

NEW ZEALAND

26th

New Zealand ranks 26th among the 131 economies featured in the GI 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 GI aims to capture the multi-dimensional facets of innovation.

The following table shows the rankings of New Zealand over the past three years, noting that data availability and changes to the GI model framework influence year-on-year comparisons of the GI rankings. The statistical confidence interval for the ranking of New Zealand in the GI 2020 is between ranks 25 and 30.

Rankings of New Zealand (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	26	19	33
2019	25	18	32
2018	22	15	30

- New Zealand performs better in innovation inputs than innovation outputs in 2020.
- This year New Zealand ranks 19th in innovation inputs, lower than last year and lower compared to 2018.
- As for innovation outputs, New Zealand ranks 33rd. This position is lower than last year and lower compared to 2018.

25th

New Zealand ranks 25th among the 49 high-income group economies.

7th

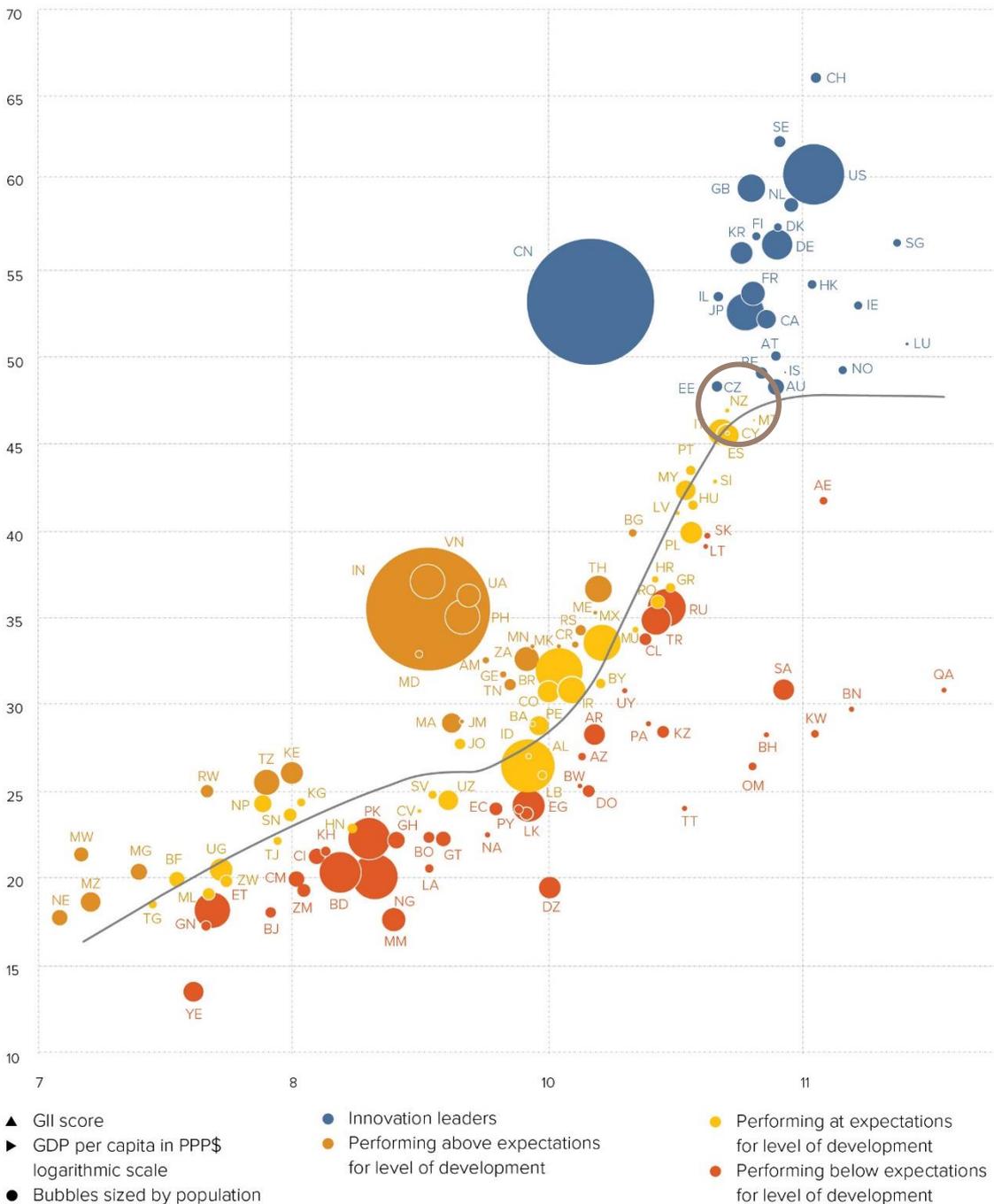
New Zealand ranks 7th among the 17 economies in South East Asia, East Asia, and Oceania.

