Global Innovation Index 2021

LITHUANIA

39th Lithuania ranks 39th among the 132 economies featured in the GII 2021.

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 Lithuania 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 Lithuania in the GII 2021 is between ranks 37 and 40.

Rankings for Lithuania (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	39	35	43
2020	40	36	42
2019	38	38	40

- Lithuania performs better in innovation inputs than innovation outputs in 2021.
- This year Lithuania ranks 35th in innovation inputs, higher than both 2020 and 2019.
- As for innovation outputs, Lithuania ranks 43rd. This position is lower than both 2020 and 2019.

36th Lithuania ranks 36th among the 51 high-income group economies.

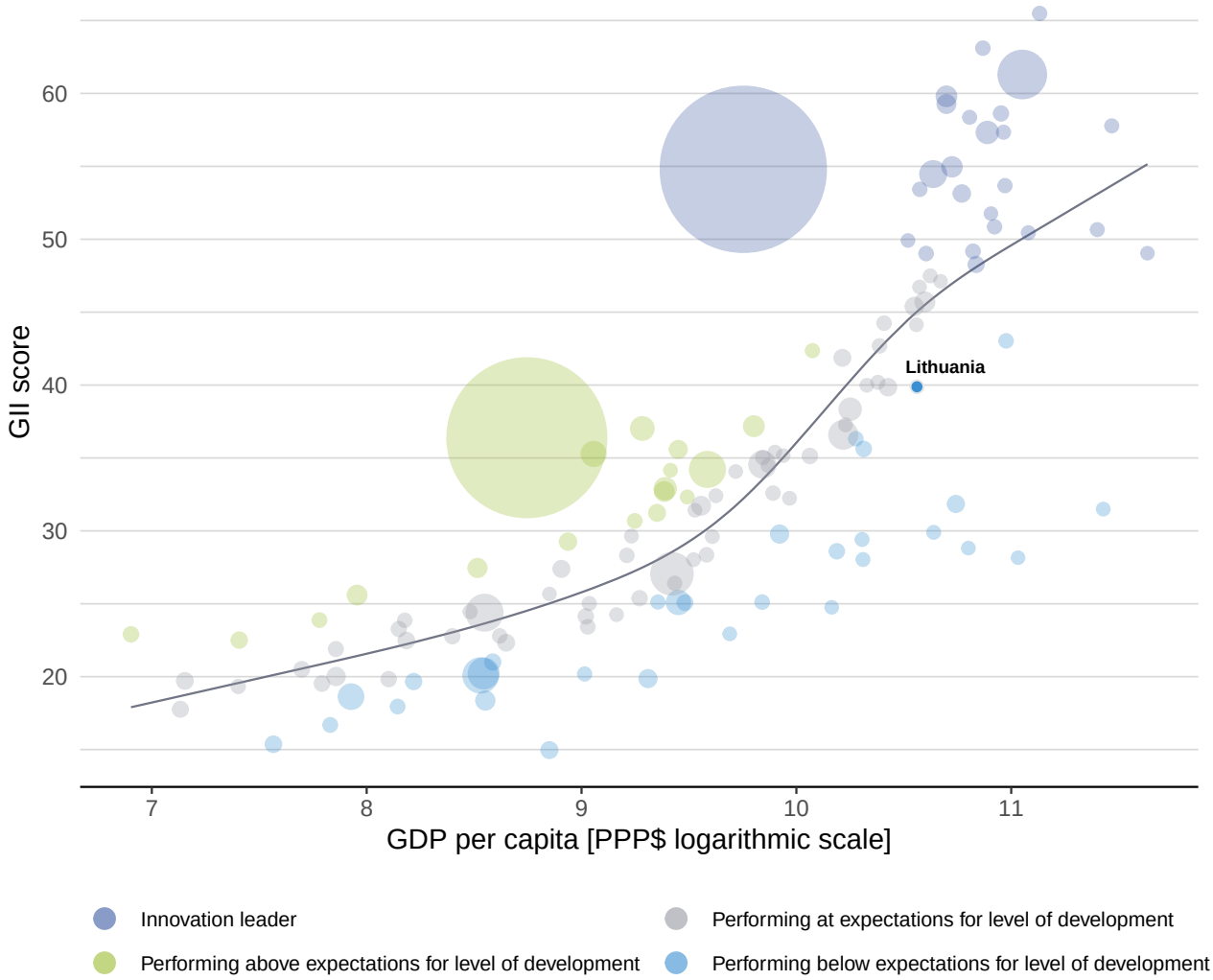
26th Lithuania ranks 26th among the 39 economies in Europe.

