Global Innovation Index 2023

The Global Innovation Index (GII) **ranks world economies according to their innovation capabilities.**

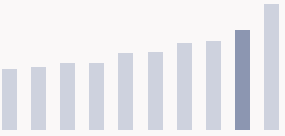
Consisting of **roughly 80 indicators**, grouped into innovation inputs and outputs, the GII **aims to capture the multi-dimensional facets of innovation**.

Iran (Islamic Republic of) ranking in the Global Innovation Index 2023

> Iran (Islamic Republic of) ranks 62nd among the 132 economies featured in the GII 2023.

> Iran (Islamic Republic of) ranks 6th among the 37 lower-middle-income group economies.

> Iran (Islamic Republic of) ranks 2nd among the 10 economies in Central and Southern Asia.



> Iran (Islamic Republic of) GII Ranking (2020-2023)

The table shows the rankings of Iran (Islamic Republic of) 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 Iran (Islamic Republic of) in the GII 2023 is between ranks 57 and 75.

	GII Position	Innovation Inputs	Innovation Outputs
2020	67th	90th	50th
2021	60th	86th	44th
2022	53rd	73rd	38th
2023	62nd	87th	48th

Iran (Islamic Republic of) performs better in innovation outputs than innovation inputs in 2023.

This year **Iran (Islamic Republic of) ranks 87th in innovation inputs.** This position is lower than last year.

Iran (Islamic Republic of) ranks 48th in innovation outputs. This position is lower than last year.

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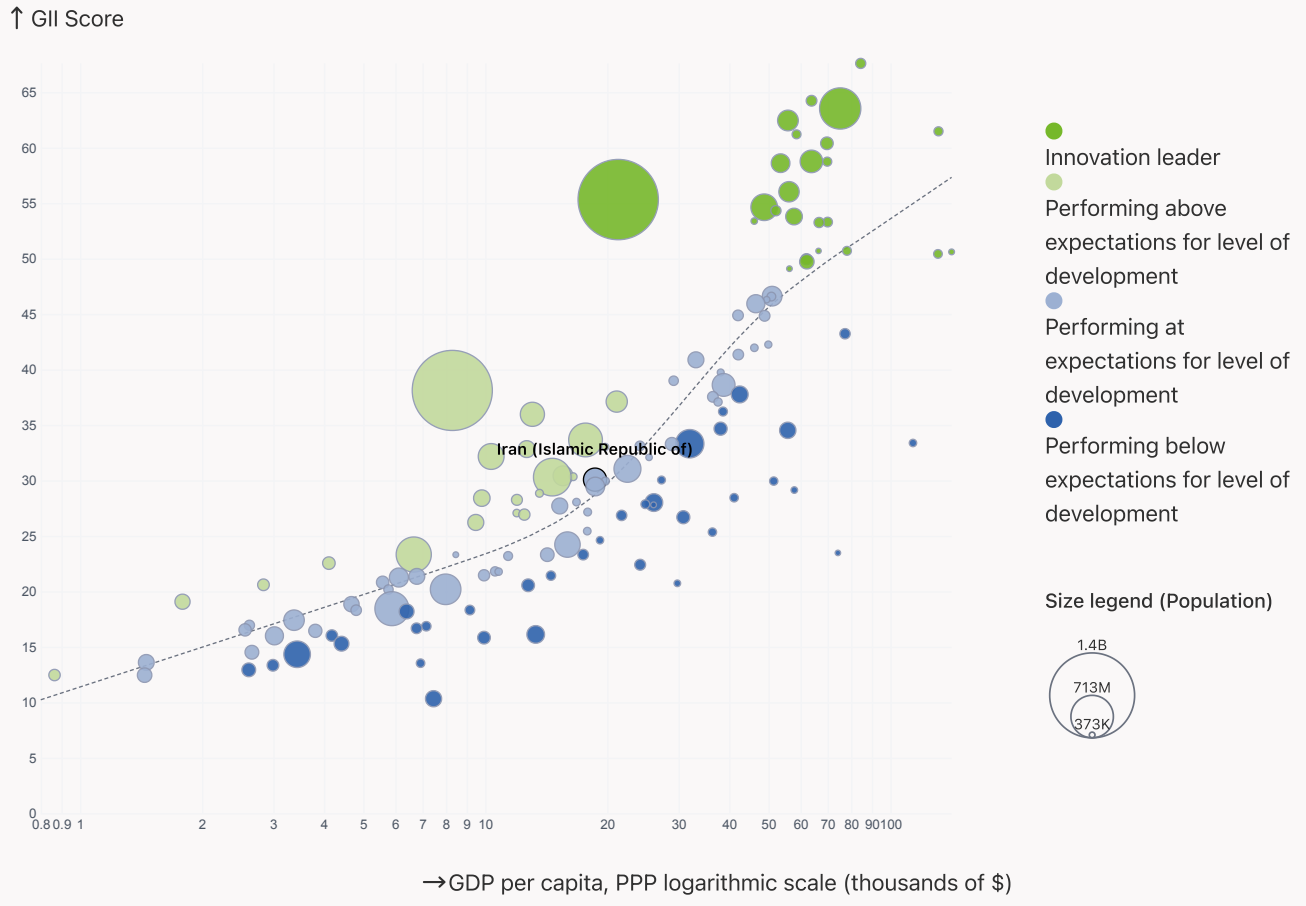
→ Expected vs. observed innovation performance

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, Iran (Islamic Republic of)'s performance is at expectations for its level of development.

