GLOBAL INNOVATION INDEX 2020

ISRAEL

13th Israel ranks 13th among the 131 economies featured in the GII 2020.

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

The following table shows the rankings of Israel over the past three years, noting that data availability and changes to the GII model framework influence year-on-year comparisons of the GII rankings. The statistical confidence interval for the ranking of Israel in the GII 2020 is between ranks 11 and 16.

Rankings of Israel (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	13	17	13
2019	10	17	8
2018	11	19	11

- Israel performs better in innovation outputs than innovation inputs in 2020.
- This year Israel ranks 17th in innovation inputs, the same as last year and higher compared to 2018.
- As for innovation outputs, Israel ranks 13th. This position is lower than last year and lower compared to 2018.

13th Israel ranks 13th among the 49 high-income group economies.

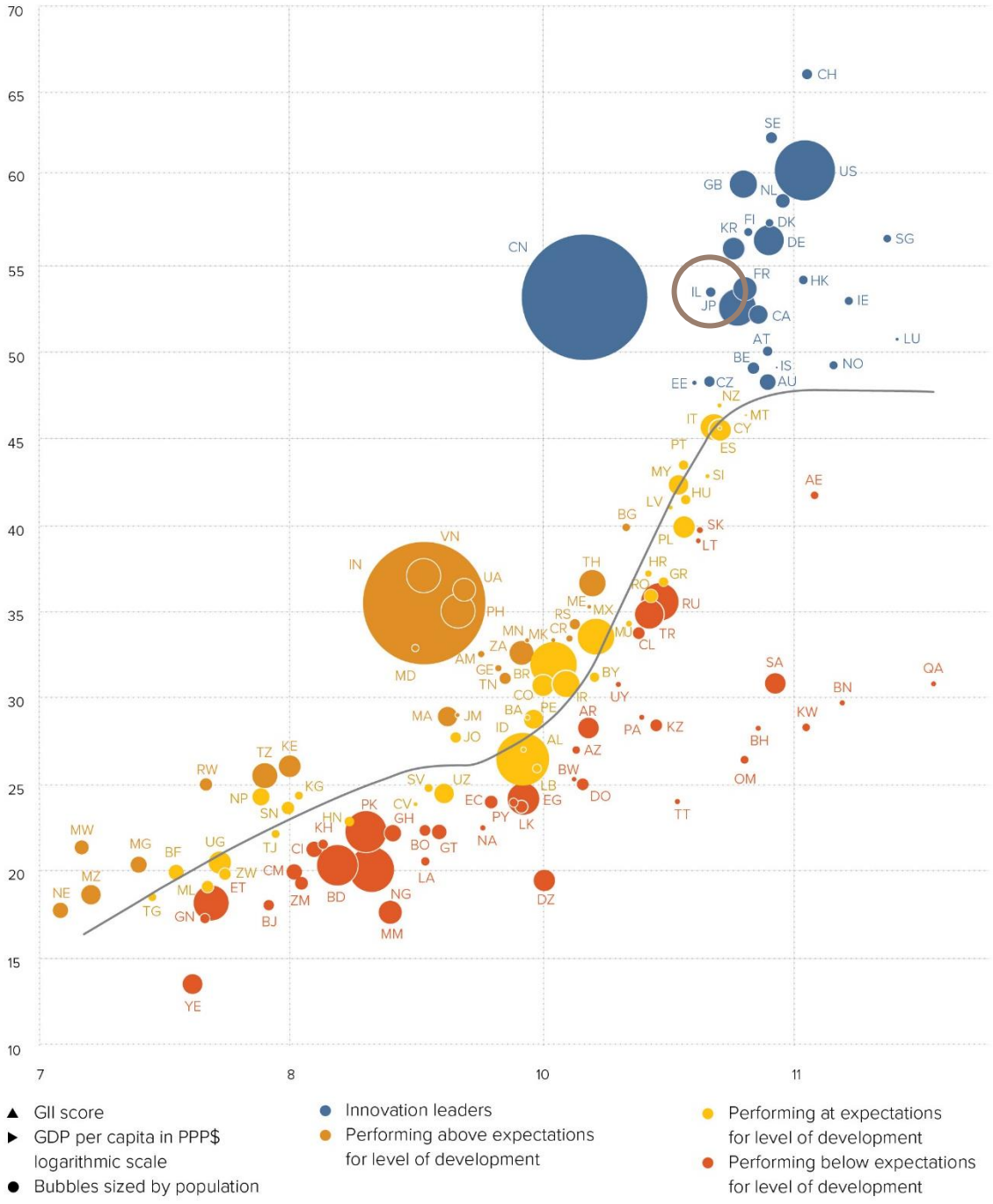
1st Israel ranks 1st among the 19 economies in Northern Africa and Western Asia.