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, New Zealand's performance matches expectations for its level of development.

The positive relationship between innovation and development

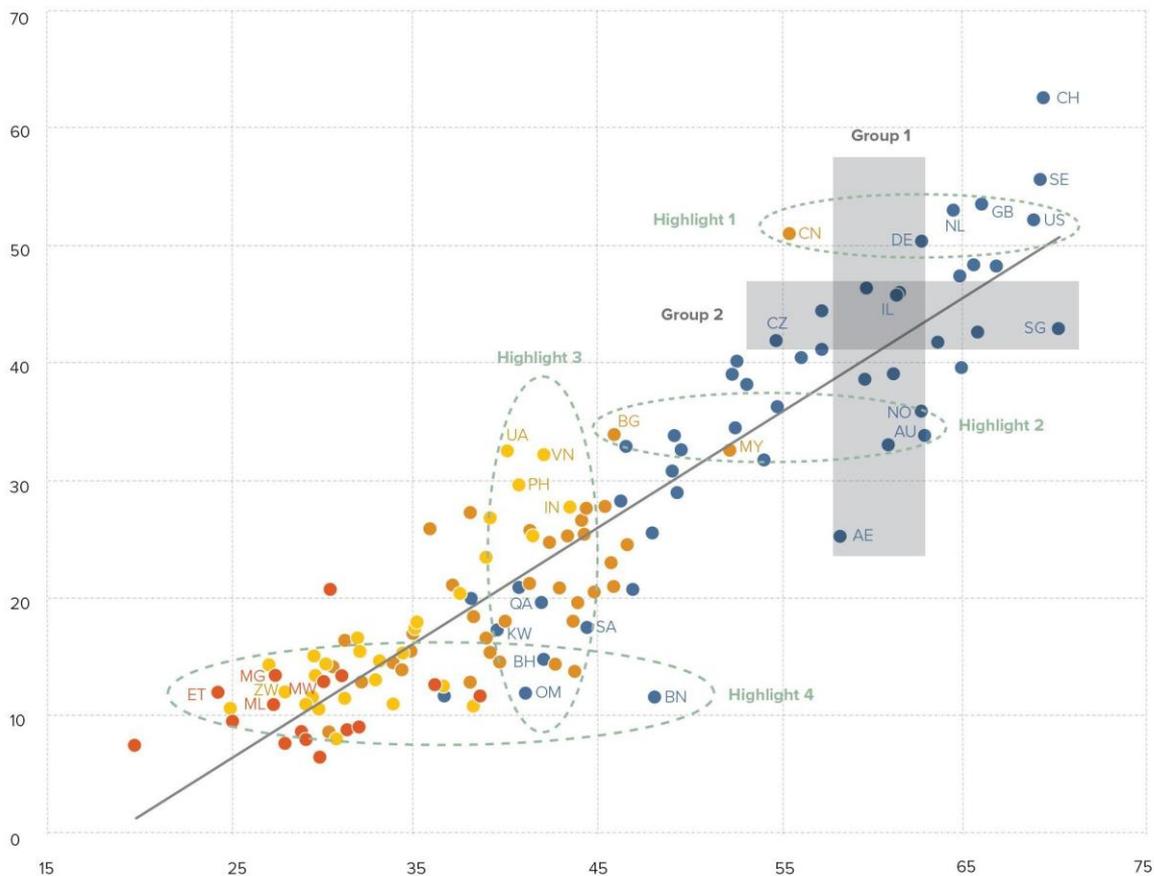


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

New Zealand produces less innovation outputs relative to its level of innovation investments.