> Innovation overperformers relative to their economic development



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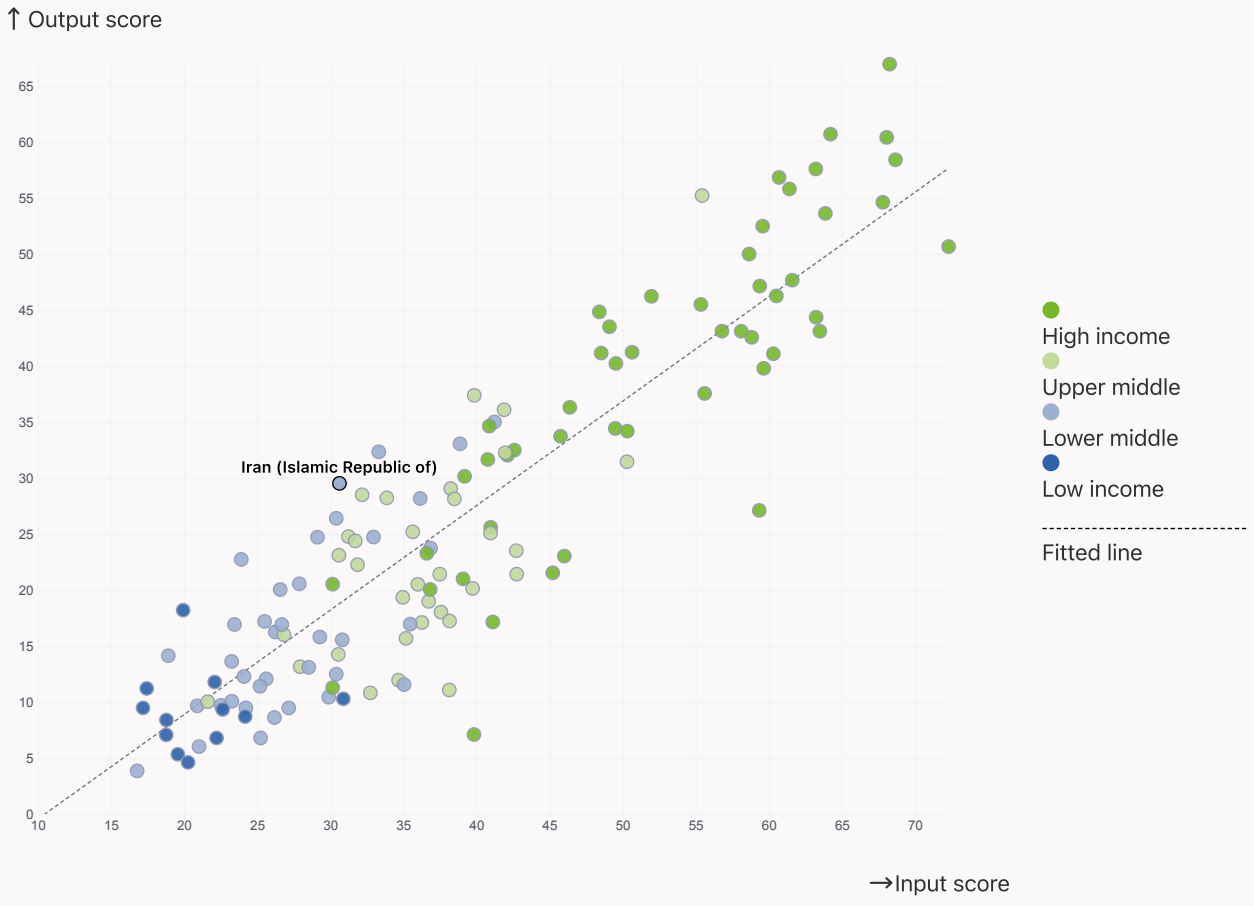
→ Effectively translating innovation investments into innovation outputs

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.

> Iran (Islamic Republic of) produces more innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs



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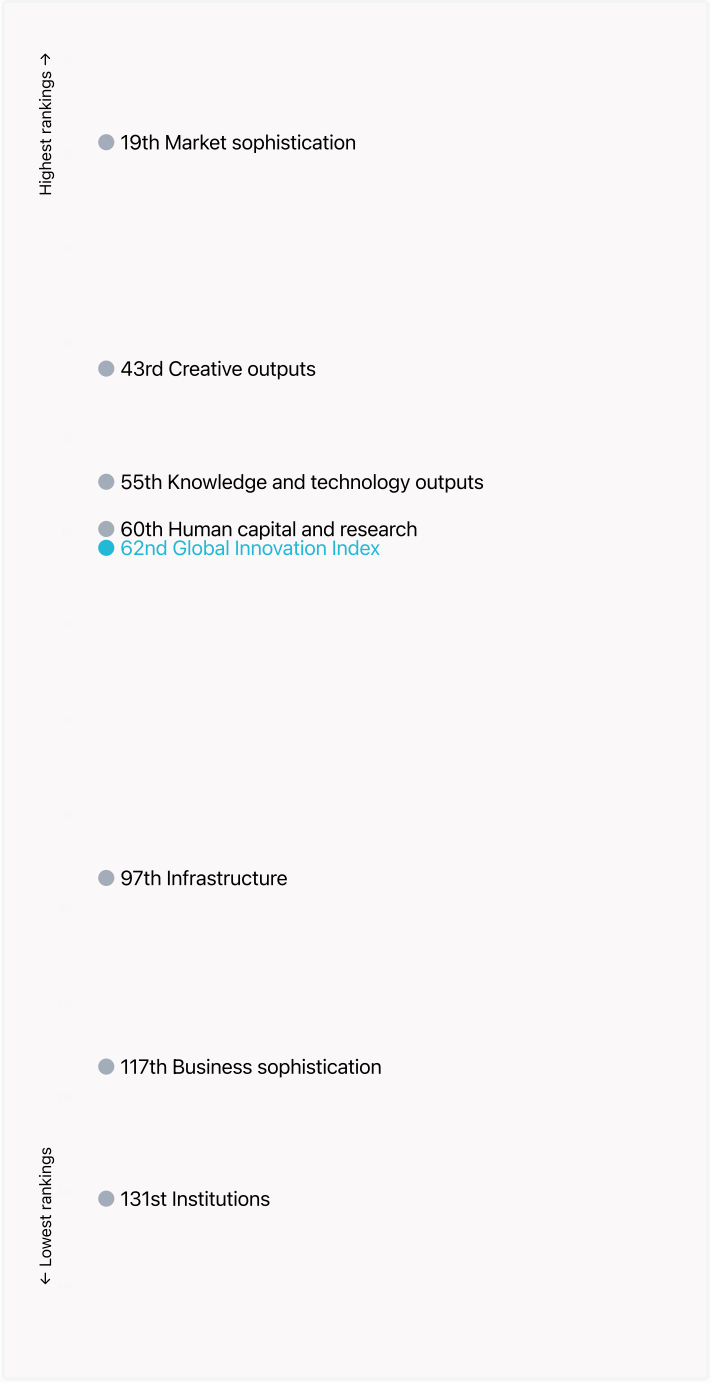
→ Overview of Iran (Islamic Republic of)'s rankings in the seven areas of the GII in 2023