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, Israel is performing above expectations for its level of development.

The positive relationship between innovation and development

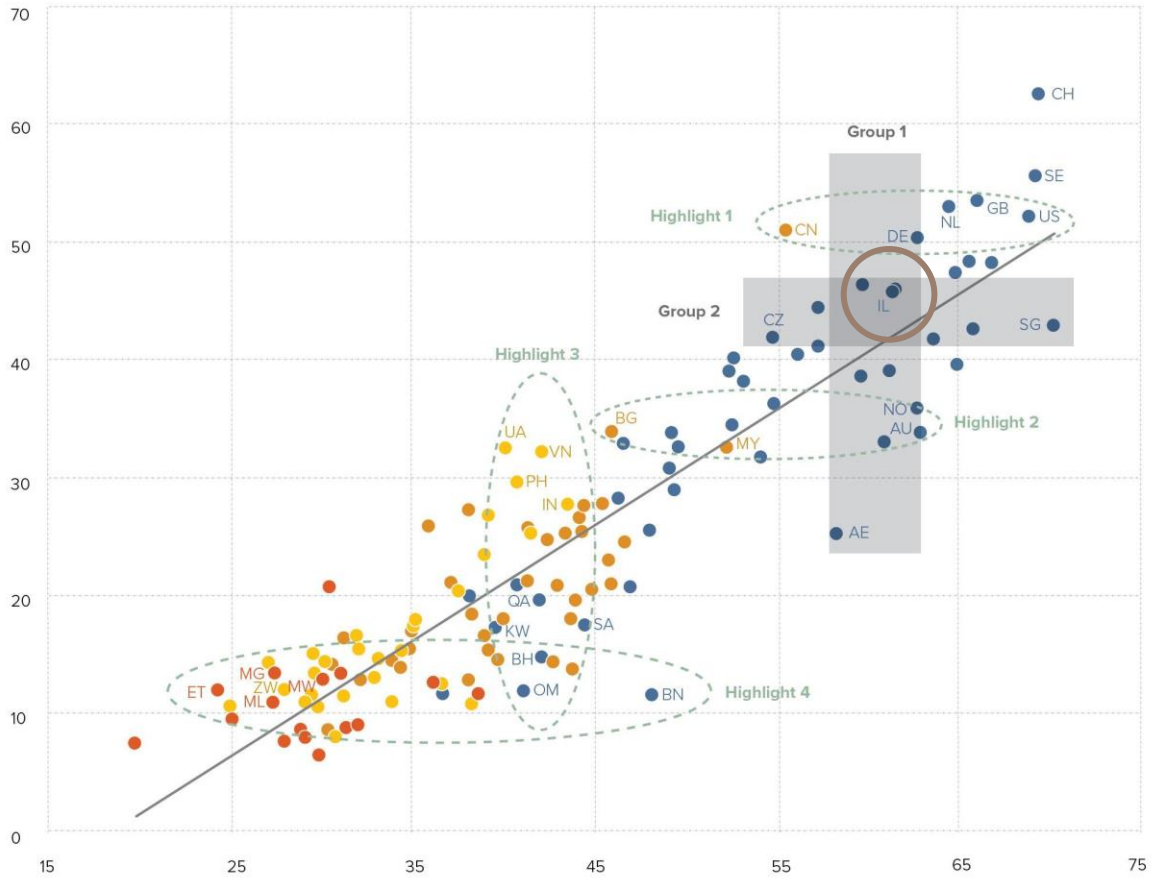


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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