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, Lithuania's performance is below expectations for its level of development.

The positive relationship between innovation and development

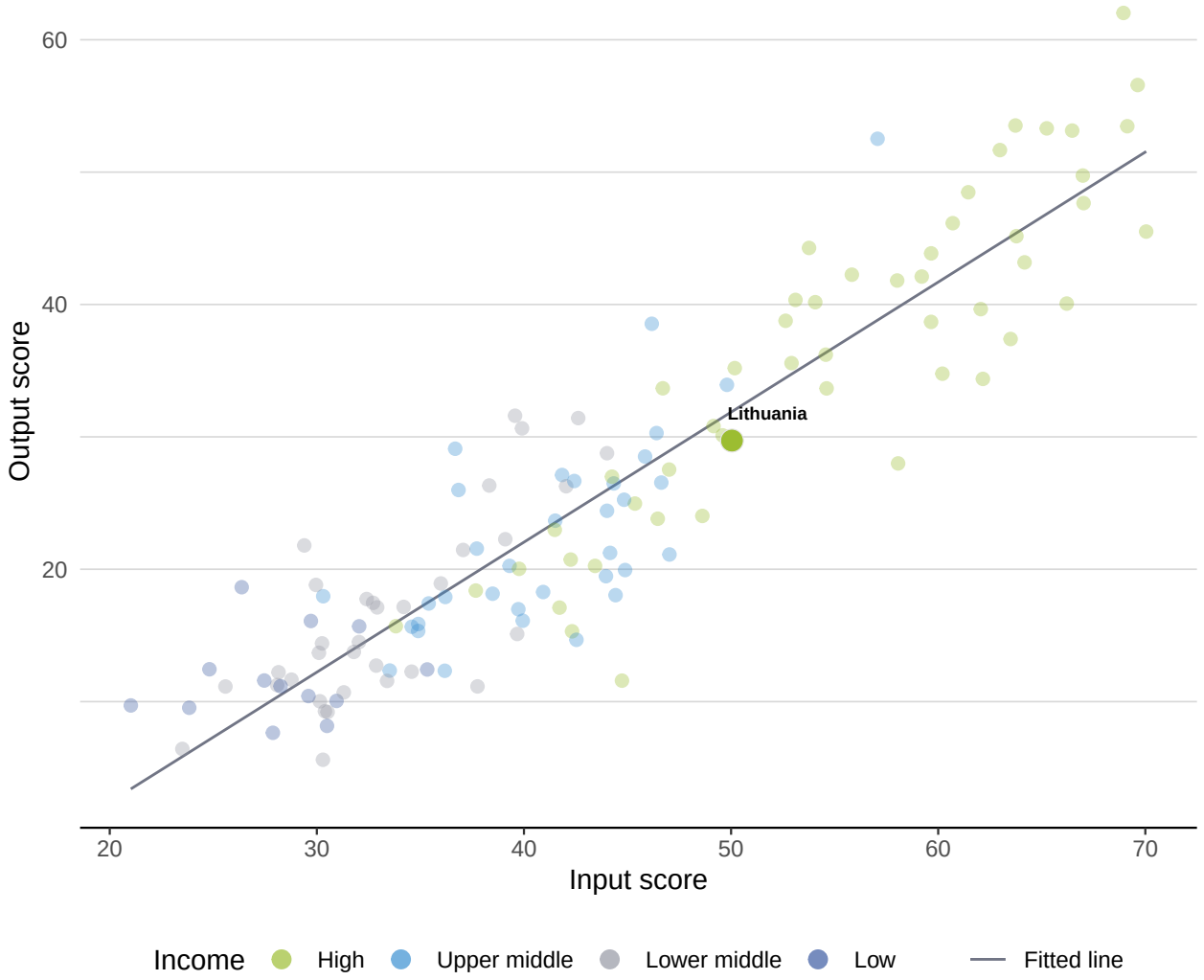


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

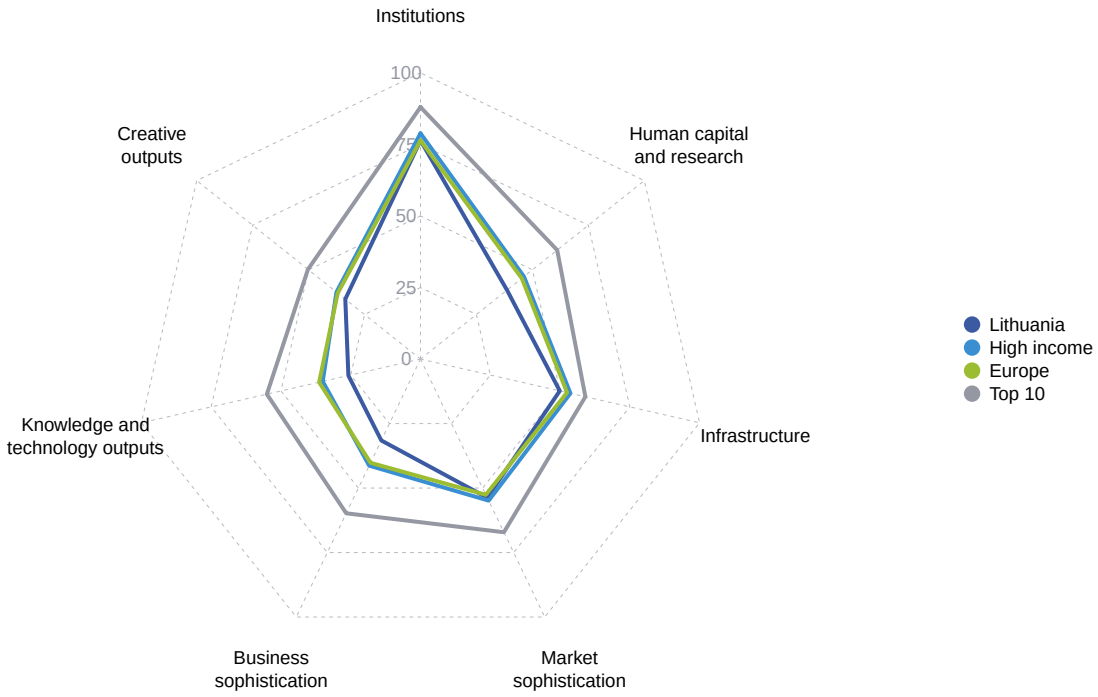
Lithuania produces less innovation outputs relative to its level of innovation investments.

Innovation input to output performance



BENCHMARKING AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND EUROPE

The seven GII pillar scores for Lithuania



High-income group economies

Lithuania performs below the high-income group average in all GII pillars.