Innovation input to output performance, 2020

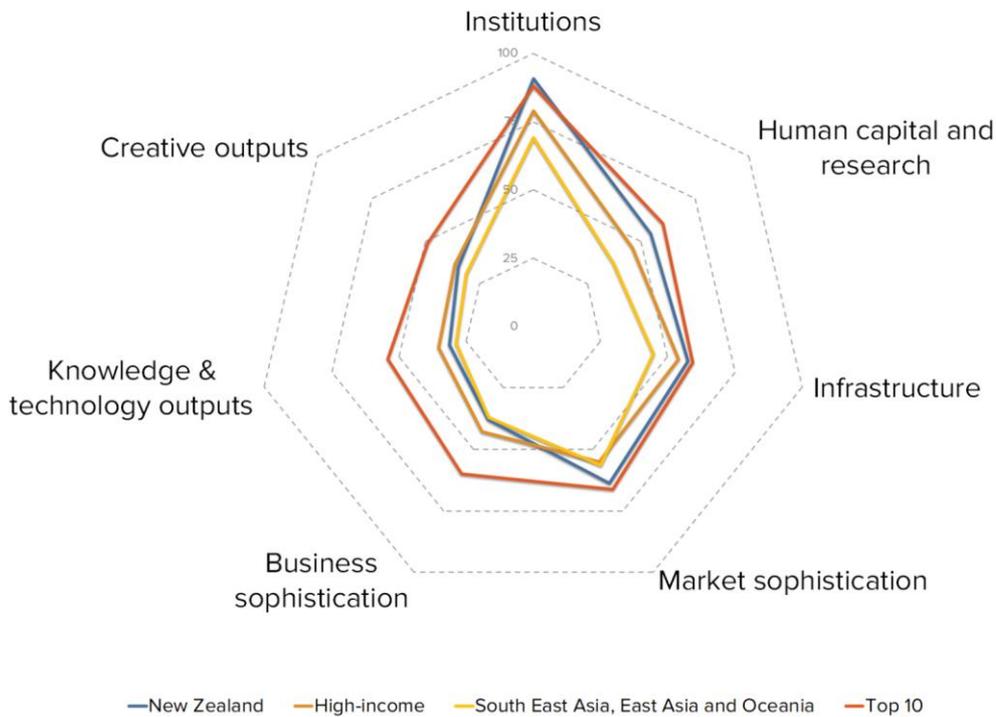


▲ Output score ● High income group ● Lower middle-income group — Fitted values
 ► Input score ● Upper middle-income group ● Low income group

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 NEW ZEALAND AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND SOUTH EAST ASIA, EAST ASIA, AND OCEANIA

New Zealand's scores in the seven GII pillars



High-income group economies

New Zealand has high scores in four out of the seven GII pillars: Institutions, Human capital & research, Infrastructure and Market sophistication, which are above average for the high-income group.

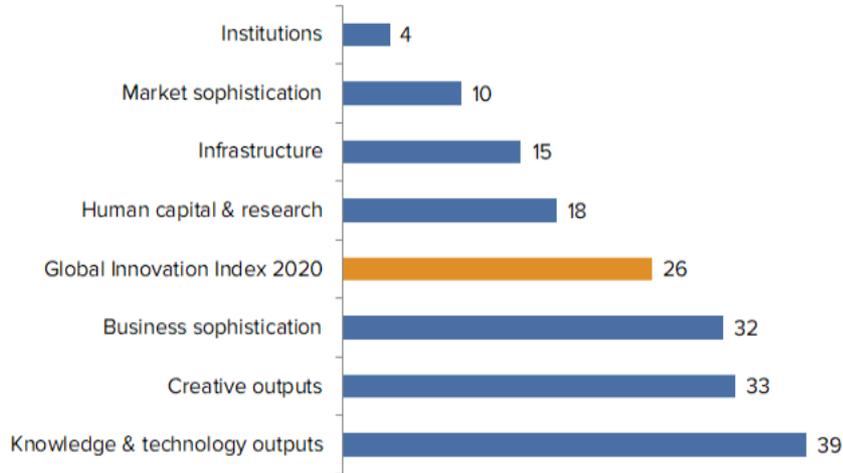
Conversely, New Zealand scores below average for its income group in three GII pillars: Business sophistication, Knowledge & technology outputs and Creative outputs.

South East Asia, East Asia, and Oceania

New Zealand performs above the regional average in all GII pillars.

OVERVIEW OF NEW ZEALAND RANKINGS IN THE SEVEN GII AREAS

New Zealand performs best in Institutions and its weakest performance is in Knowledge & technology outputs.