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



> Highest rankings

Iran (Islamic Republic of) ranks highest in Market sophistication (19th), Creative outputs (43rd), Knowledge and technology outputs (55th) and Human capital and research (60th).

> Lowest rankings

Iran (Islamic Republic of) ranks lowest in Institutions (131st), Business sophistication (117th) and Infrastructure (97th).

The full WIPO Intellectual Property Statistics profile for Iran (Islamic Republic of) can be found on this link.

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→ Benchmark of Iran (Islamic Republic of) against other country groupings for each of the seven areas of the GII Index

The charts shows the relative position of Iran (Islamic Republic of) (blue bar) against other country groupings (grey bars), for each of the seven areas of the GII Index.

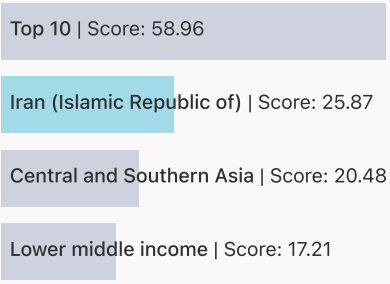
> Lower-Middle-Income economies

Iran (Islamic Republic of) performs above the lower-middle-income group average in Knowledge and technology outputs, Creative outputs, Market sophistication, Human capital and research, Infrastructure.

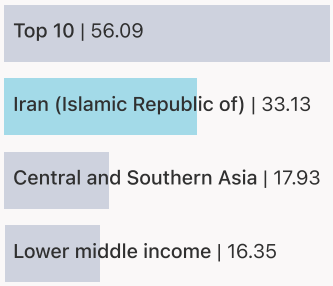
> Central And Southern Asia

Iran (Islamic Republic of) performs above the regional average in Knowledge and technology outputs, Creative outputs, Market sophistication, Human capital and research.

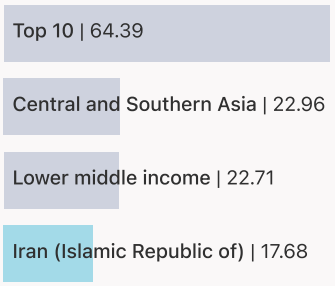
Knowledge and technology outputs



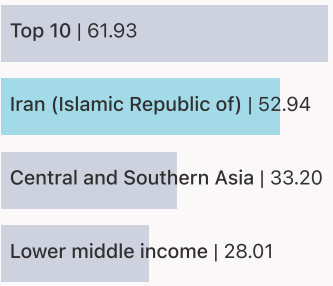
Creative outputs



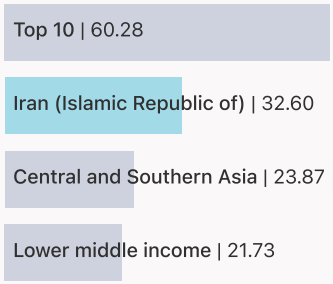
Business sophistication



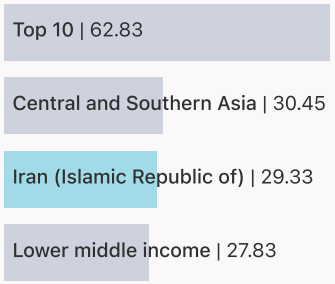
Market sophistication



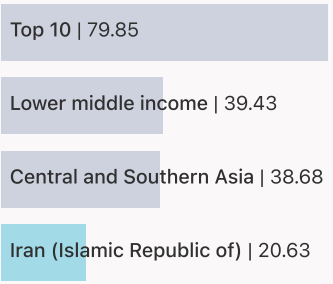
Human capital and research



Infrastructure



Institutions



Global Innovation Index 2023

→ Innovation strengths and weaknesses in Iran (Islamic Republic of)

The table below gives an overview of the indicator strengths and weaknesses of Iran (Islamic Republic of) in the GII 2023.

> Iran (Islamic Republic of)'s main innovation strengths are **Trademarks by origin/bn PPP$ GDP** (rank 1), **Graduates in science and engineering, %** (rank 3) and **Market capitalization, % GDP** (rank 5).