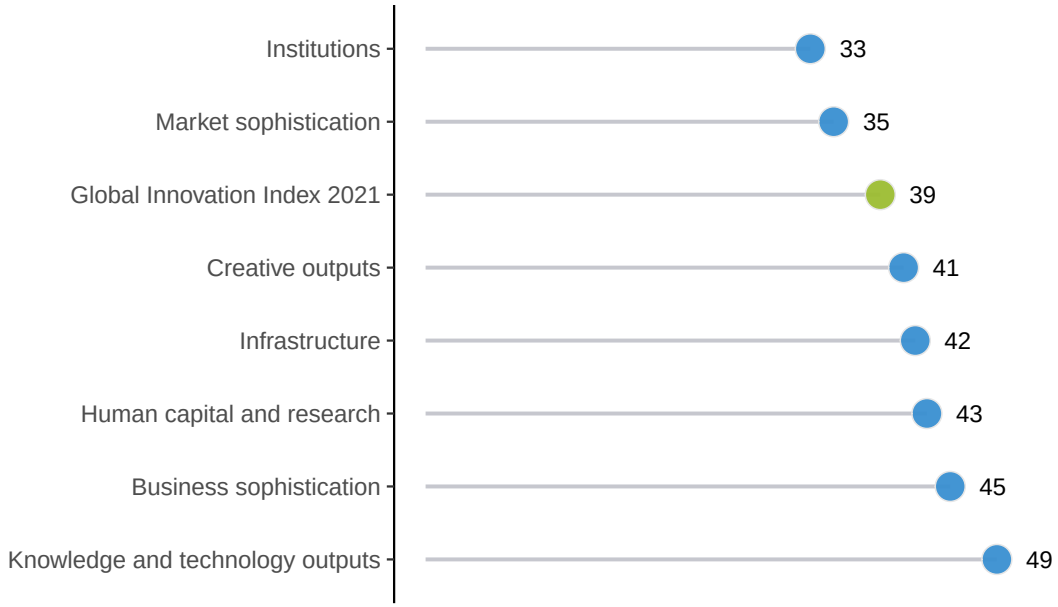
Europe

Lithuania performs above the regional average in Market sophistication.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Lithuania performs best in Institutions and its weakest performance is in Knowledge and technology outputs.

The seven GII pillar ranks for Lithuania



Note: The highest possible ranking in each pillar is one.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Lithuania in the GII 2021.

Strengths and weaknesses for Lithuania

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
1.1.1	Political and operational stability	13	2.1.1	Expenditure on education, % GDP	75
2.1.5	Pupil-teacher ratio, secondary	6	2.1.2	Government funding/pupil, secondary, % GDP/cap	65
3.3	Ecological sustainability	8	2.3.3	Global corporate R&D investors, top 3, mn US$	41
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	8	3.2	General infrastructure	110
4.2.4	Venture capital recipients, deals/bn PPP$ GDP	12	3.2.1	Electricity output, GWh/mn pop.	93
5.1.5	Females employed w/advanced degrees, %	3	3.2.3	Gross capital formation, % GDP	112
5.2.3	GERD financed by abroad, % GDP	14	4.1.2	Domestic credit to private sector, % GDP	83
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	19	5.2.2	State of cluster development and depth	94
7.1.4	ICTs and organizational model creation	21	5.3.1	Intellectual property payments, % total trade	95
7.3	Online creativity	18	5.3.2	High-tech imports, % total trade	84
7.3.2	Country-code TLDs/th pop. 15–69	20	6.2.3	Software spending, % GDP	93
7.3.4	Mobile app creation/bn PPP$ GDP	5			

Lithuania

GII 2021 rank
39

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$	GII 2020 rank
43	35	High	EUR	2.7	106.9	38,605	40

		Score/ Value	Rank
Institutions		**76.4**	**33**
1.1	**Political environment**	**77.2**	**27**
1.1.1	Political and operational stability*	83.9	13 ●
1.1.2	Government effectiveness*	73.8	30
1.2	**Regulatory environment**	**81.9**	**27**
1.2.1	Regulatory quality*	73.8	27
1.2.2	Rule of law*	73.7	29
1.2.3	Cost of redundancy dismissal	13.0	40
1.3	**Business environment**	**70.0**	**71**
1.3.1	Ease of starting a business*	93.3	32