*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 New Zealand in the GII 2020.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1	Institutions	4	2.1.5	Pupil-teacher ratio, secondary	68
1.1	Political environment	8	2.2.2	Graduates in science & engineering, %	62
1.1.1	Political and operational stability*	2	3.3.1	GDP/unit of energy use	73
1.2	Regulatory environment	3	5.3.4	FDI net inflows, % GDP	108
1.2.1	Regulatory quality*	4	6.2.1	Growth rate of PPP\$ GDP/worker, %	71
1.2.2	Rule of law*	5	6.2.5	High- and medium-high-tech manufacturing, %	69
1.2.3	Cost of redundancy dismissal, salary weeks	1	6.3	Knowledge diffusion	77
1.3.1	Ease of starting a business*	1	6.3.2	High-tech net exports, % total trade	67
2.1.3	School life expectancy, years	8	6.3.3	ICT services exports, % total trade	79
2.2.3	Tertiary inbound mobility, %	6	6.3.4	FDI net outflows, % GDP	119
3.1	Information & communication technologies (ICTs)	8	7.2.5	Creative goods exports, % total trade	65
4.1	Credit	3			
4.1.1	Ease of getting credit*	1			
4.1.2	Domestic credit to private sector, % GDP	7			
4.2.1	Ease of protecting minority investors*	3			
6.2.2	New businesses/th pop. 15–64	4			

NOTES: * indicates an index; † indicates a survey question.

STRENGTHS

GII strengths for New Zealand are found in five of the seven GII pillars.

- Institutions (4): exhibits strengths in the sub-pillars Political environment (8) and Regulatory environment (3) and in the indicators Political and operational stability (2), Regulatory quality (4), Rule of law (5), Cost of redundancy dismissal (1) and Ease of starting a business (1).
- Human capital & research (18): shows strengths in the indicators School life expectancy (8) and Tertiary inbound mobility (6).
- Infrastructure (15): demonstrates strengths in the sub-pillar Information & communication technologies (8).
- Market sophistication (10): displays strengths in the sub-pillar Credit (3) and in the indicators Ease of getting credit (1), Domestic credit to private sector (7) and Ease of protecting minority investors (3).
- Knowledge & technology outputs (39): reveals strengths in the indicator New businesses (4).

WEAKNESSES

GII weaknesses for New Zealand are found in five of the seven GII pillars.

