

Global Innovation Index 2023

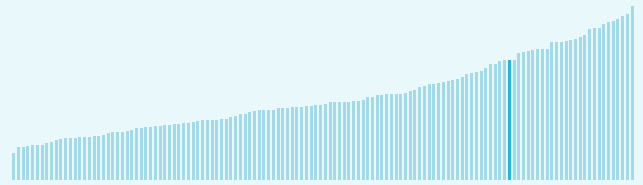


The Global Innovation Index (GII) ranks world economies according to their innovation capabilities.

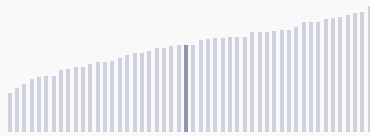
Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.

New Zealand ranking in the Global Innovation Index 2023

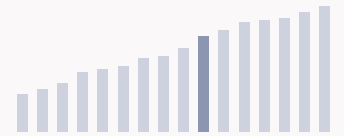
> New Zealand ranks **27th** among the 132 economies featured in the GII 2023.



> New Zealand ranks **26th** among the 50 high-income group economies.



> New Zealand ranks **7th** among the 16 economies in South East Asia, East Asia, and Oceania.



> New Zealand GII Ranking (2020-2023)

The table shows the rankings of New Zealand 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 New Zealand in the GII 2023 is between ranks 26 and 31.

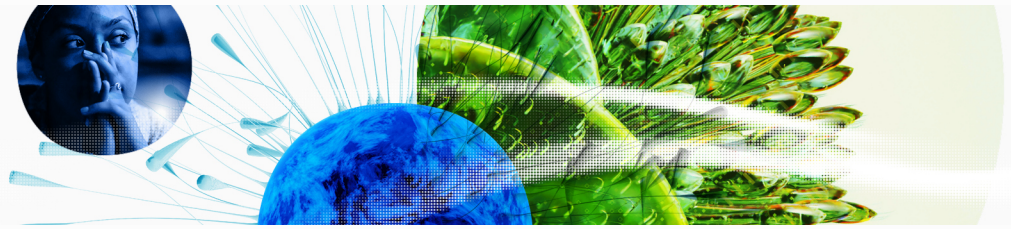
	GII Position	Innovation Inputs	Innovation Outputs
2020	26th	19th	33rd
2021	26th	19th	32nd
2022	24th	23rd	28th
2023	27th	24th	31st

New Zealand performs worse in innovation outputs than innovation inputs in 2023.

This year New Zealand ranks 24th in innovation inputs. This position is lower than last year.

New Zealand ranks 31st in innovation outputs. This position is lower than last year.

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→ Expected vs. observed innovation performance

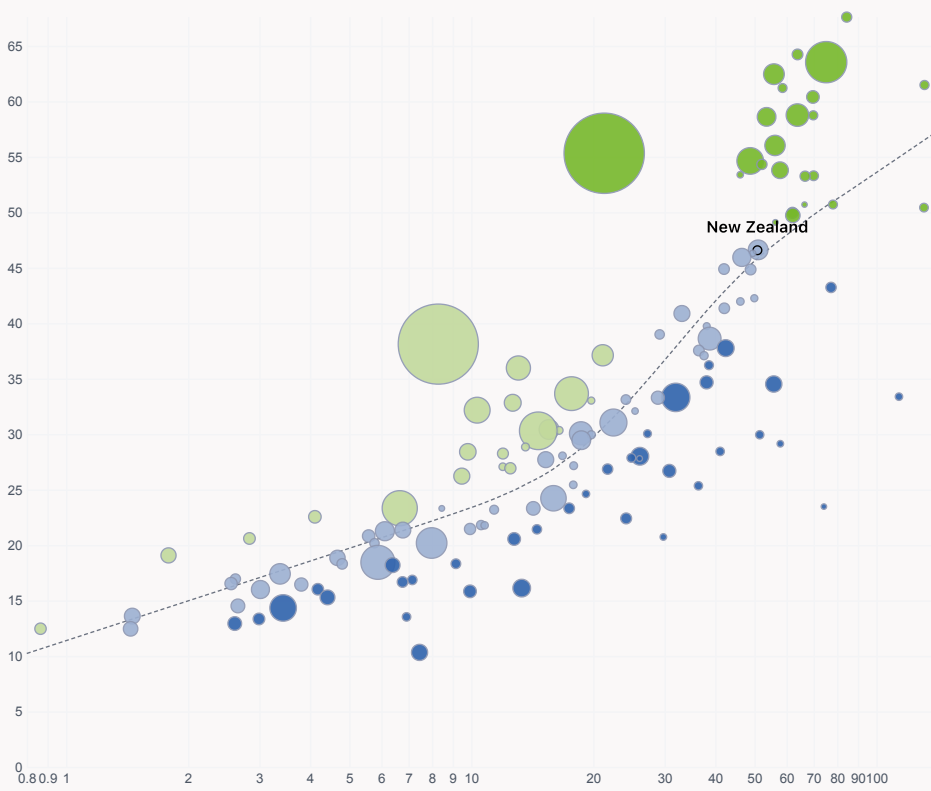
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected and those below are performing below expectations.



> Relative to GDP, New Zealand's performance is at expectations for its level of development.

