GLOBAL INNOVATION INDEX 2019

GEORGIA

48th Georgia ranks 48th among the 129 economies featured in the GII 2019.

The Global Innovation Index (GII) is a ranking of world economies based on 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 Georgia over the past three years, noting that data availability and the GII model influence year-on-year comparisons of the GII ranks. The confidence interval for Georgia's ranking in the GII 2019 is between 47 and 59.

Georgia's Rankings, 2017 - 2019

	GII	Innovation Inputs	Innovation Outputs
2019	48	44	60
2018	59	53	62
2017	68	69	62

- Georgia performs better in Innovation Inputs than Outputs in 2019.
- This year Georgia ranks 44th in Innovation Inputs, better than last year and compared to 2017.
- As for Innovation Outputs, Georgia ranks 60th. This position is better than last year and compared to 2017.

3rd Georgia ranks 3rd among the 26 lower middle-income economies.

4th Georgia ranks 4th among the 19 economies in Northern Africa and Western Asia.

Georgia breaks into the top 50 and gains several positions in the GII ranking this year. Between 2018 and 2019, the rank increase for Georgia is a mix of improved performance and new innovation data becoming available (page 9).

Its most notable gains this year include indicators such as Patent families in two or more offices, High-technology imports, Exports of Information and communication (ICT) services, and Industrial designs by origin.

Georgia ranks in the top 10 in a number of indicators such as Ease of starting a business, Pupil-teacher ratio, Ease of protecting minority investors, and Labor productivity growth (pages 6 and 7).

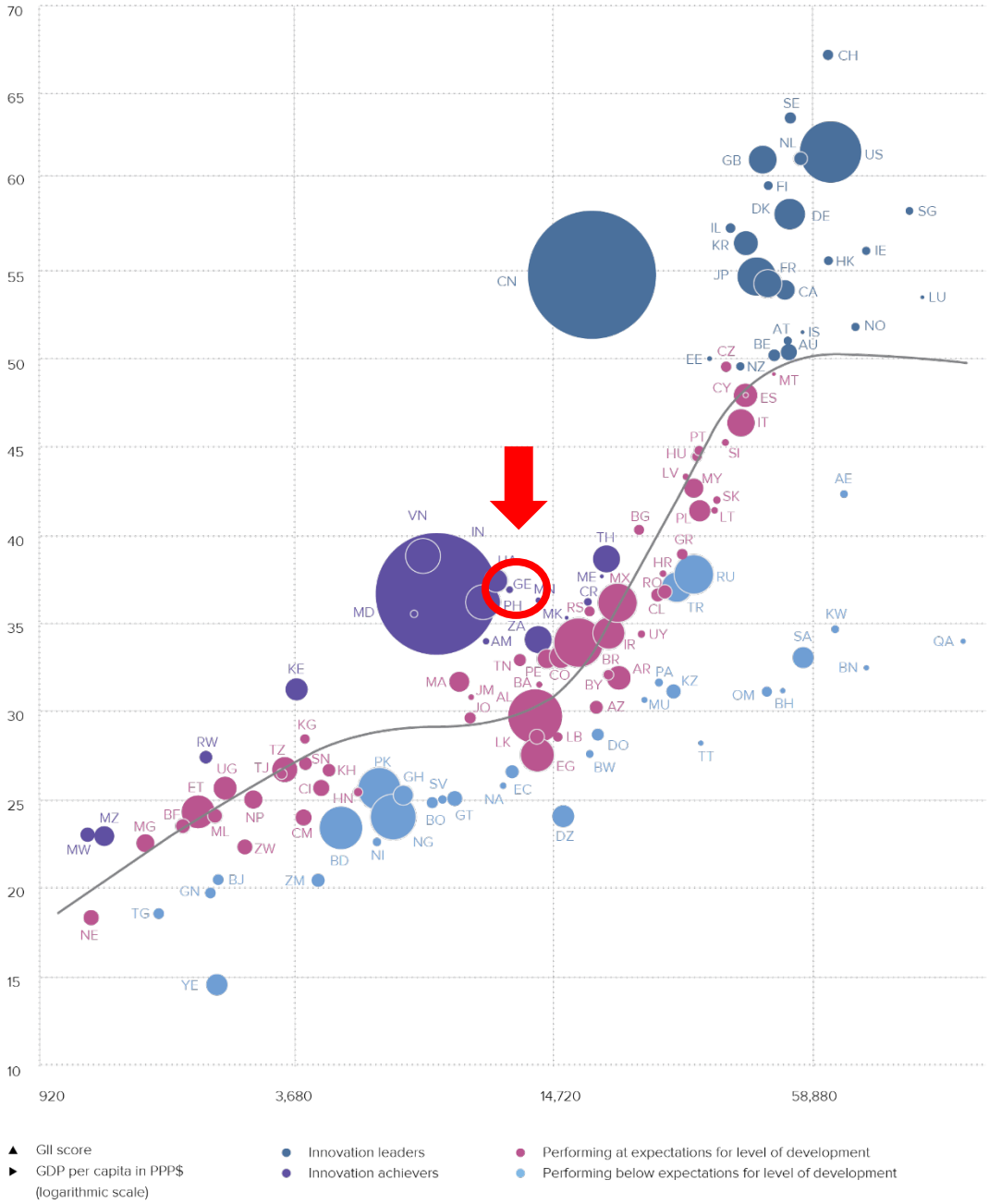
Despite this progress, the country presents a number of weak areas, among which PISA results in reading, maths and science, Global R&D companies, Quality of universities, High- & medium-high-tech manufactures, and Intellectual property receipts (pages 6 and 7).

