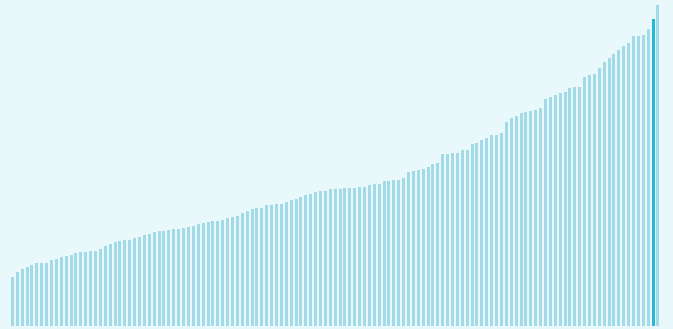


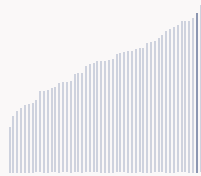
Sweden ranking in the Global Innovation Index 2024

Sweden ranks **2nd** among the 133 economies featured in the GII 2024.

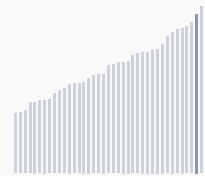
The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.



Sweden ranks **2nd** among the 51 high-income group economies.



Sweden ranks **2nd** among the 39 economies in Europe.



> Sweden GII Ranking (2020-2024)

The table shows the rankings of Sweden 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 Sweden in the GII 2024 is between ranks 2 and 3.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	2nd	3rd	2nd
2021	2nd	2nd	2nd
2022	3rd	4th	2nd
2023	2nd	4th	3rd
2024	2nd	3rd	2nd

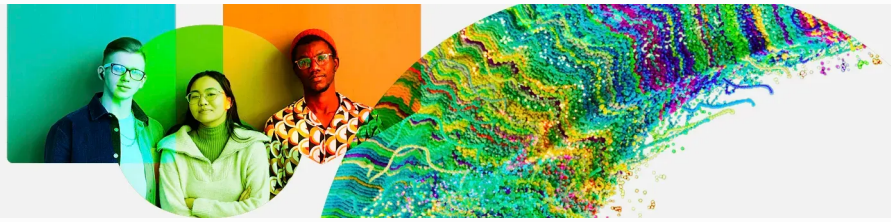
Sweden performs better in innovation outputs than innovation inputs in 2024.

This year Sweden ranks **3rd** in innovation inputs. This position is higher than last year.

Sweden ranks **2nd** in innovation outputs. This position is higher than last year.

Sweden has 2 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 Sweden, how rapidly is technology being embraced and what are the resulting societal impacts.



For Sweden, 6 indicators have improved in the short-term and 6 indicators have worsened.

Science and innovation investment

Scientific publications	R&D investments	Venture capital		International patent filings
		Deal numbers	Deal values	
▼ -5.6% 2022 - 2023	▲ 2.9% 2021 - 2022	▲ 18% 2022 - 2023	▼ -25% 2022 - 2023	▼ -3.5% 2022 - 2023
▲ 2.3% 2013 - 2023	▲ 2.9% 2012 - 2022	▲ 10.3% 2013 - 2023	▲ 19.9% 2013 - 2023	▲ 0.9% 2013 - 2023

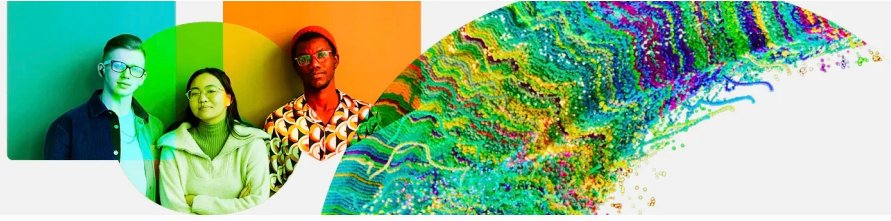
Technology adoption

Safe sanitation	Connectivity		Robots	Electric vehicles
	Fixed broadband	5G		
0% 2021 - 2022	▼ -0.7% 2021 - 2022	▲ 177.2% 2021 - 2022	▲ 6.1% 2021 - 2022	▲ 27.3% 2022 - 2023
0% 2012 - 2022	▲ 2.3% 2012 - 2022		▲ 5.4% 2012 - 2022	▲ 71.1% 2013 - 2023
95.6 per 100 inhabitants in 2022	40.4 per 100 inhabitants in 2022	56.8 per 100 inhabitants in 2022		11 per 100 inhabitants in 2023

Socioeconomic impact

Labor productivity	Life expectancy	Temperature change
▼ -1.4% 2022 - 2023	▲ 0.1% 2021 - 2022	▲ 1.5°C 2023
▲ 1% 2013 - 2023	▲ 0.2% 2012 - 2022	n/a
136,153 USD in 2023	83.1 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.



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.



Sweden is an innovation leader, ranking in the top 25 of the GII.

> Innovation overperformers relative to their economic development





Effectively translating innovation investments into innovation outputs

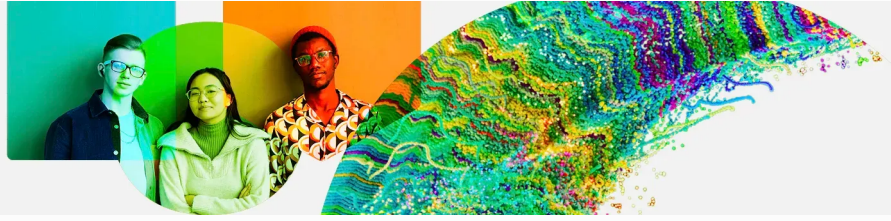
The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.