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

Innovation input to output performance, 2020



▲ Output score
► Input score

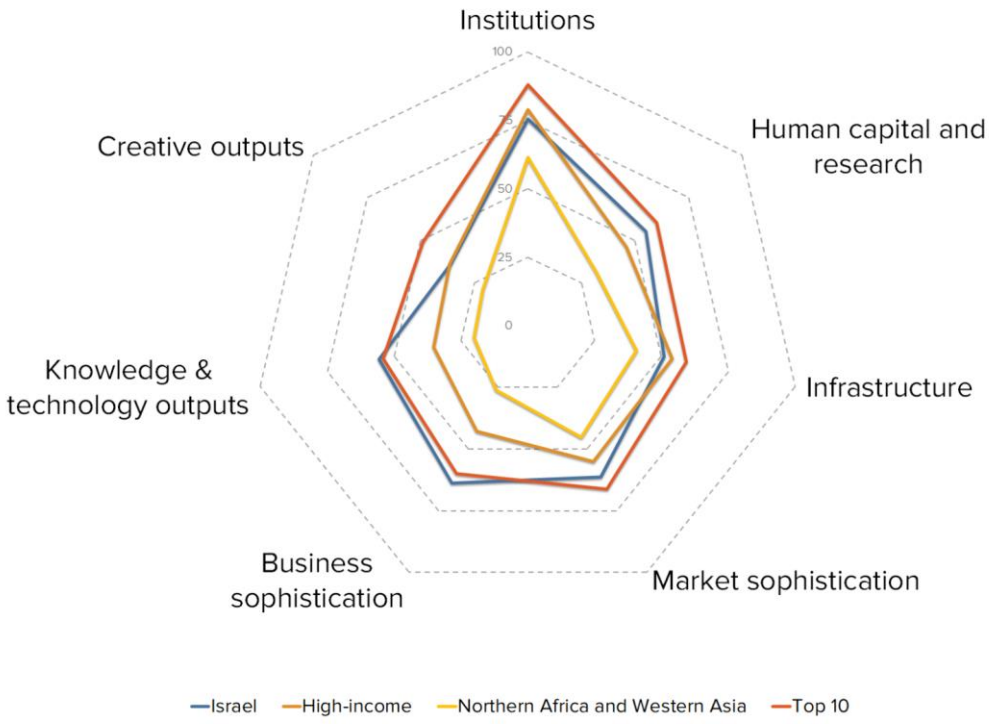
● High income group
● Upper middle-income group
● Lower middle-income group
● Low income group

— Fitted values

AU	Australia	IN	India	NL	Netherlands	CH	Switzerland
BH	Bahrain	IL	Israel	NO	Norway	UA	Ukraine
BN	Brunei Darussalam	KW	Kuwait	OM	Oman	AE	United Arab Emirates
BG	Bulgaria	MG	Madagascar	PH	Philippines	GB	United Kingdom
CN	China	MW	Malawi	QA	Qatar	US	United States of America
CZ	Czech Republic	ML	Mali	SA	Saudi Arabia	VN	Viet Nam
ET	Ethiopia	MY	Malaysia	SG	Singapore	ZW	Zimbabwe
DE	Germany			SE	Sweden		

BENCHMARKING ISRAEL AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND NORTHERN AFRICA AND WESTERN ASIA

Israel's scores in the seven GII pillars



High-income group economies

Israel has high scores in four out of the seven GII pillars: Human capital & research, Market sophistication, Business sophistication and Knowledge & technology outputs, which are above average for the high-income group.

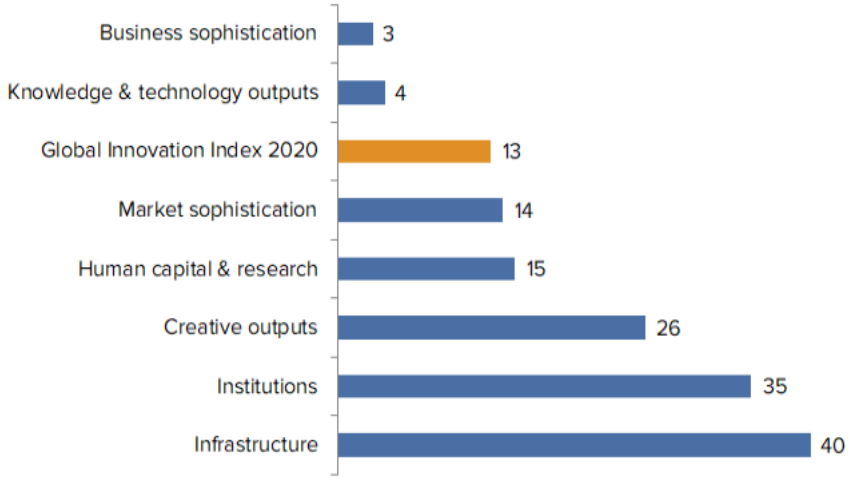
Conversely, Israel scores below average for its income group in three pillars: Institutions, Infrastructure and Creative outputs.