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 considered Innovation under-performers relative to GDP.

Relative to GDP, Georgia performs above its expected level of development.

GII scores and GDP per capita in PPP US$
(bubbles sized by population)

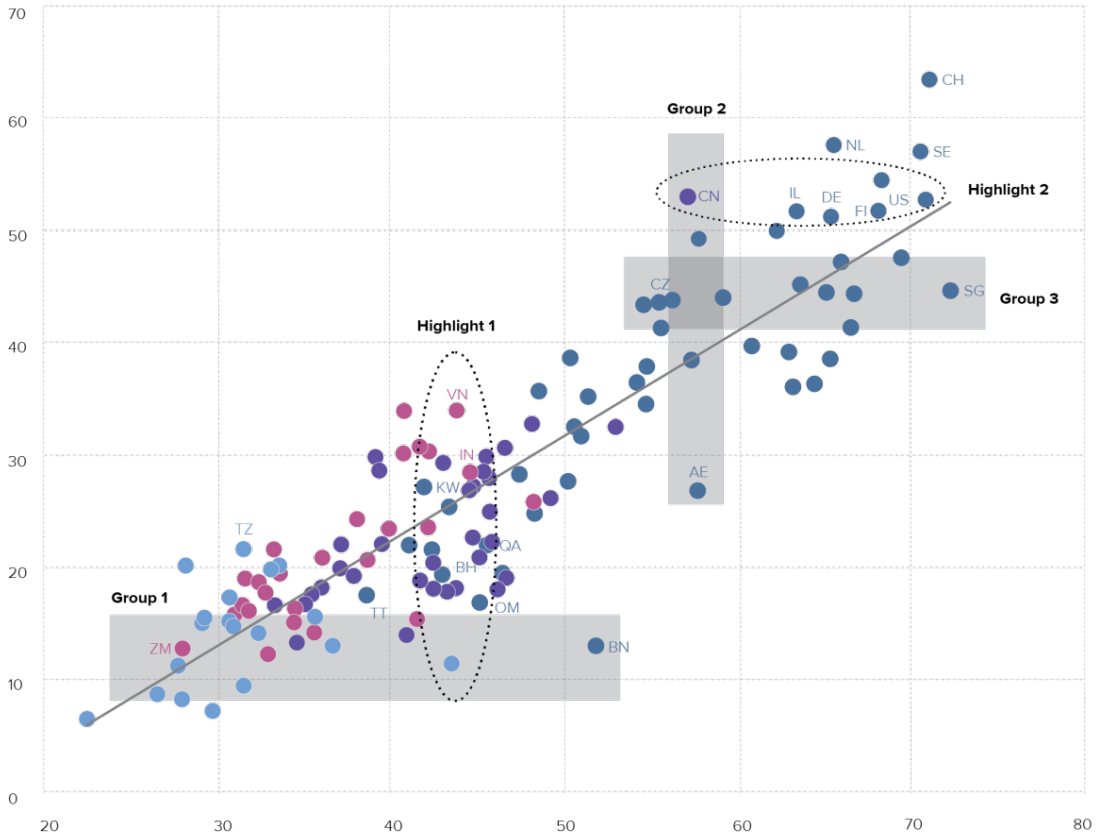


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

The chart below shows the relationship between innovation inputs and innovation outputs, indicating which economies best translate innovation inputs into innovation outputs. Economies appearing above the line are effectively translating their costly innovation investments into more and higher-quality outputs. In contrast, those below the line are not effectively translating innovation inputs into outputs.