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

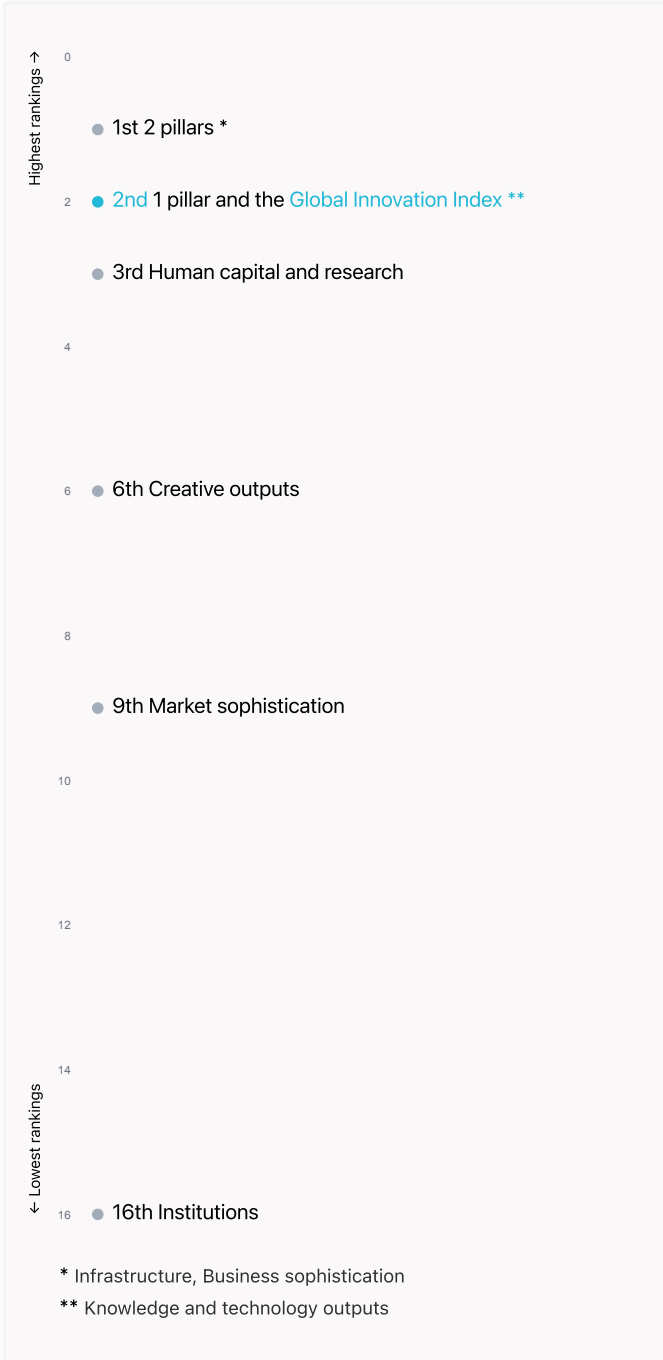
> Relationship between innovation inputs and outputs





Overview of Sweden'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 Sweden are those that rank above the GII (shown in blue) and the weakest are those that rank below.



Highest rankings



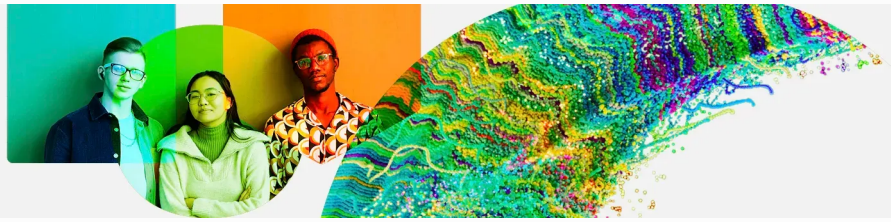
Sweden ranks highest in Infrastructure, Business sophistication (1st) and Knowledge and technology outputs (2nd).

Lowest rankings



Sweden ranks lowest in Institutions (16th), Market sophistication (9th) and Creative outputs (6th).

The full WIPO Intellectual Property Statistics profile for Sweden can be found on [this link](#).



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

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



High-Income economies

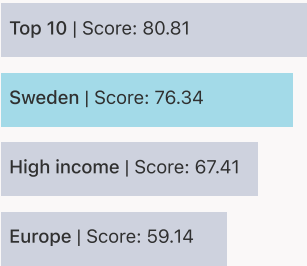
Sweden performs above the high-income group average in all pillars.



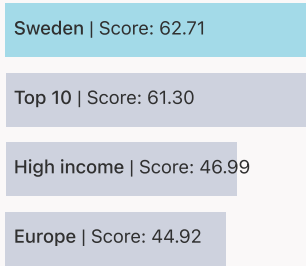
Europe

Sweden performs above the regional average in all pillars.