- Human capital & research (18): exhibits weaknesses in the indicators Pupil-teacher ratio (68) and Graduates in science & engineering (62).
- Infrastructure (15): displays weaknesses in the indicator GDP/unit of energy use (73).
- Business sophistication (32): demonstrates weaknesses in the indicator FDI net inflows (108).
- Knowledge & technology outputs (39): reveals weaknesses in the sub-pillar Knowledge diffusion (77) and in the indicators Growth rate of PPP\$ GDP/worker (71), High- and medium-high-tech manufacturing (69), High-tech net exports (67), ICT services exports (79) and FDI net outflows (119).
- Creative outputs (33): shows weaknesses in the indicator Creative goods exports (65).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2019 rank
33	19	High	SEAO	4.8	206.2	35,744.0	25
				Score/Value	Rank		
INSTITUTIONS				90.9	4		
1.1	Political environment	90.5	8				
1.1.1	Political and operational stability*	96.4	2				
1.1.2	Government effectiveness*	87.5	12				
1.2	Regulatory environment	97.4	3				
1.2.1	Regulatory quality*	94.0	4				
1.2.2	Rule of law*	95.6	5				
1.2.3	Cost of redundancy dismissal, salary weeks	8.0	1				
1.3	Business environment	84.7	19				
1.3.1	Ease of starting a business*	100.0	1				
1.3.2	Ease of resolving insolvency*	69.5	33				
HUMAN CAPITAL & RESEARCH				54.4	18		
2.1	Education	61.5	14				
2.1.1	Expenditure on education, % GDP	6.4	10				
2.1.2	Government funding/pupil, secondary, % GDP/cap	21.1	46				
2.1.3	School life expectancy, years	18.8	8				
2.1.4	PISA scales in reading, maths, & science	502.9	13				
2.1.5	Pupil-teacher ratio, secondary	13.6	68				
2.2	Tertiary education	53.6	11				
2.2.1	Tertiary enrolment, % gross	82.0	15				
2.2.2	Graduates in science & engineering, %	21.2	62				
2.2.3	Tertiary inbound mobility, %	19.6	6				
2.3	Research & development (R&D)	48.1	21				
2.3.1	Researchers, FTE/mn pop.	5,529.5	11				
2.3.2	Gross expenditure on R&D, % GDP	1.4	27				
2.3.3	Global R&D companies, avg. exp. top 3, mn \$US	47.9	31				
2.3.4	QS university ranking, average score top 3*	50.7	18				
INFRASTRUCTURE				57.7	15		
3.1	Information & communication technologies (ICTs)	90.5	8				
3.1.1	ICT access*	85.6	12				
3.1.2	ICT use*	82.9	13				
3.1.3	Government's online service*	95.1	9				
3.1.4	E-participation*	98.3	5				
3.2	General infrastructure	41.0	21				
3.2.1	Electricity output, kWh/mn pop.	9,023.2	17				
3.2.2	Logistics performance*	84.7	15				
3.2.3	Gross capital formation, % GDP	24.1	59				
3.3	Ecological sustainability	41.5	34				
3.3.1	GDP/unit of energy use	8.5	73				
3.3.2	Environmental performance*	71.3	19				
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	3.7	28				
MARKET SOPHISTICATION				63.9	10		
4.1	Credit	85.8	3				
4.1.1	Ease of getting credit*	100.0	1				
4.1.2	Domestic credit to private sector, % GDP	158.3	7				
4.1.3	Microfinance gross loans, % GDP	n/a	n/a				
4.2	Investment	38.6	63				
4.2.1	Ease of protecting minority investors*	86.0	3				
4.2.2	Market capitalization, % GDP	43.8	35				
4.2.3	Venture capital deals/bn PPP\$ GDP	0.1	34				
4.3	Trade, competition, and market scale	67.4	44				
4.3.1	Applied tariff rate, weighted avg., %	1.4	15				
4.3.2	Intensity of local competition†	70.8	52				
4.3.3	Domestic market scale, bn PPP\$	206.2	63				
BUSINESS SOPHISTICATION				37.9	32		
5.1	Knowledge workers	41.0	[43]				
5.1.1	Knowledge-intensive employment, %	n/a	n/a				
5.1.2	Firms offering formal training, %	n/a	n/a				
5.1.3	GERD performed by business, % GDP	0.8	30				
5.1.4	GERD financed by business, %	46.4	36				
5.1.5	Females employed w/advanced degrees, %	19.5	29				
5.2	Innovation linkages	35.7	29				
5.2.1	University/industry research collaboration†	59.5	24				
5.2.2	State of cluster development†	49.5	49				
5.2.3	GERD financed by abroad, % GDP	0.1	35				
5.2.4	JV-strategic alliance deals/bn PPP\$ GDP	0.1	19				
5.2.5	Patent families 2+ offices/bn PPP\$ GDP	1.9	21				
5.3	Knowledge absorption	37.2	35				
5.3.1	Intellectual property payments, % total trade	1.6	18				
5.3.2	High-tech imports, % total trade	10.2	28				
5.3.3	ICT services imports, % total trade	1.5	43				
5.3.4	FDI net inflows, % GDP	1.0	108				
5.3.5	Research talent, % in business enterprise	31.2	41				
KNOWLEDGE & TECHNOLOGY OUTPUTS				31.2	39		
6.1	Knowledge creation	47.5	17				
6.1.1	Patents by origin/bn PPP\$ GDP	5.1	22				
6.1.2	PCT patents by origin/bn PPP\$ GDP	1.2	26				
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	n/a				
6.1.4	Scientific & technical articles/bn PPP\$ GDP	29.7	10				
6.1.5	Citable documents H-index	34.8	27				
6.2	Knowledge impact	26.3	60				
6.2.1	Growth rate of PPP\$ GDP/worker, %	0.7	71				
6.2.2	New businesses/th pop. 15-64	17.8	4				
6.2.3	Computer software spending, % GDP	0.0	55				
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	5.1	54				
6.2.5	High- and medium-high-tech manufacturing, %	14.1	69				
6.3	Knowledge diffusion	19.9	77				
6.3.1	Intellectual property receipts, % total trade	0.7	23				
6.3.2	High-tech net exports, % total trade	1.1	67				
6.3.3	ICT services exports, % total trade	1.1	79				
6.3.4	FDI net outflows, % GDP	0.0	119				
CREATIVE OUTPUTS				34.9	33		
7.1	Intangible assets	35.4	37				
7.1.1	Trademarks by origin/bn PPP\$ GDP	90.1	18				
7.1.2	Global brand value, top 5,000, % GDP	18.8	48				
7.1.3	Industrial designs by origin/bn PPP\$ GDP	2.3	49				
7.1.4	ICTs & organizational model creation†	71.3	18				
7.2	Creative goods and services	21.5	48				
7.2.1	Cultural & creative services exports, % total trade	0.4	57				
7.2.2	National feature films/mn pop. 15-69	6.1	37				
7.2.3	Entertainment & Media market/th pop. 15-69	53.5	14				
7.2.4	Printing and other media, % manufacturing	1.8	21				
7.2.5	Creative goods exports, % total trade	0.5	65				
7.3	Online creativity	47.1	23				
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	32.1	20				
7.3.2	Country-code TLDs/th pop. 15-69	64.6	10				
7.3.3	Wikipedia edits/mn pop. 15-69	80.4	24				
7.3.4	Mobile app creation/bn PPP\$ GDP	12.3	40				