Strengths

Rank	Code	Indicator name
1	7.1.2	Trademarks by origin/bn PPP$ GDP
3	2.2.2	Graduates in science and engineering, %
5	4.2.1	Market capitalization, % GDP
9	3.2.3	Gross capital formation, % GDP
11	7.1.4	Industrial designs by origin/bn PPP$ GDP
13	6.1.1	Patents by origin/bn PPP$ GDP
16	6.2.3	Software spending, % GDP
20	4.3.3	Domestic market scale, bn PPP$
27	6.1.4	Scientific and technical articles/bn PPP$ GDP
40	6.1.5	Citable documents H-index

Weaknesses

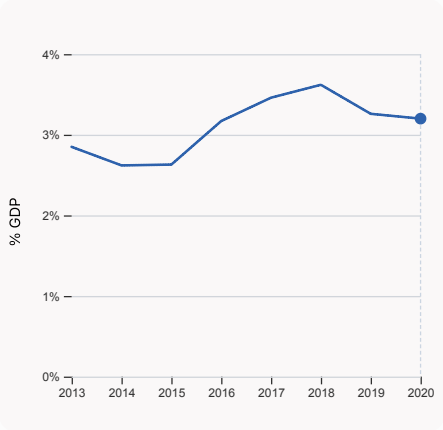
Rank	Code	Indicator name
132	1.2.1	Regulatory quality
127	3.1.4	E-participation
126	5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP
126	1.1.1	Operational stability for businesses
124	5.2.1	University-industry R&D collaboration
124	1.3.1	Policies for doing business
106	3.2.2	Logistics performance
83	1.3.2	Entrepreneurship policies and culture
48	6.2.2	Unicorn valuation, % GDP
40	2.3.3	Global corporate R&D investors, top 3, mn US$

Global Innovation Index 2023

→ Iran (Islamic Republic of)'s innovation system

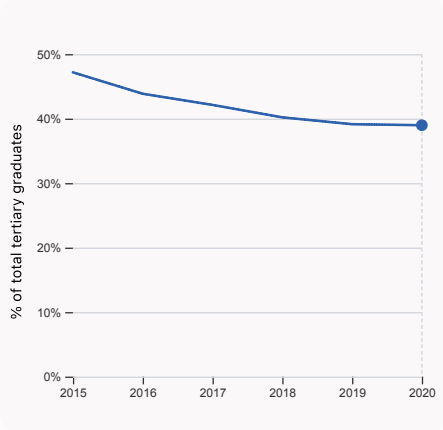
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in Iran (Islamic Republic of)



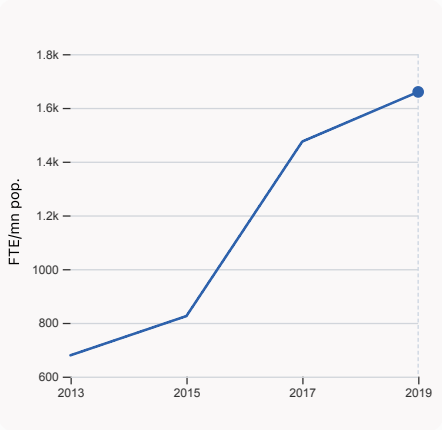
2.1.1 Expenditure on education, % GDP

was equal to 3.2% GDP in 2020, down by 0.06 percentage points from the year prior – and equivalent to an indicator rank of 100.



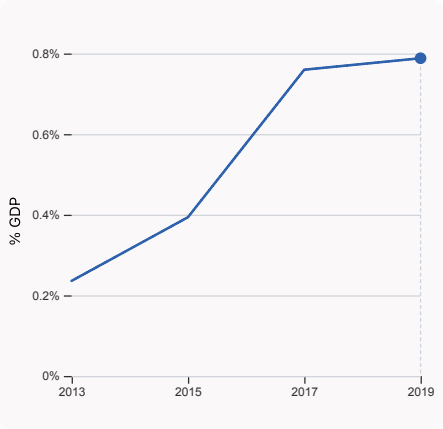
2.2.2 Graduates in science and engineering, %

was equal to 38.98% of total tertiary graduates in 2020, down by 0.16 percentage points from the year prior – and equivalent to an indicator rank of 3.



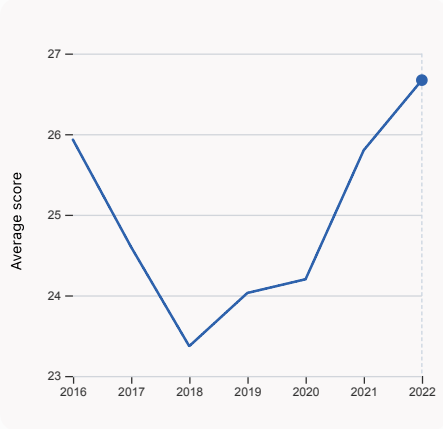
2.3.1 Researchers, FTE/mn pop.

was equal to 1,659.46 FTE/mn pop. in 2019, up by 12.51% from the year prior – and equivalent to an indicator rank of 45.



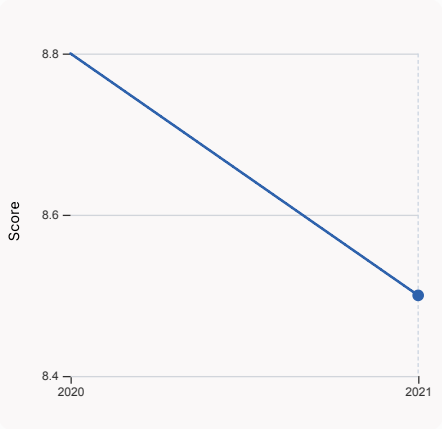
2.3.2 Gross expenditure on R&D, % GDP

was equal to 0.788% GDP in 2019, up by 0.028 percentage points from the year prior – and equivalent to an indicator rank of 46.