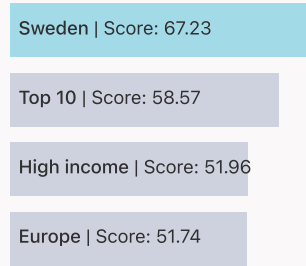
Institutions



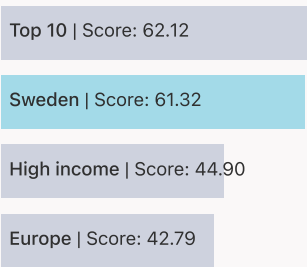
Human capital and research



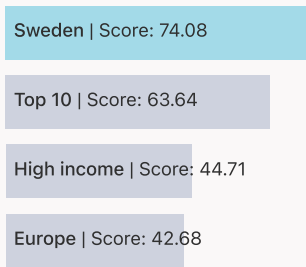
Infrastructure



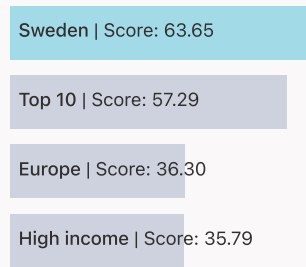
Market sophistication



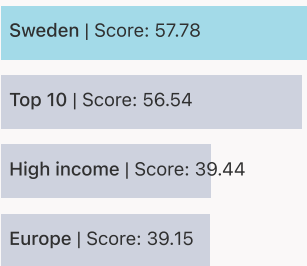
Business sophistication



Knowledge and technology outputs



Creative outputs





Innovation strengths and weaknesses in Sweden

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



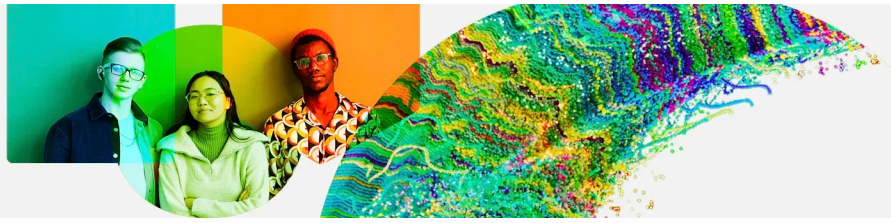
Sweden's main innovation strengths are **Cultural and creative services exports, % total trade (rank 1)**, **Intellectual property payments, % total trade (rank 1)** and **Intellectual property receipts, % total trade (rank 1)**.

Strengths

Weaknesses

Rank	Code	Indicator name	Rank	Code	Indicator name
1	7.2.1	Cultural and creative services exports, % total trade	61	6.2.1	Labor productivity growth, %
1	5.3.1	Intellectual property payments, % total trade	60	2.1.5	Pupil-teacher ratio, secondary
1	6.3.1	Intellectual property receipts, % total trade	59	7.1.2	Trademarks by origin/bn PPP\$ GDP
1	6.1.2	PCT patents by origin/bn PPP\$ GDP	54	5.3.2	High-tech imports, % total trade
1	2.3.1	Researchers, FTE/mn pop.	50	6.3.5	ISO 9001 quality/bn PPP\$ GDP
3	7.1.3	Global brand value, top 5,000, % GDP	49	3.3.1	GDP/unit of energy use
3	5.3.3	ICT services imports, % total trade	42	1.3.2	Entrepreneurship policies and culture [†]
3	5.1.1	Knowledge-intensive employment, %	42	2.2.3	Tertiary inbound mobility, %
4	3.3.2	Low-carbon energy use, %	32	7.2.2	National feature films/mn pop. 15-69
4	5.3.5	Research talent, % in businesses	21	4.3.1	Applied tariff rate, weighted avg., %
5	5.1.5	Females employed w/advanced degrees, %			
5	5.2.5	Patent families/bn PPP\$ GDP			
5	2.3.2	Gross expenditure on R&D, % GDP			

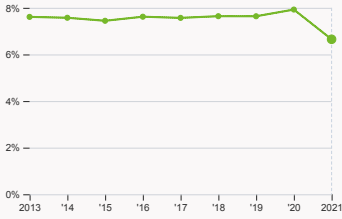
Global Innovation Index 2024



Sweden's innovation system

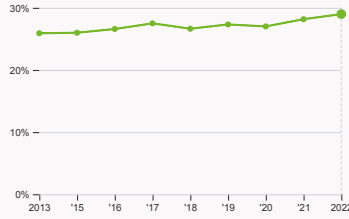
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in Sweden



2.1.1 Expenditure on education

was equal to 6.65 % GDP in 2021, down by 1.28 percentage points from the year prior – and equivalent to an indicator rank of 7.



2.2.2 Graduates in science and engineering

was equal to 28.99 % of total graduates in 2022, up by 0.83 percentage points from the year prior – and equivalent to an indicator rank of 27.



2.3.1 Researchers

was equal to 9929.18 FTE per million population in 2022, up by 3% from the year prior – and equivalent to an indicator rank of 1.



2.3.2 Gross expenditure on R&D

was equal to 3.41 % GDP in 2022, up by 0.006 percentage points from the year prior – and equivalent to an indicator rank of 5.



2.3.4 QS university ranking

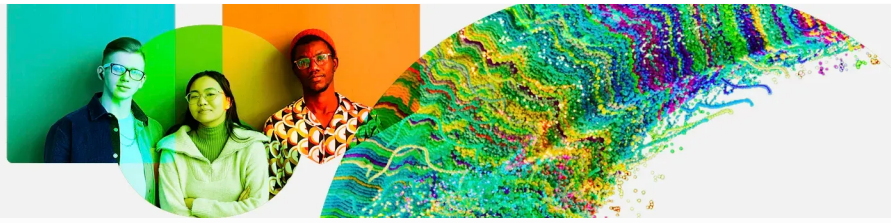
was equal to an average score of 62.87 for the top three universities in 2023, up by 6.74% from the year prior – and equivalent to an indicator rank of 14.



4.2.4 VC received, value

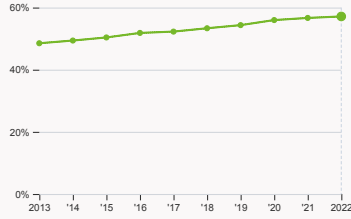
was equal to 2.67 million USD in 2023, down by 25% from the year prior – and equivalent to an indicator rank of 7.