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

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

Missing data

Code	Indicator name	Country year	Model year	Source
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
5.1.1	Knowledge-intensive employment, %	n/a	2018	International Labour Organization
5.1.2	Firms offering formal training, %	n/a	2018	World Bank
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2018	World Intellectual Property Organization

Outdated data

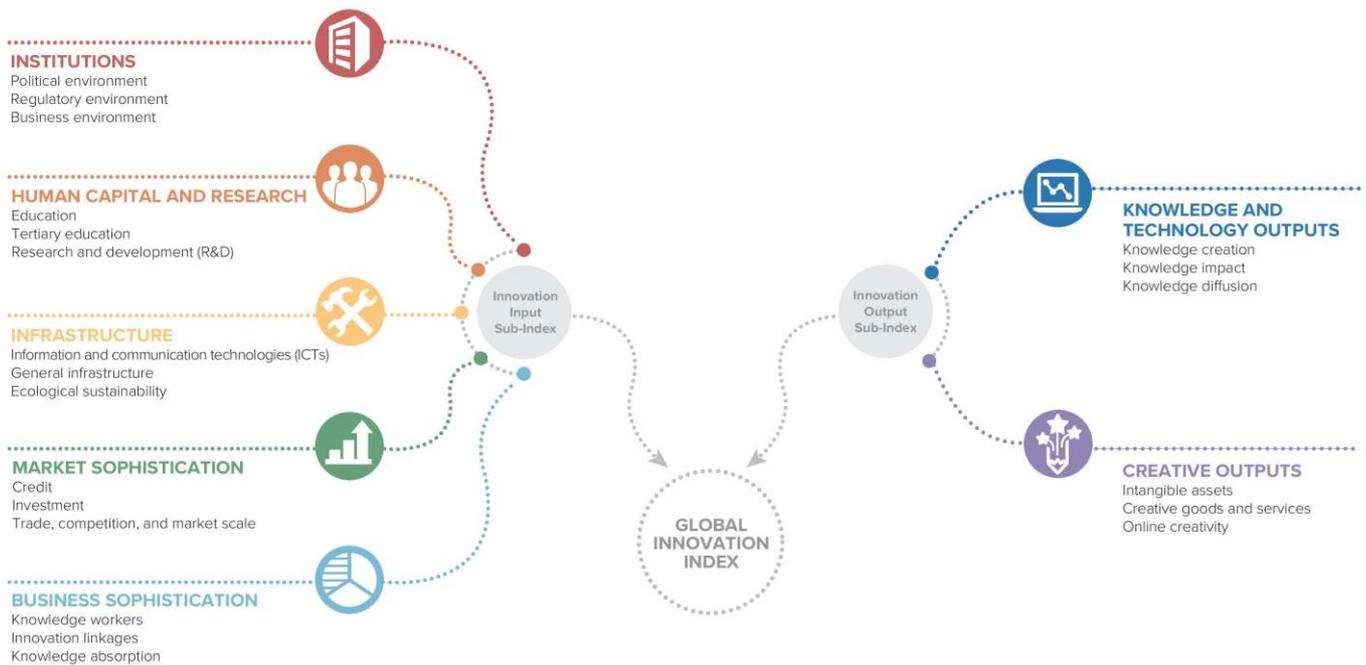
Code	Indicator name	Country year	Model year	Source
2.1.1	Expenditure on education, % GDP	2016	2018	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2017	2018	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2017	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	2017	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
4.3.1	Applied tariff rate, weighted avg., %	2017	2018	World Bank
5.1.3	GERD performed by business, % GDP	2017	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.1.5	Females employed w/advanced degrees, %	2013	2018	International Labour Organization
5.3.5	Research talent, % in business enterprise	2017	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
6.2.5	High- and medium-high-tech manufacturing, %	2015	2017	United Nations Industrial Development Organization
7.2.4	Printing and other media, % manufacturing	2015	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.