Northern Africa and Western Asia

Compared to other economies in Northern Africa and Western Asia, Israel performs above average in all seven of the GII pillars.

OVERVIEW OF ISRAEL RANKINGS IN THE SEVEN GII AREAS

Israel performs best in Business sophistication and its weakest performance is in Infrastructure.



*The highest possible ranking in each pillar is 1.

INNOVATION STRENGTHS AND WEAKNESSES

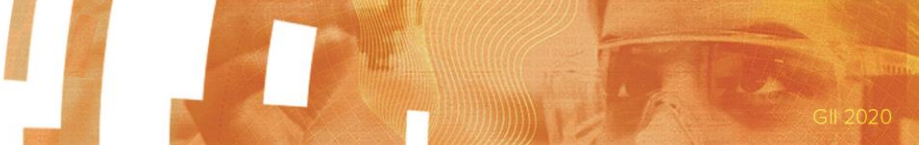
The table below gives an overview of the strengths and weaknesses of Israel in the GII 2020.

Strengths

Code	Indicator name	Rank
2.3	Research & development (R&D)	3
2.3.1	Researchers, FTE/mn pop.	1
2.3.2	Gross expenditure on R&D, % GDP	1
5	Business sophistication	3
5.1.3	GERD performed by business, % GDP	1
5.2	Innovation linkages	1
5.2.1	University/industry research collaboration†	1
5.2.3	GERD financed by abroad, % GDP	1
5.3.5	Research talent, % in business enterprise	1
6	Knowledge & technology outputs	4
6.3	Knowledge diffusion	2
6.3.3	ICT services exports, % total trade	1
7.2.1	Cultural & creative services exports, % total trade	4
7.3.3	Wikipedia edits/mn pop. 15–69	3
7.3.4	Mobile app creation/bn PPP$ GDP	1

Weaknesses

Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal, salary weeks	113
2.1.2	Government funding/pupil, secondary, % GDP/cap	57
2.1.4	PISA scales in reading, maths & science	39
2.2	Tertiary education	59
2.2.3	Tertiary inbound mobility, %	68
3.2.3	Gross capital formation, % GDP	81
4.1.1	Ease of getting credit*	44
5.1.2	Firms offering formal training, %	76
5.1.4	GERD financed by business, %	49
5.3.1	Intellectual property payments, % total trade	65
7.1	Intangible assets	65
7.1.1	Trademarks by origin/bn PPP$ GDP	105



STRENGTHS

GII strengths for Israel are found in four of the seven GII pillars.

- Human capital & research (15): shows strengths in the sub-pillar Research & development (R&D) (3) and in the indicators Researchers (1) and Gross expenditure on R&D (1).
- Business sophistication (3): displays strengths in the sub-pillar Innovation linkages (1) and in the indicators GERD performed by business (1), University/industry research collaboration (1), GERD financed by abroad (1) and Research talent in business enterprises (1).
- Knowledge & technology outputs (4): reveals strengths in the sub-pillar Knowledge diffusion (2) and in the indicator ICT services exports (1).
- Creative outputs (26): demonstrates strengths in the indicators Cultural & creative services exports (4), Wikipedia edits (3) and Mobile app creation (1).

WEAKNESSES

GII weaknesses for Israel are found in six of the seven GII pillars.

- Institutions (35): the indicator Cost of redundancy dismissal (113) is a weakness.
- Human capital & research (15): exhibits weaknesses in the sub-pillar Tertiary education (59) and in the indicators Government funding/pupil (57), PISA scales in reading, maths & science (39) and Tertiary inbound mobility (68).
- Infrastructure (40): the indicator Gross capital formation (81) is a weakness.
- Market sophistication (14): the indicator Ease of getting credit (44) demonstrates a weakness.
- Business sophistication (3): shows weaknesses in the indicators Firms offering formal training (76), GERD financed by business (49) and Intellectual property payments (65).
- Creative outputs (26): reveals weaknesses in the sub-pillar Intangible assets (65) and in the indicator Trademarks by origin (105).