Global Innovation Index 2024



4.3.2 Domestic industry diversification

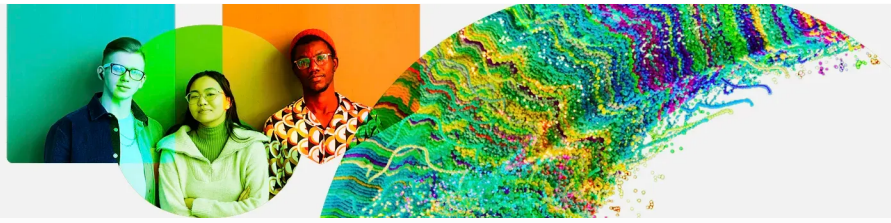
was equal to an index score of 0.08 in 2021, up by 0.9% from the year prior – and equivalent to an indicator rank of 8.



5.1.1 Knowledge-intensive employment

was equal to 57.14 % in 2022, up by 0.48 percentage points from the year prior – and equivalent to an indicator rank of 3.

Global Innovation Index 2024

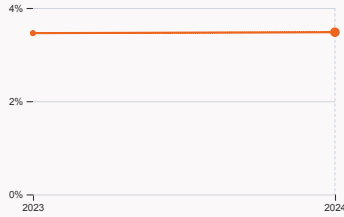


› Innovation outputs in Sweden



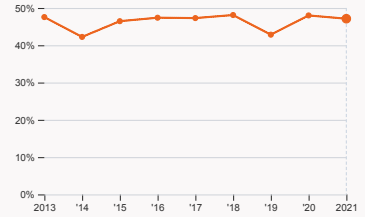
6.1.1 Patents by origin

was equal to 6.84 thousand patents in 2022, up by 1.79% from the year prior – and equivalent to an indicator rank of 9.



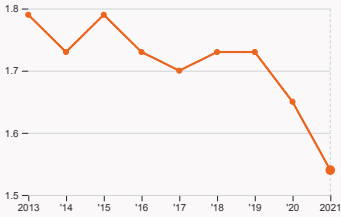
6.2.2 Unicorn valuation

was equal to 3.48 % GDP in 2024, up by 0.02 percentage points from the year prior – and equivalent to an indicator rank of 10.



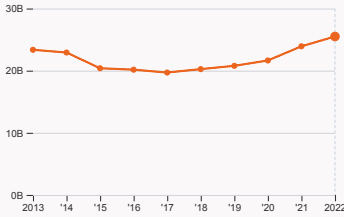
6.2.4 High-tech manufacturing

was equal to 47.12 % of total manufacturing output in 2021, down by 0.88 percentage points from the year prior – and equivalent to an indicator rank of 13.



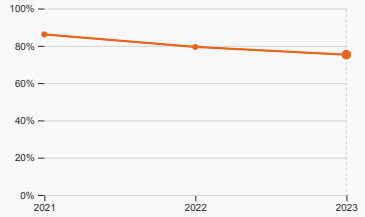
6.3.2 Production and export complexity

was equal to a score of 1.54 in 2021, down by 6.67% from the year prior – and equivalent to an indicator rank of 10.



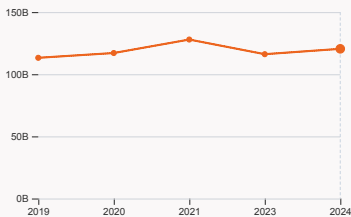
6.3.3 High-tech exports

was equal to 25.5 billion USD in 2022, up by 6.61% from the year prior – and equivalent to an indicator rank of 22.



7.1.1 Intangible asset intensity

was equal to 75.24 % for the top 15 companies in 2023, down by 4.17 percentage points from the year prior – and equivalent to an indicator rank of 11.



7.1.3 Global brand value

was equal to 120.43 billion USD for the brands in the top 5,000 in 2024, up by 3.71% from the year prior – and equivalent to an indicator rank of 3.



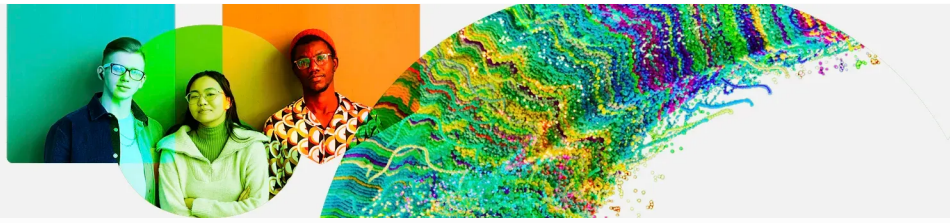
7.2.2 National feature films

was equal to 30 films in 2022, down by 38.78% from the year prior – and equivalent to an indicator rank of 32.



7.3.3 Mobile app creation

was equal to 1.38 billion global downloads of mobile apps in 2023, down by 10.39% from the year prior – and equivalent to an indicator rank of 10.



Sweden's innovation top performers

2.3.3 Global corporate R&D investors from Sweden

Rank	Firm	Industry	R&D	R&D Growth	R&D Intensity
			[mn EUR]	[%]	[%]
49	ERICSSON	Technology Hardware & Equipment	4,254	14	17
101	VOLVO	Automobiles & Parts	2,199	33	5
121	GEELY SWEDEN HOLDINGS	Automobiles & Parts	1,901	13	6
310	HEXAGON	Industrial Engineering	713	26	14

Source: European Commission's Joint Research Centre (<https://iri.jrc.ec.europa.eu/scoreboard/2022-eu-industrial-rd-investment-scoreboard>).
 Note: European Commission's Joint Research Centre ranks the top 2,500 firms by R&D investment annually.