Georgia produces less innovation outputs relative to its level of innovation investments.

Innovation input/output performance by income group, 2019



▲ Output score
▶ Input score

● High income
● Upper-middle income

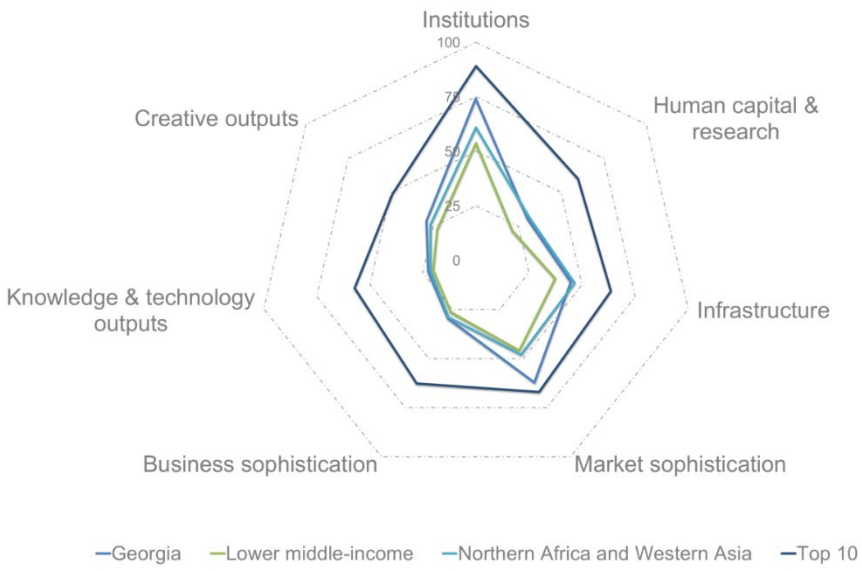
● Lower-middle income
● Low income

— Fitted values

AE	United Arab Emirates	CZ	Czech Republic	NL	Netherlands	TZ	United Republic of Tanzania
BH	Bahrain	DE	Germany	OM	Oman	US	United States of America
BN	Brunei Darussalam	FI	Finland	QA	Qatar	VN	Viet Nam
CH	Switzerland	IL	Israel	SE	Sweden	ZM	Zambia
CN	China	IN	India	SG	Singapore		
		KW	Kuwait	TT	Trinidad and Tobago		

BENCHMARKING GEORGIA TO OTHER LOWER MIDDLE-INCOME ECONOMIES AND THE NORTHERN AFRICA AND WESTERN ASIA REGION

Georgia's scores in the seven GII pillars



Lower middle-income economies

Georgia has high scores in all of the seven GII pillars, which are above the average of the lower middle-income group.