1.3.2	Ease of resolving insolvency*	46.7	81 ◇
Human capital and research		**38.7**	**43**
2.1	**Education**	**52.4**	**58**
2.1.1	Expenditure on education, % GDP	3.8	75 ○
2.1.2	Government funding/pupil, secondary, % GDP/cap	16.9	65 ○
2.1.3	School life expectancy, years	16.6	23
2.1.4	PISA scales in reading, maths and science	479.7	32
2.1.5	Pupil-teacher ratio, secondary ◴	7.8	6 ● ◆
2.2	**Tertiary education**	**43.4**	**29**
2.2.1	Tertiary enrolment, % gross	73.7	25
2.2.2	Graduates in science and engineering, %	26.8	29
2.2.3	Tertiary inbound mobility, %	5.3	46
2.3	**Research and development (R&D)**	**20.2**	**44**
2.3.1	Researchers, FTE/mn pop.	3,446.4	29
2.3.2	Gross expenditure on R&D, % GDP	1.0	40
2.3.3	Global corporate R&D investors, top 3, mn US$	0.0	41 ○ ◇
2.3.4	QS university ranking, top 3*	19.8	54
Infrastructure		**49.9**	**42**
3.1	**Information and communication technologies (ICTs)**	**77.8**	**40**
3.1.1	ICT access*	75.8	47
3.1.2	ICT use*	76.5	32
3.1.3	Government's online service*	85.3	24
3.1.4	E-participation*	73.8	64
3.2	**General infrastructure**	**20.0**	**110 ○ ◇**
3.2.1	Electricity output, GWh/mn pop.	1,207.5	93 ○ ◇
3.2.2	Logistics performance*	45.1	53 ◇
3.2.3	Gross capital formation, % GDP	15.5	112 ○ ◇
3.3	**Ecological sustainability**	**51.9**	**8 ● ◆**
3.3.1	GDP/unit of energy use	12.6	41
3.3.2	Environmental performance*	62.9	35
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	9.5	8 ● ◆
Market sophistication		**53.7**	**35**
4.1	**Credit**	**42.2**	**60**
4.1.1	Ease of getting credit*	70.0	44
4.1.2	Domestic credit to private sector, % GDP	38.9	83 ○ ◇
4.1.3	Microfinance gross loans, % GDP	n/a	n/a
4.2	**Investment**	**44.6**	**25**
4.2.1	Ease of protecting minority investors*	70.0	36
4.2.2	Market capitalization, % GDP	n/a	n/a
4.2.3	Venture capital investors, deals/bn PPP$ GDP	0.1	26
4.2.4	Venture capital recipients, deals/bn PPP$ GDP	0.1	12 ●
4.3	**Trade, diversification, and market scale**	**74.4**	**48**
4.3.1	Applied tariff rate, weighted avg., %	1.8	25
4.3.2	Domestic industry diversification	95.0	26
4.3.3	Domestic market scale, bn PPP$	106.9	80