2.3.4 QS university ranking of Sweden's top universities

Rank	University	Score
73	KTH, ROYAL INSTITUTE OF TECHNOLOGY	66.40
85	LUND UNIVERSITY	62.80
105	UPPSALA UNIVERSITY	59.40

Source: QS Quacquarelli Symonds Ltd (<https://www.topuniversities.com/university-rankings/world-university-rankings/2023>).
 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".

6.2.2 Top Unicorn Companies in Sweden

Rank	Unicorn Company	Industry	City	Valuation, bn USD
1	NORTHVOLT	Industrials	Stockholm	9
2	KLARNA	Financial Services	Stockholm	7
3	KRY	Healthcare & Life Sciences	Stockholm	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 Sweden

Rank	Firm	Intensity, %
1	ATLAS COPCO AB	93.43
2	AB VOLVO	52.67
3	HEXAGON AB	93.09

Source: Brand Finance (<https://brandirectory.com/reports/gift-2022>).

Note: Brand Finance only provides within economy ranks.

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

Rank	Brand	Industry	Brand Value, mn USD
1	IKEA	Retail	15,786.1
2	VOLVO	Automobiles	11,728.2
3	H&M	Apparel	8,547.5

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

Note: Rank corresponds to within economy ranks.

Global Innovation Index 2024

Sweden

GII 2024 rank

2

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
2	3	High	EUR	10.6	716	66,209.3
			Score / Value Rank			
Institutions			76.3 16	Business sophistication 74.1 1		
1.1 Institutional environment			84.5 12	5.1 Knowledge workers 80.4 3		
1.1.1 Operational stability for businesses*			84 12	5.1.1 Knowledge-intensive employment, % 57.1 3		
1.1.2 Government effectiveness*			85.1 10	5.1.2 Firms offering formal training, % 61.9 6		
1.2 Regulatory environment			89.2 8	5.1.3 GERD performed by business, % GDP 2.5 6		
1.2.1 Regulatory quality*			86 8	5.1.4 GERD financed by business, % 60.7 12		
1.2.2 Rule of law*			92.3 10	5.1.5 Females employed w/advanced degrees, % 28.9 5		
1.3 Business environment			55.3 45	5.2 Innovation linkages 69 4		
1.3.1 Policy stability for doing business*			70.4 27	5.2.1 Public Research-Industry co-publications, % 5.4 11		
1.3.2 Entrepreneurship policies and culture*			40.3 42	5.2.2 University-industry R&D collaboration+ 80.1 13		
Human capital and research			62.7 3	5.2.3 State of cluster development+ 81.8 17		
2.1 Education			68.3 8	5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP 0.2 7		
2.1.1 Expenditure on education, % GDP 6.7 7			6.7 7	5.2.5 Patent families/bn PPP\$ GDP 7.2 5		
2.1.2 Government funding/pupil, secondary, % GDP/cap 24.2 25			24.2 25	5.3 Knowledge absorption 72.8 1		
2.1.3 School life expectancy, years 19 8			19 8	5.3.1 Intellectual property payments, % total trade 4.4 1		
2.1.4 PISA scales in reading, maths and science 487.4 18			487.4 18	5.3.2 High-tech imports, % total trade 8.9 54		
2.1.5 Pupil-teacher ratio, secondary 13.1 60			13.1 60	5.3.3 ICT services imports, % total trade 4.8 3		
2.2 Tertiary education			45.6 24	5.3.4 FDI net inflows, % GDP 6.7 17		
2.2.1 Tertiary enrolment, % gross 83.9 18			83.9 18	5.3.5 Research talent, % in businesses 77.4 4		
2.2.2 Graduates in science and engineering, % 29 27			29 27	Knowledge and technology outputs 63.7 2		
2.2.3 Tertiary inbound mobility, % 7 42			7 42	6.1 Knowledge creation 74.6 2		
2.3 Research and development (R&D)			74.2 3	6.1.1 Patents by origin/bn PPP\$ GDP 9.8 9		
2.3.1 Researchers, FTE/mn pop. 9,929.2 1			9,929.2 1	6.1.2 PCT patents by origin/bn PPP\$ GDP 6 1		
2.3.2 Gross expenditure on R&D, % GDP 3.4 5			3.4 5	6.1.3 Utility models by origin/bn PPP\$ GDP - -		
2.3.3 Global corporate R&D investors, top 3, mn USD 76.7 10			76.7 10	6.1.4 Scientific and technical articles/bn PPP\$ GDP 38.9 7		
2.3.4 QS university ranking, top 3* 63.6 14			63.6 14	6.1.5 Citable documents H-index 59.1 13		
Infrastructure			67.2 1	6.2 Knowledge impact 58.9 6		
3.1 Information and communication technologies (ICTs)			87.8 15	6.2.1 Labor productivity growth, % 0.8 61		
3.1.1 ICT access* 98.3 29			98.3 29	6.2.2 Unicorn valuation, % GDP 3.5 10		
3.1.2 ICT use* 91.9 14			91.9 14	6.2.3 Software spending, % GDP 0.6 16		
3.1.3 Government's online service* 89 13			89 13	6.2.4 High-tech manufacturing, % 47.1 13		
3.1.4 E-participation* 72.1 32			72.1 32	6.3 Knowledge diffusion 57.5 6		
3.2 General infrastructure			63.2 6	6.3.1 Intellectual property receipts, % total trade 3.3 1		
3.2.1 Electricity output, GWh/mn pop. 16,506.2 7			16,506.2 7	6.3.2 Production and export complexity 81.7 10		
3.2.2 Logistics performance* 86.4 7			86.4 7	6.3.3 High-tech exports, % total trade 8.4 22		
3.2.3 Gross capital formation, % GDP 27.3 34			27.3 34	6.3.4 ICT services exports, % total trade 6.9 11		
3.3 Ecological sustainability			50.6 2	6.3.5 ISO 9001 quality/bn PPP\$ GDP 5.7 50		
3.3.1 GDP/unit of energy use 12.2 49			12.2 49	Creative outputs 57.8 6		
3.3.2 Low-carbon energy use, % 70.4 4			70.4 4	7.1 Intangible assets 55.4 12		
3.3.3 ISO 14001 environment/bn PPP\$ GDP 5.3 19			5.3 19	7.1.1 Intangible asset intensity, top 15, % 75.2 11		
Market sophistication			61.3 9	7.1.2 Trademarks by origin/bn PPP\$ GDP 34 59		
4.1 Credit			58.9 12	7.1.3 Global brand value, top 5,000, % GDP 19.4 3		
4.1.1 Finance for startups and scaleups+ 69.3 16			69.3 16	7.1.4 Industrial designs by origin/bn PPP\$ GDP 2.7 32		
4.1.2 Domestic credit to private sector, % GDP 132.3 12			132.3 12	7.2 Creative goods and services 49.9 7		
4.1.3 Loans from microfinance institutions, % GDP n/a n/a			n/a n/a	7.2.1 Cultural and creative services exports, % total trade 3.6 1		
4.2 Investment			57.7 12	7.2.2 National feature films/mn pop. 15-69 4.2 32		
4.2.1 Market capitalization, % GDP n/a n/a			n/a n/a	7.2.3 Entertainment and media market/th pop. 15-69 53.7 10		
4.2.2 Venture capital (VC) investors, deals/bn PPP\$ GDP 0.4 14			0.4 14	7.2.4 Creative goods exports, % total trade 1.6 30		
4.2.3 VC recipients, deals/bn PPP\$ GDP 0.2 10			0.2 10	7.3 Online creativity 70.4 6		
4.2.4 VC received, value, % GDP 0.007 7			0.007 7	7.3.1 Top-level domains (TLDs)/th pop. 15-69 46 14		
4.3 Trade, diversification and market scale			67.3 25	7.3.2 GitHub commits/mn pop. 15-69 85.7 6		
4.3.1 Applied tariff rate, weighted avg., % 1.1 21			1.1 21	7.3.3 Mobile app creation/bn PPP\$ GDP 79.4 10		
4.3.2 Domestic industry diversification 96.9 8			96.9 8			
4.3.3 Domestic market scale, bn PPP\$ 716 39			716 39			