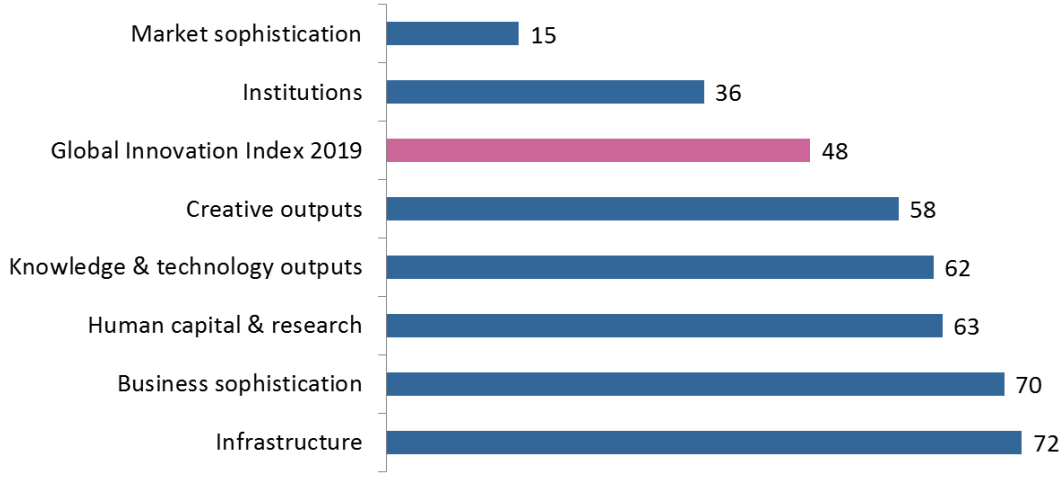
Northern Africa and Western Asia Region

Compared to other economies in the Northern Africa and Western Asia region, Georgia performs above average in four out of the seven GII pillars: Institutions, Market sophistication, Business sophistication, Knowledge & technology outputs, and Creative outputs.

Top ranks are found in all sub-pillars within Institutions - Political environment, Regulatory environment, and Business environment – as well as General infrastructure, Credit, Investment, and Intangible assets where the country ranks in the top 50 worldwide.

OVERVIEW OF GEORGIA'S RANKINGS IN THE 7 GII AREAS

Georgia performs the best in Market sophistication and its weakest performance is in Infrastructure.



*The highest possible ranking in each pillar is 1.

GEORGIA'S INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of Georgia's strengths and weaknesses in the GII 2019.

Strengths

Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal, salary weeks	17
1.3.1	Ease of starting a business*	2
2.1.5	Pupil-teacher ratio, secondary	5
3.2.3	Gross capital formation, % GDP	11
4	Market sophistication	15
4.1.1	Ease of getting credit*	11
4.2.1	Ease of protecting minority investors*	2
4.3.1	Applied tariff rate, weighted mean, %	5
5.3.4	FDI net inflows, % GDP, 3-year average	11
6.2.1	Growth rate of PPP$ GDP/worker, %, 3-year average	8
7.1.2	Industrial designs by origin/bn PPP$ GDP	12

Weaknesses

Code	Indicator name	Rank
2.1.4	PISA scales in reading, maths & science	61
2.3.3	Global R&D companies, top 3, in mn US$	43
2.3.4	QS university ranking, average score top 3*	78
3.2.2	Logistics performance*	109
4.3.3	Domestic market scale, bn PPP$	102
5.1.2	Firms offering formal training, % firms	88
5.2.2	State of cluster development†	107
6.2.5	High- & medium-high-tech manufactures, %	91
6.3.1	Intellectual property receipts, % total trade	90
7.1.4	ICTs & organizational model creation†	99

STRENGTHS

- GII strengths for Georgia are found in all the seven GII pillars.
- Pillar Market sophistication (15) is a notable GII strength for Georgia.
- In Market sophistication (15), additional strengths are indicators Ease of getting credit (11), Ease of protecting minority investors (2), and Applied tariff rate (5).
- In Institutions (36), Georgia's strengths are indicators Cost of redundancy dismissal (17) and Ease of starting a business (2).
- In Human capital & research (63), indicator Pupil-teacher ratio (5) is a relative strength for the country.
- In Infrastructure (72), Georgia's strength is indicator Gross capital formation (11).
- In Business sophistication (70), FDI inflows (11) is a GII strength for this country.
- On the output side of the GII, only two strengths are found: indicator Labor productivity growth (8) in Knowledge & technology outputs (62) and indicator Industrial designs by origin (12) in Creative outputs (58).

WEAKNESSES

- Georgia's weaknesses in the GII are found in six of the seven GII pillars.
- Most of them are in Human capital & research (63), where Georgia's weaknesses are indicators PISA results (61), Global R&D companies (43), and Quality of universities (78).
- In Infrastructure (72), Georgia's weakness is indicator Logistics performance (109).
- In Market sophistication (15), indicator Domestic market scale (102) is a relative weakness for the country.
- In Business sophistication (70), two weaknesses are found: indicators Firms offering formal training (88) and State of cluster development (107).
- In Knowledge & technology outputs (62), relative weaknesses for this country are indicators High- & medium-high-tech manufactures (91) and Intellectual property receipts (90).
- In Creative outputs (58), Georgia has only one relative weakness: indicator ICTs & organizational model creation (99).