		Score/ Value	Rank
Business sophistication		**31.5**	**45**
5.1	**Knowledge workers**	**44.2**	**37**
5.1.1	Knowledge-intensive employment, %	42.6	23
5.1.2	Firms offering formal training, %	27.5	56
5.1.3	GERD performed by business, % GDP	0.4	41
5.1.4	GERD financed by business, %	38.0	48
5.1.5	Females employed w/advanced degrees, %	28.9	3 ● ◆
5.2	**Innovation linkages**	**26.3**	**43**
5.2.1	University-industry R&D collaboration†	55.4	28
5.2.2	State of cluster development and depth†	42.2	94 ○ ◇
5.2.3	GERD financed by abroad, % GDP	0.2	14 ●
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.0	52
5.2.5	Patent families/bn PPP$ GDP	0.2	40
5.3	**Knowledge absorption**	**24.1**	**71**
5.3.1	Intellectual property payments, % total trade	0.2	95 ○
5.3.2	High-tech imports, % total trade	6.6	84 ○
5.3.3	ICT services imports, % total trade	1.0	76
5.3.4	FDI net inflows, % GDP	2.7	62
5.3.5	Research talent, % in businesses	32.7	40
Knowledge and technology outputs		**25.8**	**49**
6.1	**Knowledge creation**	**19.4**	**54**
6.1.1	Patents by origin/bn PPP$ GDP	1.1	63
6.1.2	PCT patents by origin/bn PPP$ GDP	0.4	37
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	n/a
6.1.4	Scientific and technical articles/bn PPP$ GDP	28.1	32
6.1.5	Citable documents H-index	13.0	58
6.2	**Knowledge impact**	**33.3**	**52**
6.2.1	Labor productivity growth, %	2.4	22 ◆
6.2.2	New businesses/th pop. 15–64	3.3	41
6.2.3	Software spending, % GDP	0.1	93 ○ ◇
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	15.3	19 ●
6.2.5	High-tech manufacturing, % ◴	20.8	60
6.3	**Knowledge diffusion**	**24.9**	**47**
6.3.1	Intellectual property receipts, % total trade	0.1	62
6.3.2	Production and export complexity	63.7	31
6.3.3	High-tech exports, % total trade	6.2	30
6.3.4	ICT services exports, % total trade	1.9	60
Creative outputs		**33.6**	**41**
7.1	**Intangible assets**	**31.3**	**62**
7.1.1	Trademarks by origin/bn PPP$ GDP	41.8	57
7.1.2	Global brand value, top 5,000, % GDP	4.0	69 ◇
7.1.3	Industrial designs by origin/bn PPP$ GDP	2.4	42
7.1.4	ICTs and organizational model creation†	68.4	21 ●
7.2	**Creative goods and services**	**19.2**	**58**
7.2.1	Cultural and creative services exports, % total trade	0.7	37
7.2.2	National feature films/mn pop. 15–69	5.4	40
7.2.3	Entertainment and media market/th pop. 15–69	n/a	n/a
7.2.4	Printing and other media, % manufacturing	1.1	51
7.2.5	Creative goods exports, % total trade	1.8	34
7.3	**Online creativity**	**52.6**	**18 ●**
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	14.1	33
7.3.2	Country-code TLDs/th pop. 15–69	33.3	20 ●
7.3.3	Wikipedia edits/mn pop. 15–69	73.7	27
7.3.4	Mobile app creation/bn PPP$ GDP	86.0	5 ● ◆