ISRAEL

GII 2020 rank

13

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$	GDP per capita, PPP$	GII 2019 rank
13	17	High	NAWA	8.5	354.2	34,153.8	10

		Score/Value	Rank	
	INSTITUTIONS	**75.6**	**35**	◇
1.1	**Political environment**	**75.8**	**32**	◇
1.1.1	Political and operational stability*	73.2	49	◇
1.1.2	Government effectiveness*	77.1	24	◇
1.2	**Regulatory environment**	**67.6**	**57**	◇
1.2.1	Regulatory quality*	74.7	24	
1.2.2	Rule of law*	72.6	29	◇
1.2.3	Cost of redundancy dismissal, salary weeks	27.4	113	○ ◇
1.3	**Business environment**	**83.4**	**24**	
1.3.1	Ease of starting a business*	94.1	26	
1.3.2	Ease of resolving insolvency*	72.7	27	
	HUMAN CAPITAL & RESEARCH	**55.1**	**15**	
2.1	**Education**	**53.5**	**43**	
2.1.1	Expenditure on education, % GDP ⊙	5.8	17	
2.1.2	Government funding/pupil, secondary, % GDP/cap	18.7	57	○
2.1.3	School life expectancy, years	16.2	30	
2.1.4	PISA scales in reading, maths, & science	465.2	39	○ ◇
2.1.5	Pupil-teacher ratio, secondary ⊙	9.8	30	
2.2	**Tertiary education**	**34.7**	**59**	○
2.2.1	Tertiary enrolment, % gross	63.4	42	
2.2.2	Graduates in science & engineering, %	n/a	n/a	
2.2.3	Tertiary inbound mobility, % ⊙	2.8	68	○ ◇
2.3	**Research & development (R&D)**	**77.0**	**3**	● ◆
2.3.1	Researchers, FTE/mn pop ⊙	8,341.7	1	● ◆
2.3.2	Gross expenditure on R&D, % GDP	4.9	1	● ◆
2.3.3	Global R&D companies, avg. exp. top 3, mn $US	65.8	21	
2.3.4	QS university ranking, average score top 3*	42.2	29	
	INFRASTRUCTURE	**51.1**	**40**	◇
3.1	**Information & communication technologies (ICTs)**	**80.7**	**31**	◇
3.1.1	ICT access*	79.7	28	
3.1.2	ICT use*	77.4	26	
3.1.3	Government's online service*	82.6	39	◇
3.1.4	E-participation*	83.2	43	◇
3.2	**General infrastructure**	**31.5**	**43**	◇
3.2.1	Electricity output, kWh/mn pop	7,768.4	26	
3.2.2	Logistics performance*	58.1	36	◇
3.2.3	Gross capital formation, % GDP	21.7	81	○
3.3	**Ecological sustainability**	**41.0**	**36**	
3.3.1	GDP/unit of energy use	12.8	26	
3.3.2	Environmental performance*	65.8	29	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	2.2	38	
	MARKET SOPHISTICATION	**61.4**	**14**	
4.1	**Credit**	**49.3**	**38**	
4.1.1	Ease of getting credit*	70.0	44	○
4.1.2	Domestic credit to private sector, % GDP	66.7	49	◇
4.1.3	Microfinance gross loans, % GDP	n/a	n/a	
4.2	**Investment**	**64.1**	**12**	
4.2.1	Ease of protecting minority investors*	78.0	18	
4.2.2	Market capitalization, % GDP	61.0	25	
4.2.3	Venture capital deals/bn PPP$ GDP	0.5	5	◆
4.3	**Trade, competition, and market scale**	**70.7**	**33**	
4.3.1	Applied tariff rate, weighted avg., % ⊙	1.9	54	
4.3.2	Intensity of local competition+	75.4	24	
4.3.3	Domestic market scale, bn PPP$	354.2	51	