2.3.4 QS university ranking, top 3

was equal to an average score of 26.67 for the top 3 universities in 2022, up by 3.37% from the year prior – and equivalent to an indicator rank of 44.



3.1.1 ICT access

was equal to a score of 8.5 in 2021, down by 3.41% from the year prior – and equivalent to an indicator rank of 80.

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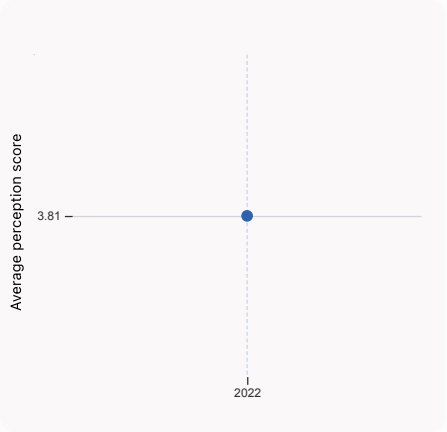
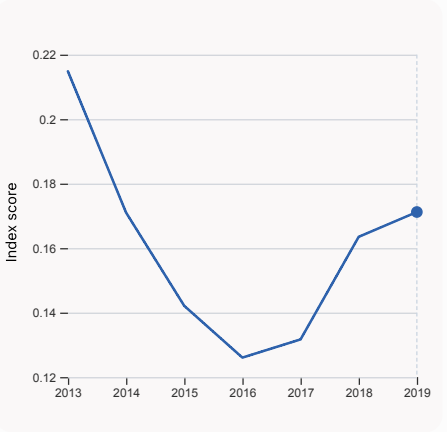


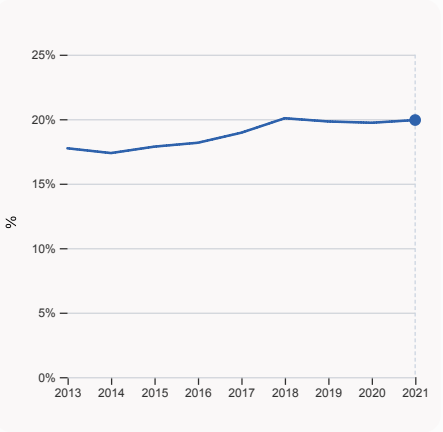
4.1.1 Finance for startups and scaleups

was equal to an average perception score of 3.81 in 2022, equivalent to an indicator rank of 61.



4.3.2 Domestic industry diversification

was equal to an index score of 0.171 in 2019, up by 4.7% from the year prior – and equivalent to an indicator rank of 59.



5.1.1 Knowledge-intensive employment, %

was equal to 19.93% in 2021, up by 0.21 percentage points from the year prior – and equivalent to an indicator rank of 76.

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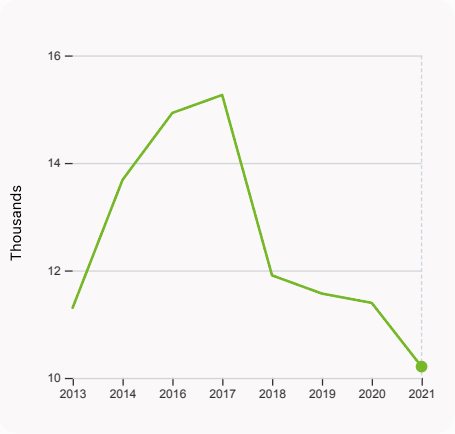
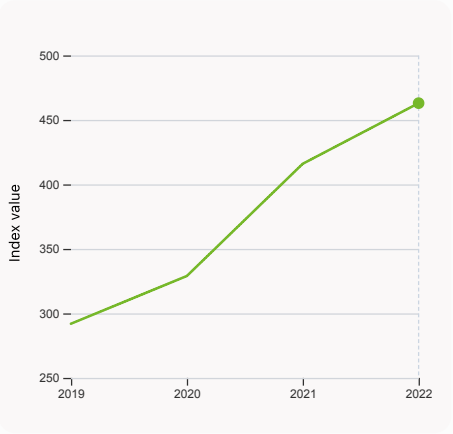
> Innovation outputs in Iran (Islamic Republic of)



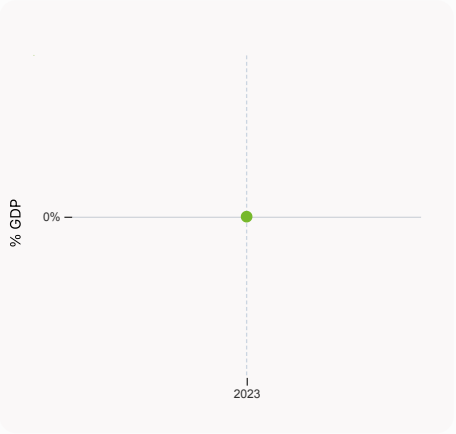
6.1.1 Patents by origin

was equal to 10.21 Thousands in 2021, down by 10.41% from the year prior – and equivalent to an indicator rank of 13.



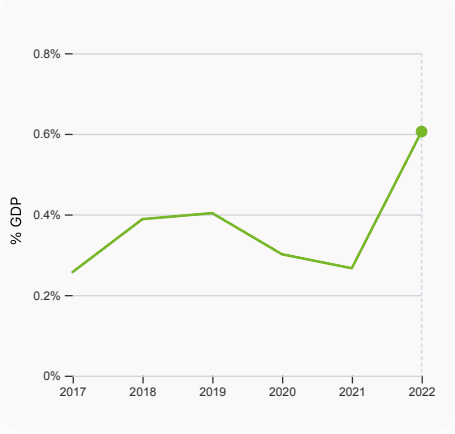
6.1.5 Citable documents H-index

was equal to an index value of 463 in 2022, up by 11.3% from the year prior – and equivalent to an indicator rank of 40.



