tech imports, % total trade 9.8 45		
2.1.5 Pupil–teacher ratio, secondary			● 29.6 123 ○◇	5.3.3 ICT services imports, % total trade 3.2 18 ●◆		
2.2 Tertiary education			14.9 110 ◇	5.3.4 FDI net inflows, % GDP 4.3 35		
2.2.1 Tertiary enrolment, % gross			● 23.7 99 ○◇	5.3.5 Research talent, % in businesses ● 11.3 61 ○		
2.2.2 Graduates in science and engineering, %			17.7 96 ○	Knowledge and technology outputs 20.5 71		
2.2.3 Tertiary inbound mobility, %			● 2.5 75	6.1 Knowledge creation 19.7 55		
2.3 Research and development (R&D)			24.3 43	6.1.1 Patents by origin/bn PPP\$ GDP 0.4 75		
2.3.1 Researchers, FTE/mn pop.			● 462.4 77	6.1.2 PCT patents by inventor origin/bn PPP\$ GDP 0.2 46		
2.3.2 Gross expenditure on R&D, % GDP			● 0.6 58	6.1.3 Utility models by origin/bn PPP\$ GDP - -		
2.3.3 Global corporate R&D investors, top 3, mn USD			40.3 42 ◆	6.1.4 Scientific and technical articles/bn PPP\$ GDP 14.6 48		
2.3.4 QS university ranking, top 3*			42.8 32 ◆	6.1.5 Citable documents H-index 32.5 31 ●◆		
Infrastructure			42 67	6.2 Knowledge impact 25.3 67		
3.1 Information and communication technologies (ICTs)			83.4 50	6.2.1 Labor productivity growth, % -0.04 100		
3.1.1 ICT access*			84.4 70	6.2.2 Unicorn valuation, % GDP 0.7 39		
3.1.2 ICT use*			79.2 61	6.2.3 Software spending, % GDP 0.3 35		
3.1.3 Government's online service*			86.4 24 ●◆	6.2.4 High-tech manufacturing, % 17.5 69		
3.2 General infrastructure			33.1 70	6.3 Knowledge diffusion 16.5 77		
3.2.1 Electricity output, GWh/mn pop.			3,643.6 60	6.3.1 Intellectual property receipts, % total trade 0.1 52		
3.2.2 Logistics performance*			72.7 18 ●◆	6.3.2 Production and export complexity 44.1 74		
3.2.3 Gross capital formation, % GDP			15.5 125 ○◇	6.3.3 High-tech exports, % total trade 1.9 64		
3.3 Ecological sustainability			9.7 114	6.3.4 ICT services exports, % total trade 1.1 84		
3.3.1 GDP/unit of energy use			6.4 106 ○◇	6.3.5 ISO 9001 quality/bn PPP\$ GDP 5.3 49		
3.3.2 Low-carbon energy use, %			5.5 110 ○	Creative outputs 26.4 62		
3.3.3 ISO 14001 environment/bn PPP\$ GDP			1.4 62	7.1 Intangible assets 37.3 45		
Market sophistication			41.3 44	7.1.1 Intangible asset intensity, top 15, % 62.2 30		
4.1 Credit			29.3 67	7.1.2 Trademarks by origin/bn PPP\$ GDP 23.4 81		
4.1.1 Finance for startups and scaleups†			40.6 61	7.1.3 Global brand value, top 5,000, % GDP 8.4 23 ●◆		
4.1.2 Domestic credit to private sector, % GDP			91 27 ●◆	7.1.4 Industrial designs by origin/bn PPP\$ GDP ● 0.7 71		
4.1.3 Loans from microfinance institutions, % GDP			1.2 27	7.2 Creative goods and services 6.6 87		
4.2 Investment			25.7 22 ◆	7.2.1 Cultural and creative services exports, % total trade 0.3 74		
4.2.1 Market capitalization, % GDP			290.2 4 ●◆	7.2.2 National feature films/mn pop. 15–69 0.3 88 ○		
4.2.2 Venture capital (VC) received, deal count/bn PPP\$ GDP			0.1 50 ◆	7.2.3 Entertainment and media market/th pop. 15–69 7.4 41		
4.2.3 Late-stage VC deal count, % global VC			0.09 32	7.2.4 Creative goods exports, % total trade 0.8 53		
4.2.4 VC investors, deal count/bn PPP\$ GDP			0.2 47	7.3 Online creativity 24.4 71		
4.2.5 VC investor co-participation/bn PPP\$ GDP			0.1 44	7.3.1 Top-level domains (TLDs)/th pop. 15–69 6.7 54		
4.3 Trade, diversification and market scale			68.8 68	7.3.2 GitHub commits/mn pop. 15–69 4.2 89		
4.3.1 Applied tariff rate, weighted avg., %			4.6 93	7.3.3 Mobile app creation/bn PPP\$ GDP 62.4 75		
4.3.2 Domestic industry diversification			76.8 72			
4.3.3 Domestic market scale, bn PPP\$			993.7 32			

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 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.