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 IV 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 Lithuania.

Missing data for Lithuania

Code	Indicator name	Economy year	Model year	Source
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
4.2.2	Market capitalization, % GDP	n/a	2019	World Federation of Exchanges
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2019	World Intellectual Property Organization
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2020	PwC

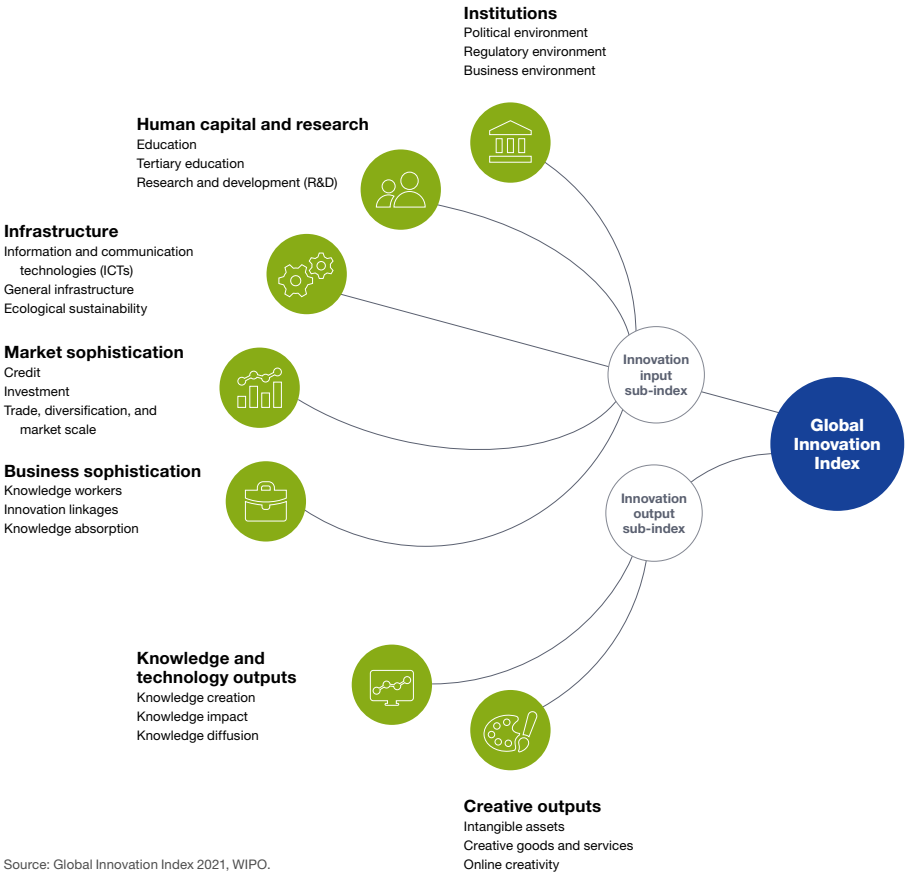
Outdated data for Lithuania

Code	Indicator name	Economy year	Model year	Source
2.1.5	Pupil-teacher ratio, secondary	2018	2019	UNESCO Institute for Statistics
6.2.5	High-tech manufacturing, %	2017	2018	United Nations Industrial Development Organization

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 2021, WIPO.

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.