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.



Data availability

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



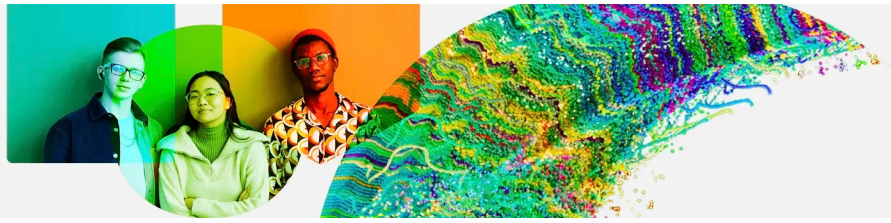
Sweden has missing data for three indicators and outdated data for two indicators.

Missing data for Sweden

Code	Indicator name	Economy Year	Model Year	Source
4.1.3	Loans from microfinance institutions, % GDP	n/a	2022	International Monetary Fund, Financial Access Survey (FAS)
4.2.1	Market capitalization, % GDP	n/a	2022	World Federation of Exchanges; World Bank
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2022	World Intellectual Property Organization; International Monetary Fund

Outdated data for Sweden

Code	Indicator name	Economy Year	Model Year	Source
2.1.1	Expenditure on education, % GDP	2021	2022	UNESCO Institute for Statistics
5.1.2	Firms offering formal training, %	2020	2023	World Bank Enterprise Surveys