GEORGIA

GII 2019 rank

48

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$	GDP per capita, PPP$	GII 2018 rank
60	**44**	**Lower middle**	**NAWA**	**3.9**	**43.0**	**11,485.4**	**59**

		Score/Value	Rank	
INSTITUTIONS		**74.3**	**36**	◆
1.1	**Political environment**	**64.2**	**45**	◆
1.1.1	Political and operational stability*	71.9	58	◆
1.1.2	Government effectiveness*	60.4	42	◆
1.2	**Regulatory environment**	**80.8**	**28**	◆
1.2.1	Regulatory quality*	70.2	30	◆
1.2.2	Rule of law*	55.1	49	◆
1.2.3	Cost of redundancy dismissal, salary weeks	8.6	17	● ◆
1.3	**Business environment**	**77.7**	**38**	◆
1.3.1	Ease of starting a business*	99.3	2	● ◆
1.3.2	Ease of resolving insolvency*	56.0	55	◆
HUMAN CAPITAL & RESEARCH		**30.5**	**63**	
2.1	**Education**	**51.5**	**55**	
2.1.1	Expenditure on education, % GDP	3.8	85	
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	n/a	
2.1.3	School life expectancy, years	15.4	39	◆
2.1.4	PISA scales in reading, maths, & science	405.4	61	○
2.1.5	Pupil-teacher ratio, secondary	7.4	5	● ◆
2.2	**Tertiary education**	**34.3**	**57**	
2.2.1	Tertiary enrolment, % gross	57.5	50	◆
2.2.2	Graduates in science & engineering, %	21.9	52	
2.2.3	Tertiary inbound mobility, %	5.6	38	◆
2.3	**Research & development (R&D)**	**5.6**	**75**	
2.3.1	Researchers, FTE/mn pop. 🕘	1,336.6	45	◆
2.3.2	Gross expenditure on R&D, % GDP 🕘	0.3	79	
2.3.3	Global R&D companies, avg. exp. top 3, mn US$	0.0	43	○ ◇
2.3.4	QS university ranking, average score top 3*	0.0	78	○ ◇
INFRASTRUCTURE		**44.7**	**72**	◆
3.1	**Information & communication technologies(ICTs)**	**64.3**	**71**	◆
3.1.1	ICT access*	72.1	59	◆
3.1.2	ICT use*	53.3	67	◆
3.1.3	Government's online service*	69.4	70	
3.1.4	E-participation*	62.4	84	
3.2	**General infrastructure**	**39.2**	**46**	
3.2.1	Electricity output, kWh/mn pop	3,111.3	61	◆
3.2.2	Logistics performance*	17.7	109	○
3.2.3	Gross capital formation, % GDP	35.2	11	● ◆
3.3	**Ecological sustainability**	**30.5**	**91**	
3.3.1	GDP/unit of energy use	7.0	86	
3.3.2	Environmental performance*	55.7	80	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.3	98	
MARKET SOPHISTICATION		**62.1**	**15**	● ◆
4.1	**Credit**	**47.1**	**40**	
4.1.1	Ease of getting credit*	85.0	11	●
4.1.2	Domestic credit to private sector, % GDP	62.5	52	
4.1.3	Microfinance gross loans, % GDP	1.6	15	
4.2	**Investment**	**81.7**	**[1]**	
4.2.1	Ease of protecting minority investors*	81.7	2	● ◆
4.2.2	Market capitalization, % GDP	n/a	n/a	
4.2.3	Venture capital deals/bn PPP$ GDP	n/a	n/a	
4.3	**Trade, competition, & market scale**	**57.4**	**79**	
4.3.1	Applied tariff rate, weighted avg., % 🕘	0.7	5	● ◆
4.3.2	Intensity of local competition†	62.7	94	
4.3.3	Domestic market scale, bn PPP$	43.0	102	○ ◇