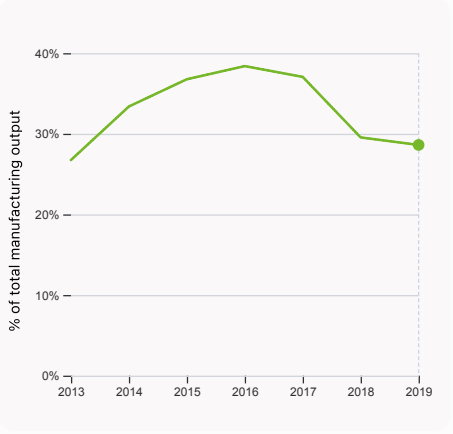
6.2.2 Unicorn valuation, % GDP

was equal to 0 % GDP in 2023 – and equivalent to an indicator rank of 48.



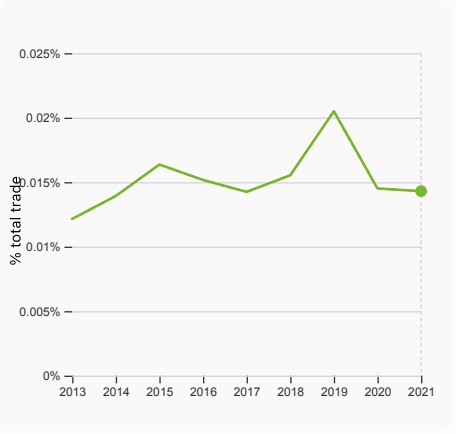
6.2.3 Software spending, % GDP

was equal to 0.606% GDP in 2022, up by 0.34 percentage points from the year prior – and equivalent to an indicator rank of 16.



6.2.4 High-tech manufacturing, %

was equal to 28.62% of total manufacturing output in 2019, down by 0.93 percentage points from the year prior – and equivalent to an indicator rank of 44.



6.3.1 Intellectual property receipts, % total trade

was equal to 0.014% total trade in 2021, down by 0.00021 percentage points from the year prior – and equivalent to an indicator rank of 88.

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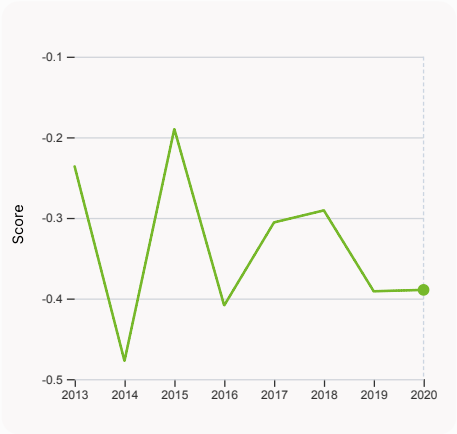
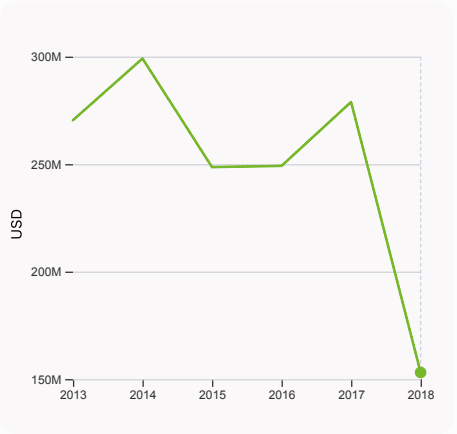


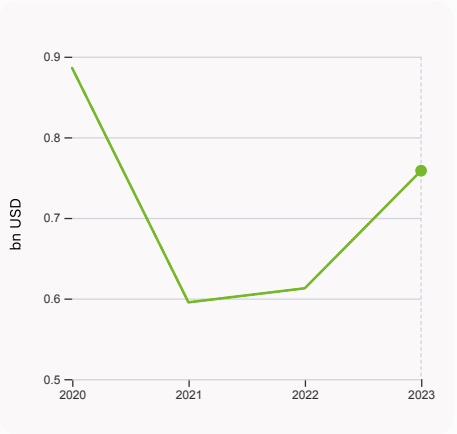
6.3.2 Production and export complexity

was equal to a score of -0.389 in 2020, up by 0.44% from the year prior – and equivalent to an indicator rank of 84.



6.3.3 High-tech exports

was equal to 153,101,895 USD in 2018, down by 45.11% from the year prior – and equivalent to an indicator rank of 109.

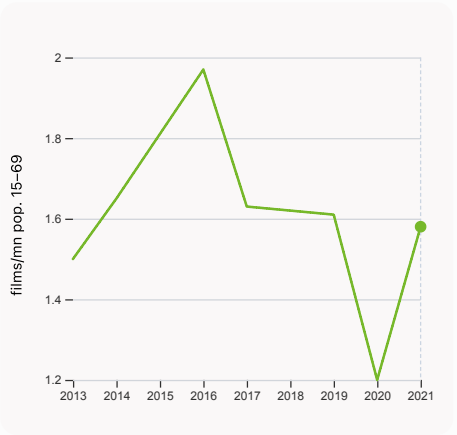


7.1.3 Global brand value, top 5,000

was equal to 0.759 bn USD in 2023, up by 23.81% from the year prior – and equivalent to an indicator rank of 73.