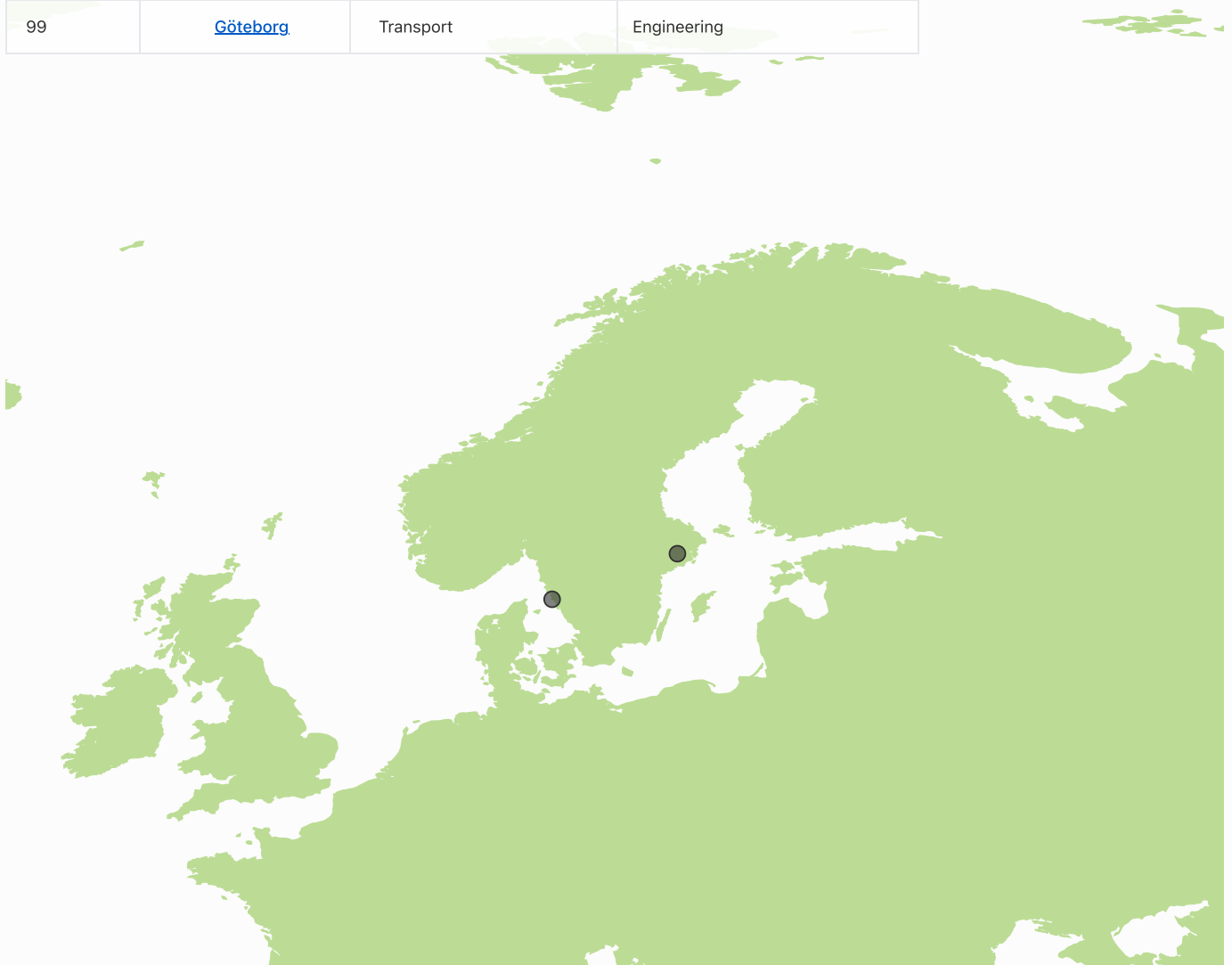
Top science and technology clusters in Sweden



Sweden has 2 clusters in the top 100 S&T clusters of the Global Innovation Index, the same number as in 2023.

The table and map below give an overview of the top science and technology clusters in Sweden.

Rank	Cluster name	Top patent field	Top academic subject
40	Stockholm	Digital communication	Engineering
99	Göteborg	Transport	Engineering