		Score/Value	Rank	
BUSINESS SOPHISTICATION		**29.5**	**70**	
5.1	**Knowledge workers**	**32.1**	**[81]**	
5.1.1	Knowledge-intensive employment, %	25.3	54	
5.1.2	Firms offering formal training, % firms	10.5	88	○ ◇
5.1.3	GERD performed by business, % GDP	n/a	n/a	
5.1.4	GERD financed by business, %	n/a	n/a	
5.1.5	Females employed w/advanced degrees, %	17.6	32	◆
5.2	**Innovation linkages**	**25.0**	**65**	
5.2.1	University/industry research collaboration†	32.0	98	
5.2.2	State of cluster development†	34.8	107	○
5.2.3	GERD financed by abroad, % 🕘	14.7	28	
5.2.4	JV-strategic alliance deals/bn PPP$ GDP	0.1	19	◆
5.2.5	Patent families 2+ offices/bn PPP$ GDP	0.2	48	◆
5.3	**Knowledge absorption**	**31.4**	**78**	
5.3.1	Intellectual property payments, % total trade	0.2	88	
5.3.2	High-tech imports, % total trade	7.5	63	
5.3.3	ICT services imports, % total trade	0.7	90	
5.3.4	FDI net inflows, % GDP	11.6	11	● ◆
5.3.5	Research talent, % in business enterprise	n/a	n/a	
KNOWLEDGE & TECHNOLOGY OUTPUTS		**22.5**	**62**	
6.1	**Knowledge creation**	**16.1**	**55**	
6.1.1	Patents by origin/bn PPP$ GDP	1.9	48	
6.1.2	PCT patents by origin/bn PPP$ GDP	0.1	59	
6.1.3	Utility models by origin/bn PPP$ GDP	1.4	19	
6.1.4	Scientific & technical articles/bn PPP$ GDP	14.1	37	◆
6.1.5	Citable documents H-index	9.4	73	
6.2	**Knowledge impact**	**38.3**	**55**	
6.2.1	Growth rate of PPP$ GDP/worker, %	5.0	8	● ◆
6.2.2	New businesses/th pop. 15-64	8.4	17	◆
6.2.3	Computer software spending, % GDP	0.1	89	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	3.3	74	
6.2.5	High- & medium-high-tech manufactures, %	0.1	91	○
6.3	**Knowledge diffusion**	**12.9**	**86**	
6.3.1	Intellectual property receipts, % total trade	0.0	90	○
6.3.2	High-tech net exports, % total trade	0.3	90	
6.3.3	ICT services exports, % total trade	1.1	80	
6.3.4	FDI net outflows, % GDP	2.2	28	◆
CREATIVE OUTPUTS		**29.1**	**58**	
7.1	**Intangible assets**	**44.7**	**50**	
7.1.1	Trademarks by origin/bn PPP$ GDP	68.8	29	
7.1.2	Industrial designs by origin/bn PPP$ GDP	11.8	12	● ◆
7.1.3	ICTs & business model creation†	52.1	97	
7.1.4	ICTs & organizational model creation†	43.6	99	○
7.2	**Creative goods & services**	**16.9**	**62**	
7.2.1	Cultural & creative services exports, % total trade	0.5	51	◆
7.2.2	National feature films/mn pop. 15-69	6.6	33	
7.2.3	Entertainment & Media market/th pop. 15-69	n/a	n/a	
7.2.4	Printing & other media, % manufacturing	1.6	29	
7.2.5	Creative goods exports, % total trade	0.1	97	
7.3	**Online creativity**	**9.9**	**53**	◆
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	1.8	82	
7.3.2	Country-code TLDs/th pop. 15-69	3.4	57	◆
7.3.3	Wikipedia edits/mn pop. 15-69 🕘	44.5	31	◆
7.3.4	Mobile app creation/bn PPP$ GDP	4.3	52	

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 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 AND GII MODEL

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

Indicator Market capitalization, for which data was available in 2018, becomes unavailable in the GII 2019. Indicator Knowledge-intensive employment was not available in the GII 2018 and becomes available this year.

Missing data

Code	Indicator name	Country year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2015	UNESCO Institute for Statistics
4.2.2	Market capitalization, % GDP	n/a	2017	World Federation of Exchanges
4.2.3	Venture capital deals/bn PPP$ GDP	n/a	2018	Thomson Reuters
5.1.3	GERD performed by business, % GDP	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2016	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.3.5	Research talent, % in business enterprise	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
7.2.3	Entertainment & Media market/th pop. 15–69	n/a	2017	PwC

Outdated data

Code	Indicator name	Country year	Model year	Source
2.3.1	Researchers, FTE/mn pop.	2016	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	2016	2017	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.3.1	Applied tariff rate, weighted mean, %	2016	2017	World Bank
5.2.3	GERD financed by abroad, %	2013	2016	UNESCO Institute for Statistics
7.3.3	Wikipedia edits/mn pop. 15–69	2016	2017	Wikimedia Foundation

Model changes

The table below provides a summary of the adjustments to the GII 2019 framework.