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Data Availability

The following tables list indicators that are either missing or outdated for South Africa.



South Africa has missing data for one indicator and outdated data for nine indicators.

Missing data for South Africa

Code	Indicator name	Economy year	Model year*	Source
2.1.4	PISA scales in reading, maths and science	n/a	2022	OECD, PISA

*Model year corresponds to the most frequent data year (the year that appears most often across all economies in the GII).

Outdated data for South Africa

Code	Indicator name	Economy year	Model year*	Source
2.1.3	School life expectancy, years	2022	2023	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2022	2023	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2022	2023	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2022	2023	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2022	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	2022	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD performed by business, % GDP	2022	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.5	Research talent, % in businesses	2022	2023	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
7.1.4	Industrial designs by origin/bn PPP\$ GDP	2022	2023	World Intellectual Property Organization; International Monetary Fund

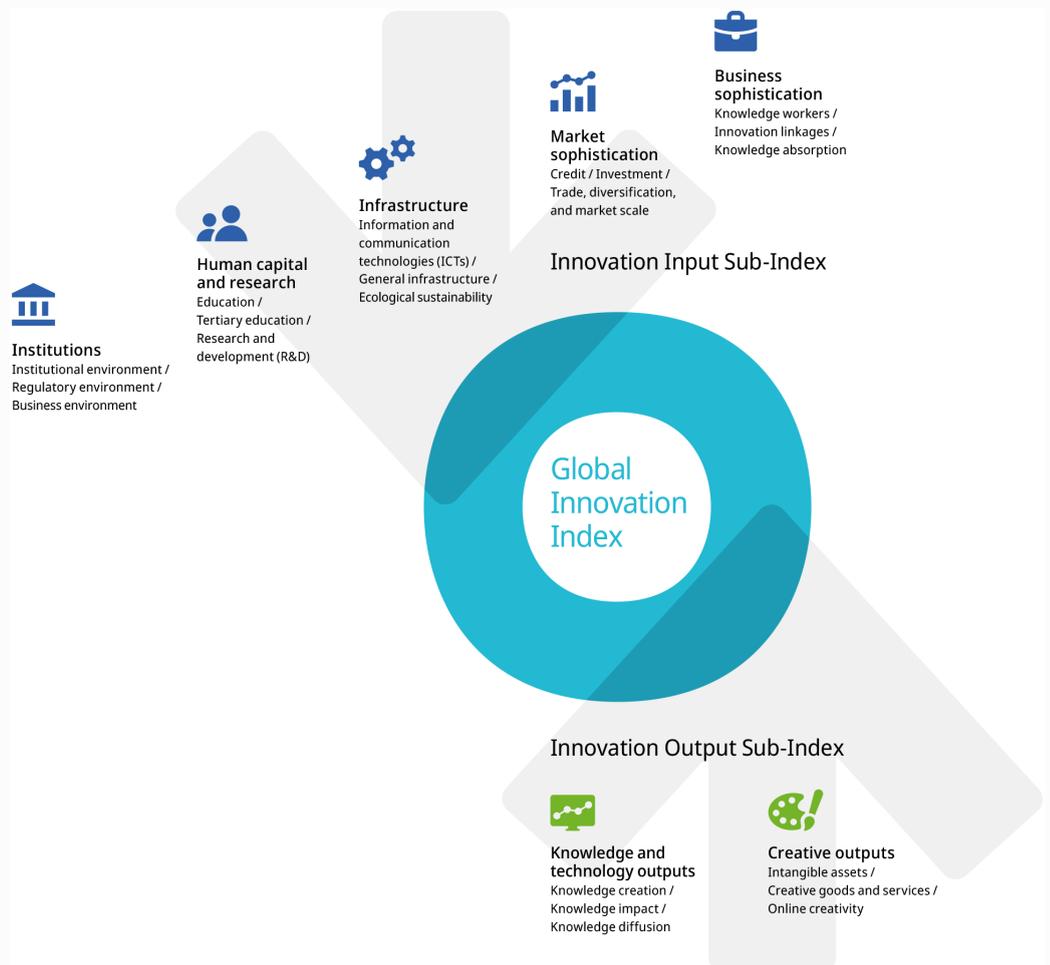
*Model year corresponds to the most frequent data year (the year that appears most often across all economies in the GII).

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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 140 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.