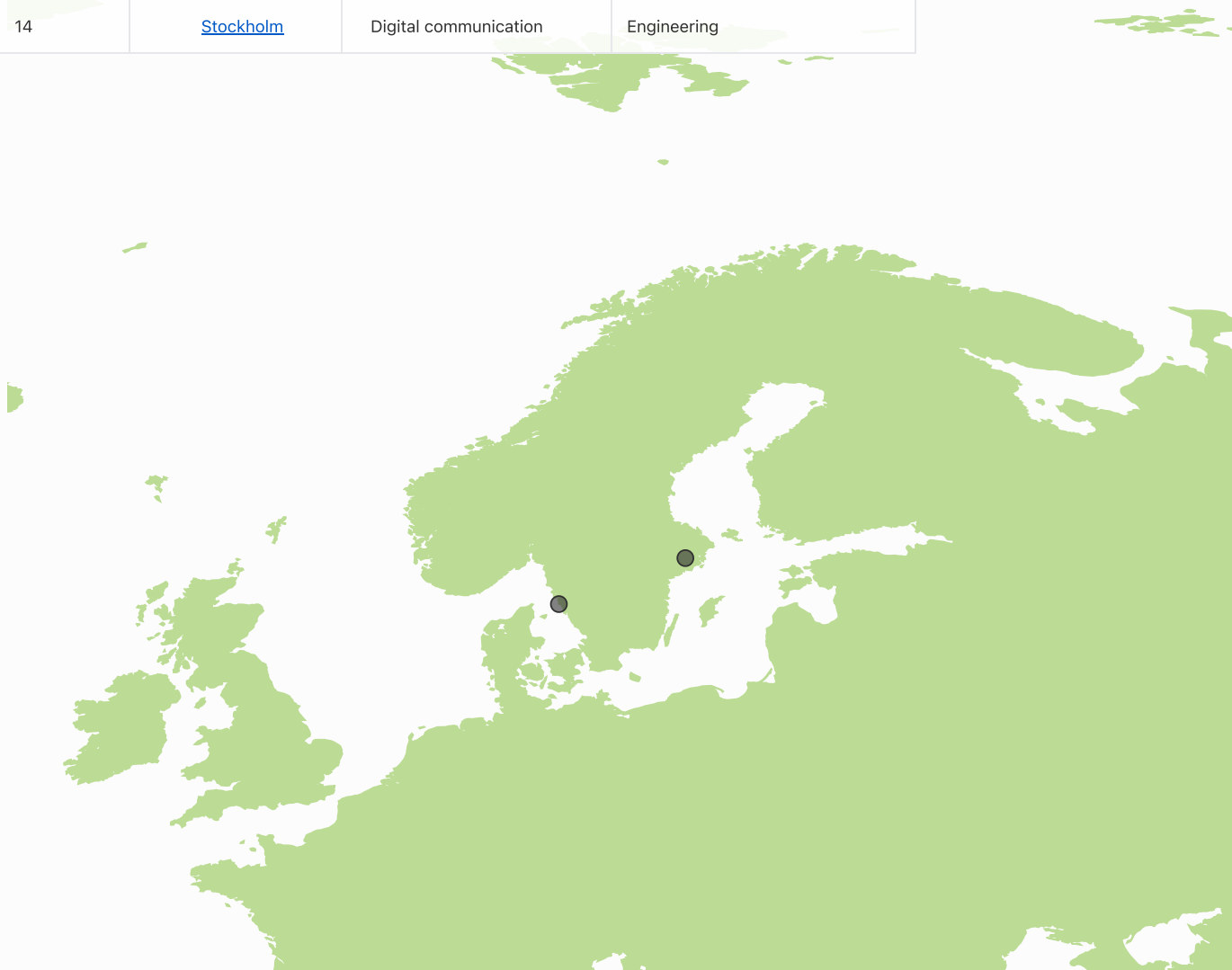


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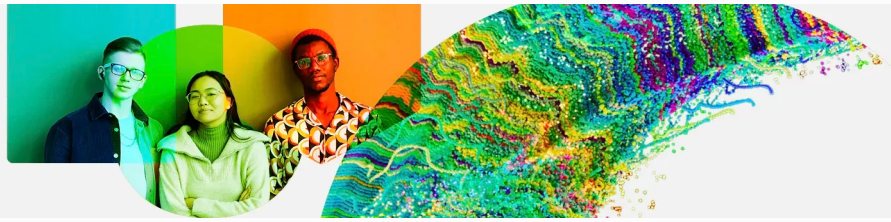


The table and map below give an overview of the top science and technology clusters by intensity in Sweden.

Rank	Cluster name	Top patent field	Top academic subject
12	Göteborg	Transport	Engineering
14	Stockholm	Digital communication	Engineering

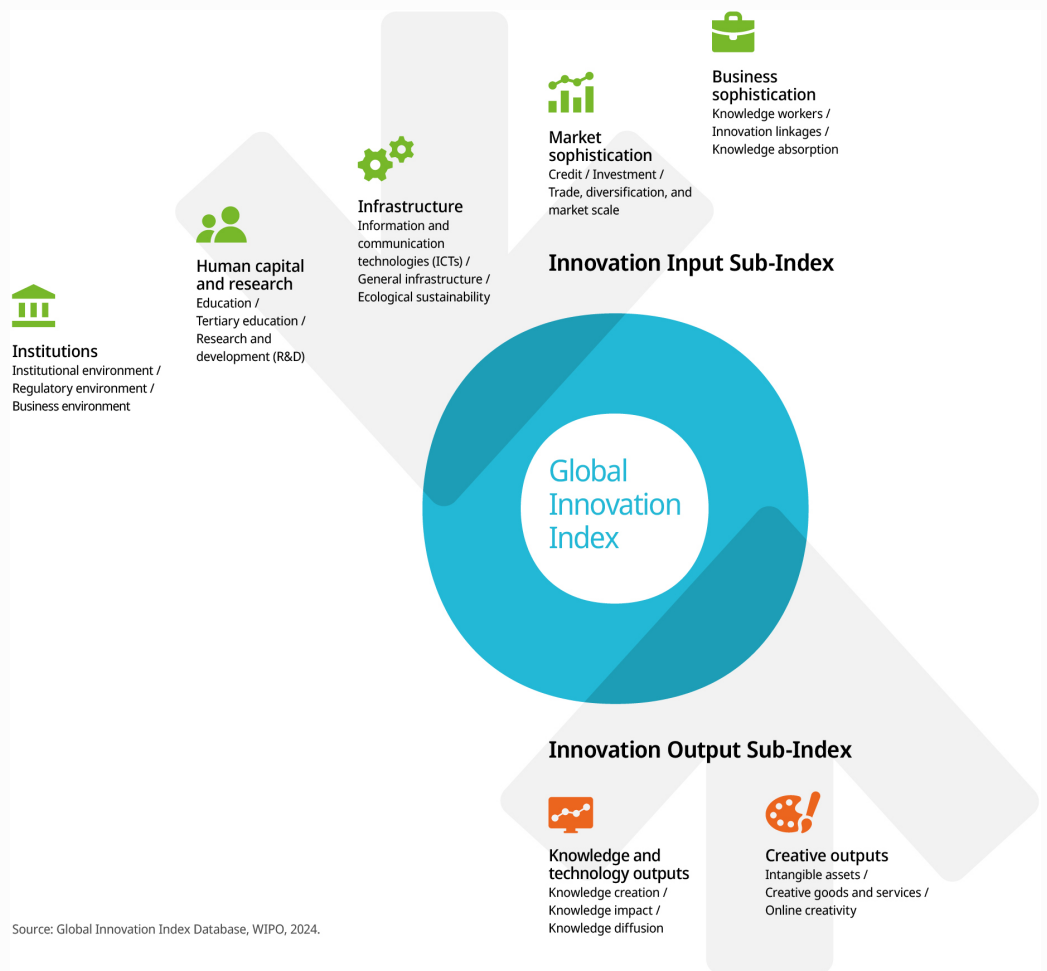


Global Innovation Index 2024



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.



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.