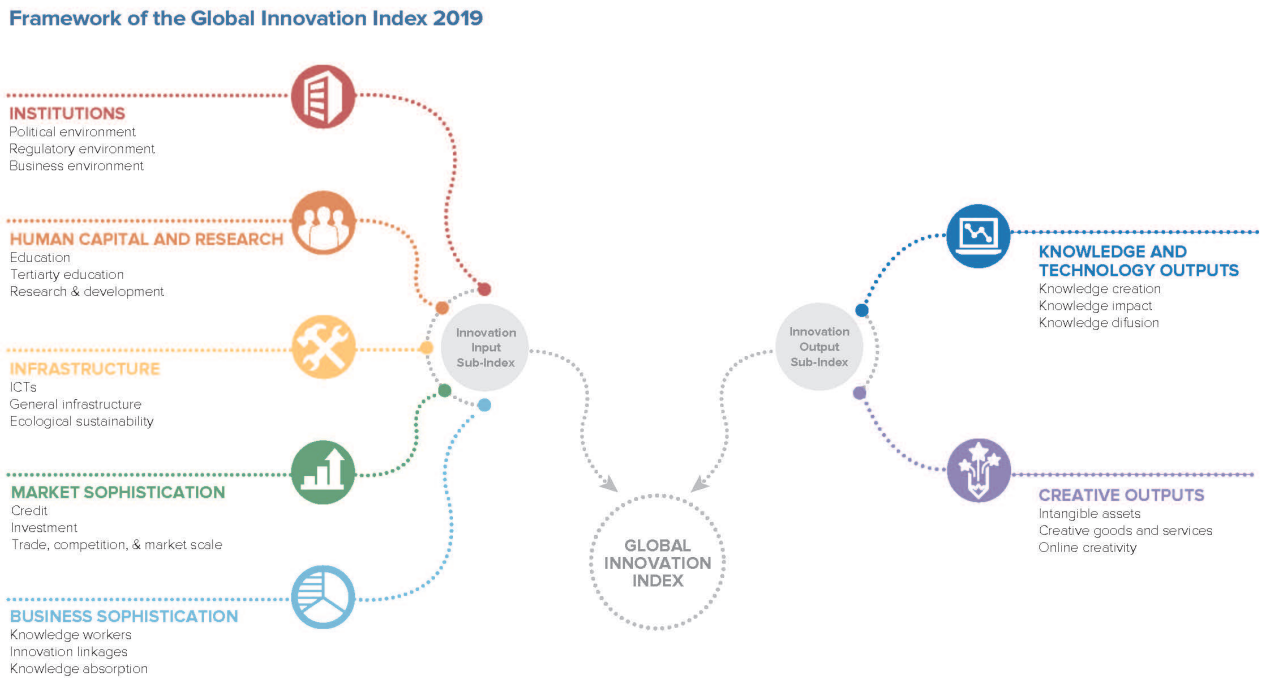
Changes to the GII 2019 framework

	GII 2018	Adjustment		GII 2019
1.1.1	Political stability & safety	Replaced	1.1.1	Political & operational stability
3.3.2	Environmental performance	Indicator changed at source	3.3.2	Environmental performance
5.3.1	Intellectual property payments, % total trade	Methodology change	5.3.1	Intellectual property payments, % total trade (3 year avg.)
5.3.2	High-tech imports, % total trade	Methodology change	5.3.2	High-tech imports, % total trade
6.2.1	Growth rate of PPP$ GDP/worker, %	Methodology change	6.2.1	Growth rate of PPP$ GDP/worker, % (3 year avg.)
6.3.1	Intellectual property receipts, % total trade	Methodology change	6.3.1	Intellectual property receipts, % total trade (3 year avg.)
7.3.4	Mobile app creation/bn PPP$ GDP	Methodology change	7.3.4	Mobile app creation/bn PPP$ GDP

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 2019, the GII presents its 12th edition devoted to the theme **Creating Healthy Lives—The Future of Medical Innovation**.

Recognizing that innovation is a key driver of economic development, the GII aims to provide a rich innovation ranking and 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 countries 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 includes 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 containing three sub-pillars.