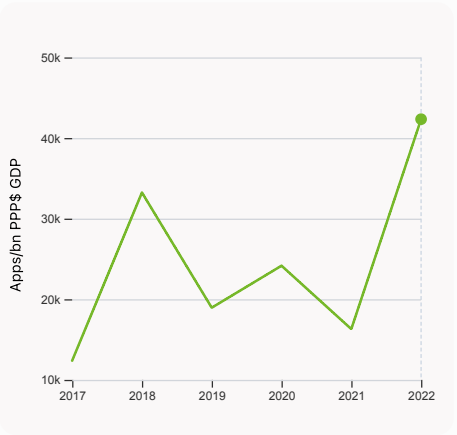
7.2.1 Cultural and creative services exports

was equal to 114,393,000 USD in 2021, up by 34.74% from the year prior – and equivalent to an indicator rank of 74.



7.2.2 National feature films/mn pop. 15-69

was equal to 1.58 films/mn pop. 15–69 in 2021, up by 31.67% from the year prior – and equivalent to an indicator rank of 52.



7.3.4 Mobile app creation/bn PPP$ GDP

was equal to 42,338.44 Apps/bn PPP$ GDP in 2022, up by 159.65% from the year prior – and equivalent to an indicator rank of 91.

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→ Iran (Islamic Republic of)'s innovation top performers

> 2.3.4 QS university ranking of Iran (Islamic Republic of)’s top universities

Rank	University	Score
380	SHARIF UNIVERSITY OF TECHNOLOGY	29.60
443	AMIRKABIR UNIVERSITY OF TECHNOLOGY	26.30
501-510	UNIVERSITY OF TEHRAN	24.10

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".

> 7.1.3 Top 5,000 companies in Iran (Islamic Republic of) with highest global brand value

Rank	Brand	Industry	Brand Value, mn USD
1	BANK PASARGAD	Banking	758.6

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

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Iran (Islamic Republic of)

GII 2023 rank **62**

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
48	87	Lower middle	CSA	88.6	1,599.3	18,663.2

	Score / Value	Rank	
Institutions	**20.6**	**131**	◇
1.1 Institutional environment	**15.2**	**127**	◇
1.1.1 Operational stability for businesses*	17.4	126	○ ◇
1.1.2 Government effectiveness*	13.1	121	
1.2 Regulatory environment	**38.0**	**121**	
1.2.1 Regulatory quality*	0.0	132	○ ◇
1.2.2 Rule of law*	12.0	118	
1.2.3 Cost of redundancy dismissal	23.1	100	
1.3 Business environment	**8.7**	**128**	◇
1.3.1 Policies for doing business†	13.7	124	○ ◇
1.3.2 Entrepreneurship policies and culture†	3.6	83	○ ◇
Human capital and research	**32.6**	**60**	
2.1 Education	**41.5**	**96**	
2.1.1 Expenditure on education, % GDP	3.2	100	
2.1.2 Government funding/pupil, secondary, % GDP/cap	16.0	72	
2.1.3 School life expectancy, years	14.6	64	
2.1.4 PISA scales in reading, maths and science	n/a	n/a	
2.1.5 Pupil-teacher ratio, secondary	19.0	96	
2.2 Tertiary education	**41.8**	**31**	
2.2.1 Tertiary enrolment, % gross	58.2	55	
2.2.2 Graduates in science and engineering, %	39.0	3	●
2.2.3 Tertiary inbound mobility, %	0.8	96	
2.3 Research and development (R&D)	**14.5**	**49**	
2.3.1 Researchers, FTE/mn pop.	1,659.5	45	
2.3.2 Gross expenditure on R&D, % GDP	0.8	46	
2.3.3 Global corporate R&D investors, top 3, mn US$	0.0	40	○ ◇
2.3.4 QS university ranking, top 3*	27.0	44	
Infrastructure	**29.3**	**97**	
3.1 Information and communication technologies (ICTs)	**51.2**	**97**	
3.1.1 ICT access*	77.5	80	
3.1.2 ICT use*	75.3	61	
3.1.3 Government's online service*	35.9	115	
3.1.4 E-participation*	16.3	127	○ ◇
3.2 General infrastructure	**25.0**	**74**	
3.2.1 Electricity output, GWh/mn pop.	3,867.6	58	
3.2.2 Logistics performance*	9.1	106	○
3.2.3 Gross capital formation, % GDP	40.1	9	●
3.3 Ecological sustainability	**11.8**	**120**	
3.3.1 GDP/unit of energy use	4.7	118	◇
3.3.2 Environmental performance*	26.4	95	
3.3.3 ISO 14001 environment/bn PPP$ GDP	0.2	108	
Market sophistication	**52.9**	**19**	
4.1 Credit	**27.7**	**70**	
4.1.1 Finance for startups and scaleups†	33.8	61	
4.1.2 Domestic credit to private sector, % GDP	60.3	59	
4.1.3 Loans from microfinance institutions, % GDP	n/a	n/a	
4.2 Investment	**83.3**	**3**	
4.2.1 Market capitalization, % GDP	221.5	5	●
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	**47.8**	**90**	
4.3.1 Applied tariff rate, weighted avg., %	12.1	126	◇
4.3.2 Domestic industry diversification	87.3	59	
4.3.3 Domestic market scale, bn PPP$	1,599.3	20	●