		Score/Value	Rank	
	BUSINESS SOPHISTICATION	**63.7**	**3**	● ◆
5.1	**Knowledge workers**	**61.4**	**12**	
5.1.1	Knowledge-intensive employment, % ⊙	48.4	8	
5.1.2	Firms offering formal training, % ⊙	18.6	76	○ ◇
5.1.3	GERD performed by business, % GDP	4.4	1	● ◆
5.1.4	GERD financed by business, %	35.8	49	○ ◇
5.1.5	Females employed w/advanced degrees, % ⊙	22.3	23	
5.2	**Innovation linkages**	**81.6**	**1**	● ◆
5.2.1	University/industry research collaboration+	78.5	1	● ◆
5.2.2	State of cluster development+	56.8	31	◇
5.2.3	GERD financed by abroad, % GDP	2.5	1	● ◆
5.2.4	JV-strategic alliance deals/bn PPP$ GDP	0.3	5	◆
5.2.5	Patent families 2+ offices/bn PPP$ GDP	5.9	8	
5.3	**Knowledge absorption**	**48.2**	**18**	
5.3.1	Intellectual property payments, % total trade	0.5	65	○ ◇
5.3.2	High-tech imports, % total trade	9.9	35	
5.3.3	ICT services imports, % total trade	2.0	29	
5.3.4	FDI net inflows, % GDP	4.8	27	
5.3.5	Research talent, % in business enterprise ⊙	83.7	1	● ◆
	KNOWLEDGE & TECHNOLOGY OUTPUTS	**55.6**	**4**	●
6.1	**Knowledge creation**	**52.9**	**12**	
6.1.1	Patents by origin/bn PPP$ GDP	4.5	25	
6.1.2	PCT patents by origin/bn PPP$ GDP	5.7	6	
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	n/a	
6.1.4	Scientific & technical articles/bn PPP$ GDP	24.9	16	
6.1.5	Citable documents H-index	47.4	16	
6.2	**Knowledge impact**	**40.9**	**17**	
6.2.1	Growth rate of PPP$ GDP/worker, %	1.6	53	
6.2.2	New businesses/th pop. 15-64	3.3	42	
6.2.3	Computer software spending, % GDP	0.0	57	◇
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	23.3	7	◆
6.2.5	High- and medium-high-tech manufacturing, % ⊙	41.3	22	
6.3	**Knowledge diffusion**	**72.9**	**2**	● ◆
6.3.1	Intellectual property receipts, % total trade	1.8	14	
6.3.2	High-tech net exports, % total trade	11.9	14	
6.3.3	ICT services exports, % total trade	13.2	1	● ◆
6.3.4	FDI net outflows, % GDP	2.7	25	
	CREATIVE OUTPUTS	**35.9**	**26**	◇
7.1	**Intangible assets**	**27.6**	**65**	○ ◇
7.1.1	Trademarks by origin/bn PPP$ GDP	12.3	105	○ ◇
7.1.2	Global brand value, top 5,000, % GDP	21.2	46	◇
7.1.3	Industrial designs by origin/bn PPP$ GDP	2.9	38	
7.1.4	ICTs & organizational model creation+	77.0	12	
7.2	**Creative goods and services**	**30.8**	**24**	
7.2.1	Cultural & creative services exports, % total trade	2.6	4	● ◆
7.2.2	National feature films/mn pop. 15-69	5.3	41	
7.2.3	Entertainment & Media market/th pop. 15-69	35.0	21	◇
7.2.4	Printing and other media, % manufacturing ⊙	1.2	41	
7.2.5	Creative goods exports, % total trade	1.6	34	
7.3	**Online creativity**	**57.6**	**13**	
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	21.9	26	◇
7.3.2	Country-code TLDs/th pop. 15-69	13.8	34	◇
7.3.3	Wikipedia edits/mn pop. 15-69	94.9	3	● ◆
7.3.4	Mobile app creation/bn PPP$ GDP	100.0	1	● ◆

NOTES: ● indicates a strength; ○ a weakness; ◆ a strength relative to the other top 25-ranked GII economies; ◇ a weakness relative to the other top 25-ranked GII economies; * an index; + a survey question. ⊙ indicates that the economy's data are older than the base year; see Appendix II for details, including the year of the data, at http://globalinnovationindex.org. Square brackets [ ] indicate that the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level.