	Score / Value	Rank	
Business sophistication	**17.7**	**117**	
5.1 Knowledge workers	**18.8**	**102**	
5.1.1 Knowledge-intensive employment, %	19.9	76	
5.1.2 Firms offering formal training, %	n/a	n/a	
5.1.3 GERD performed by business, % GDP	0.2	53	
5.1.4 GERD financed by business, %	n/a	n/a	
5.1.5 Females employed w/advanced degrees, %	7.6	85	
5.2 Innovation linkages	**11.4**	**113**	
5.2.1 University-industry R&D collaboration†	12.2	124	○ ◇
5.2.2 State of cluster development†	33.1	87	
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	126	○ ◇
5.2.5 Patent families/bn PPP$ GDP	0.0	85	
5.3 Knowledge absorption	**22.9**	**116**	
5.3.1 Intellectual property payments, % total trade	0.2	89	
5.3.2 High-tech imports, % total trade	5.1	114	
5.3.3 ICT services imports, % total trade	0.7	96	
5.3.4 FDI net inflows, % GDP	0.5	112	
5.3.5 Research talent, % in businesses	19.2	54	
Knowledge and technology outputs	**25.9**	**55**	
6.1 Knowledge creation	**32.0**	**29**	
6.1.1 Patents by origin/bn PPP$ GDP	7.0	13	●
6.1.2 PCT patents by origin/bn PPP$ GDP	0.2	41	
6.1.3 Utility models by origin/bn PPP$ GDP	n/a	n/a	
6.1.4 Scientific and technical articles/bn PPP$ GDP	n/a	n/a	
6.1.5 Citable documents H-index	23.4	40	●
6.2 Knowledge impact	**35.2**	**40**	
6.2.1 Labor productivity growth, %	0.4	82	
6.2.2 Unicorn valuation, % GDP	0.0	48	○ ◇
6.2.3 Software spending, % GDP	0.6	16	●
6.2.4 High-tech manufacturing, %	28.6	44	
6.3 Knowledge diffusion	**10.5**	**107**	
6.3.1 Intellectual property receipts, % total trade	0.0	88	
6.3.2 Production and export complexity	44.4	84	
6.3.3 High-tech exports, % total trade	0.2	109	
6.3.4 ICT services exports, % total trade	0.2	122	
6.3.5 ISO 9001 quality/bn PPP$ GDP	1.0	108	
Creative outputs	**33.1**	**43**	
7.1 Intangible assets	**55.7**	**13**	
7.1.1 Intangible asset intensity, top 15, %	n/a	n/a	
7.1.2 Trademarks by origin/bn PPP$ GDP	349.8	1	●
7.1.3 Global brand value, top 5,000	0.0	73	
7.1.4 Industrial designs by origin/bn PPP$ GDP	9.6	11	●
7.2 Creative goods and services	**4.3**	**90**	
7.2.1 Cultural and creative services exports, % total trade	0.2	74	
7.2.2 National feature films/mn pop. 15-69	1.6	52	
7.2.3 Entertainment and media market/th pop. 15-69	2.8	51	
7.2.4 Creative goods exports, % total trade	0.1	96	
7.3 Online creativity	**16.8**	**86**	
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	2.0	85	
7.3.2 Country-code TLDs/th pop. 15-69	6.9	47	
7.3.3 GitHub commits/mn pop. 15-69	1.6	105	
7.3.4 Mobile app creation/bn PPP$ GDP	56.6	91	

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/gii-ranking. Square brackets [ ] indicate that the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level.

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→ Data availability

The following tables list indicators that are either missing or outdated for Iran (Islamic Republic of).

> Iran (Islamic Republic of) has missing data for ten indicators and outdated data for eighteen indicators.

> Missing data for Iran (Islamic Republic of)

Code	Indicator name	Economy Year	Model Year	Source
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD, PISA
4.1.3	Loans from microfinance institutions, % GDP	n/a	2021	International Monetary Fund, Financial Access Survey (FAS)
4.2.2	Venture capital (VC) investors, deals/bn PPP$ GDP	n/a	2022	Refinitiv; International Monetary Fund
4.2.3	VC recipients, deals/bn PPP$ GDP	n/a	2022	Refinitiv; International Monetary Fund
4.2.4	VC received, value, % GDP	n/a	2022	Refinitiv; International Monetary Fund
5.1.2	Firms offering formal training, %	n/a	2019	World Bank Enterprise Surveys
5.1.4	GERD financed by business, %	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.2.3	GERD financed by abroad, % GDP	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2021	World Intellectual Property Organization; International Monetary Fund
7.1.1	Intangible asset intensity, top 15, %	n/a	2022	Brand Finance

> Outdated data for Iran (Islamic Republic of)

Code	Indicator name	Economy Year	Model Year	Source
1.3.1	Policies for doing business	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
2.1.1	Expenditure on education, % GDP	2020	2021	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2017	2020	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2019	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT

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Code	Indicator name	Economy Year	Model Year	Source
2.3.2	Gross expenditure on R&D, % GDP	2019	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
3.2.1	Electricity output, GWh/mn pop.	2020	2021	International Energy Agency
4.1.2	Domestic credit to private sector, % GDP	2016	2020	International Monetary Fund; World Bank and OECD GDP estimates.
4.3.2	Domestic industry diversification	2019	2020	United Nations Industrial Development Organization
5.1.1	Knowledge-intensive employment, %	2021	2022	International Labour Organization
5.1.3	GERD performed by business, % GDP	2017	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.5	Females employed w/advanced degrees, %	2021	2022	International Labour Organization
5.2.1	University-industry R&D collaboration	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.2.2	State of cluster development	2021	2022	World Economic Forum, Executive Opinion Survey (EOS)
5.3.2	High-tech imports, % total trade	2018	2021	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development
5.3.5	Research talent, % in businesses	2017	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.2.4	High-tech manufacturing, %	2019	2020	United Nations Industrial Development Organization
6.3.3	High-tech exports, % total trade	2018	2021	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development; Trade Data Monitor.
7.2.4	Creative goods exports, % total trade	2018	2021	United Nations Comtrade Database; World Trade Organization and United Nations Conference on Trade and Development

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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 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, 2023.

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.