DATA AVAILABILITY

The following tables list data that are either missing or outdated for Israel.

Missing data

Code	Indicator name	Country year	Model year	Source
2.2.2	Graduates in science & engineering, %	n/a	2017	UNESCO Institute for Statistics
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2018	World Intellectual Property Organization

Outdated data

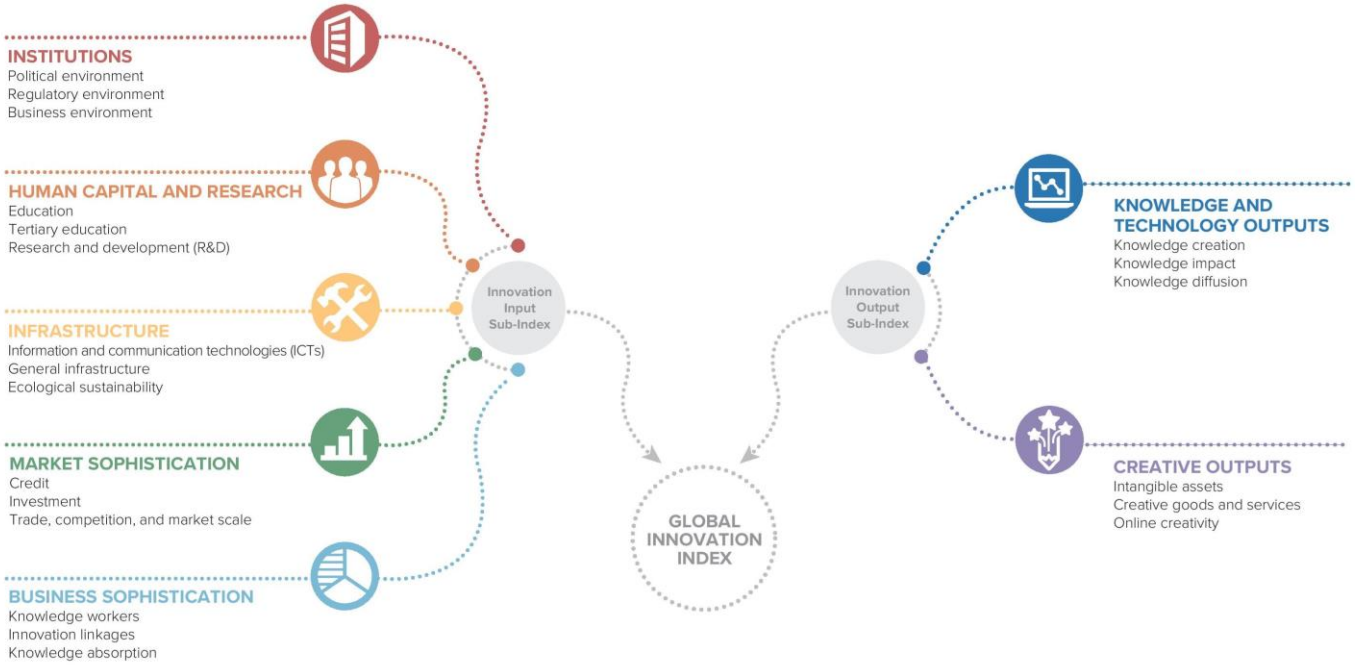
Code	Indicator name	Country year	Model year	Source
2.1.1	Expenditure on education, % GDP	2016	2018	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2009	2018	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2014	2017	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2012	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
4.3.1	Applied tariff rate, weighted avg., %	2017	2018	World Bank
5.1.1	Knowledge-intensive employment, %	2017	2018	International Labour Organization
5.1.2	Firms offering formal training, %	2012	2018	World Bank
5.1.5	Females employed w/advanced degrees, %	2016	2018	International Labour Organization
5.3.5	Research talent, % in business enterprise	2012	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
6.2.5	High- & medium-high-tech manufacturing, %	2016	2017	United Nations Industrial Development Organization
7.2.4	Printing & other media, % manufacturing	2016	2017	United Nations Industrial Development Organization

ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. In 2020, the GII presents its 13th edition devoted to the theme *Who Will Finance Innovation?*

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.

Framework of the Global Innovation Index 2020



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.