> Innovation overperformers relative to their economic development

↑ **GII Score**



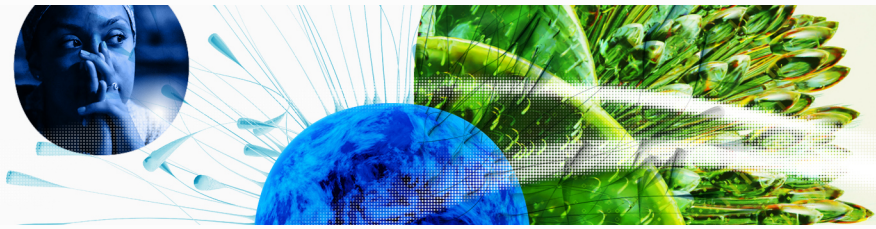
- Innovation leader
- Performing above expectations for level of development
- Performing at expectations for level of development
- Performing below expectations for level of development

Size legend (Population)



→ **GDP per capita, PPP logarithmic scale (thousands of \$)**

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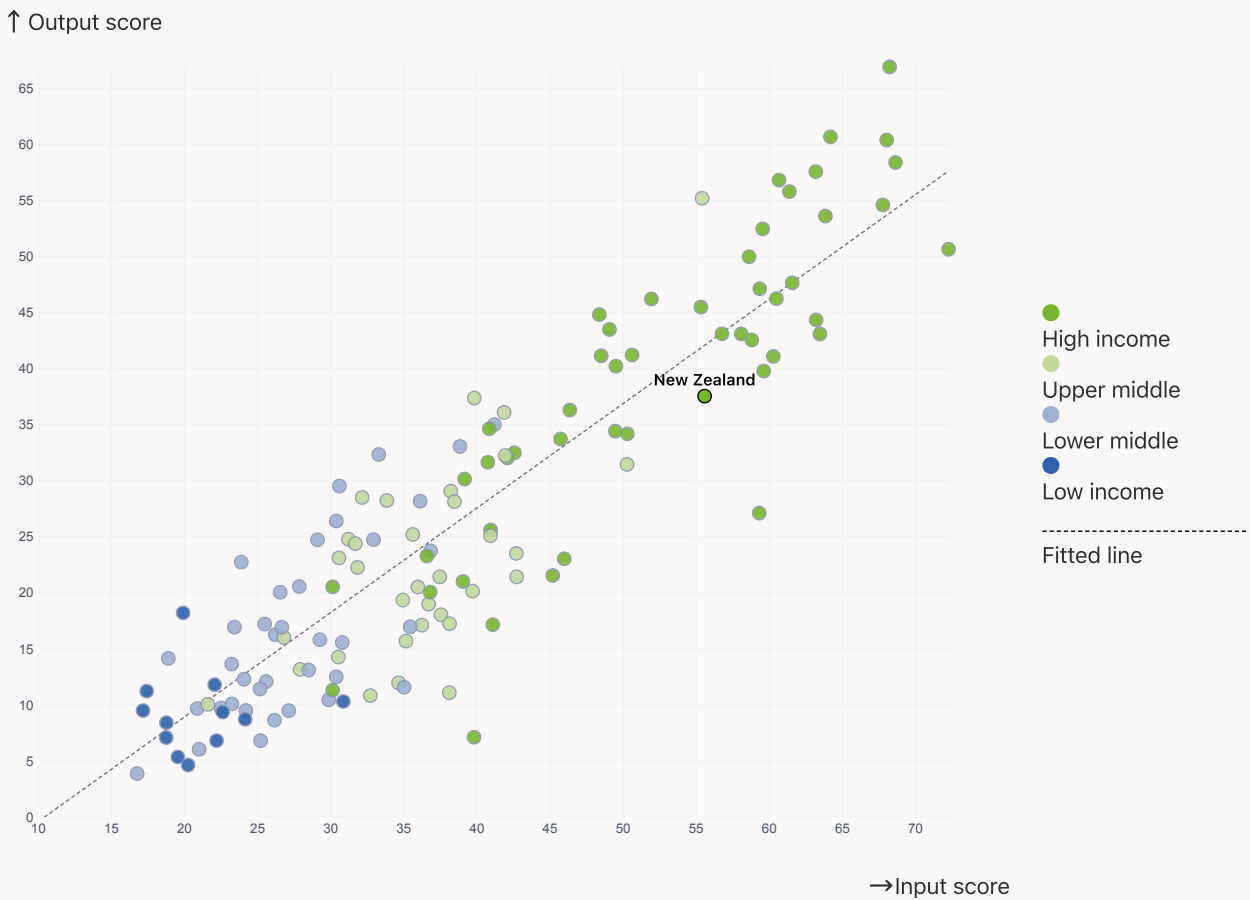
→ Effectively translating innovation investments into innovation outputs

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.

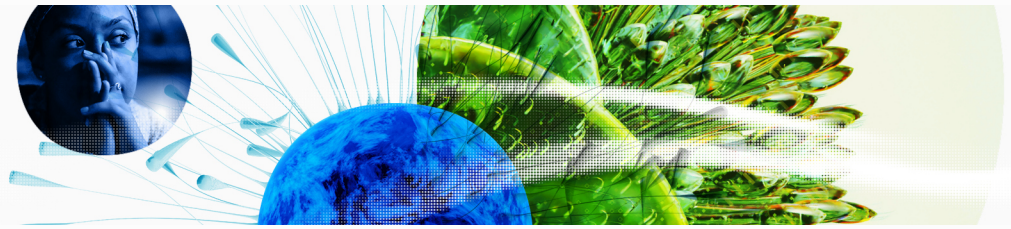


> New Zealand produces less innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

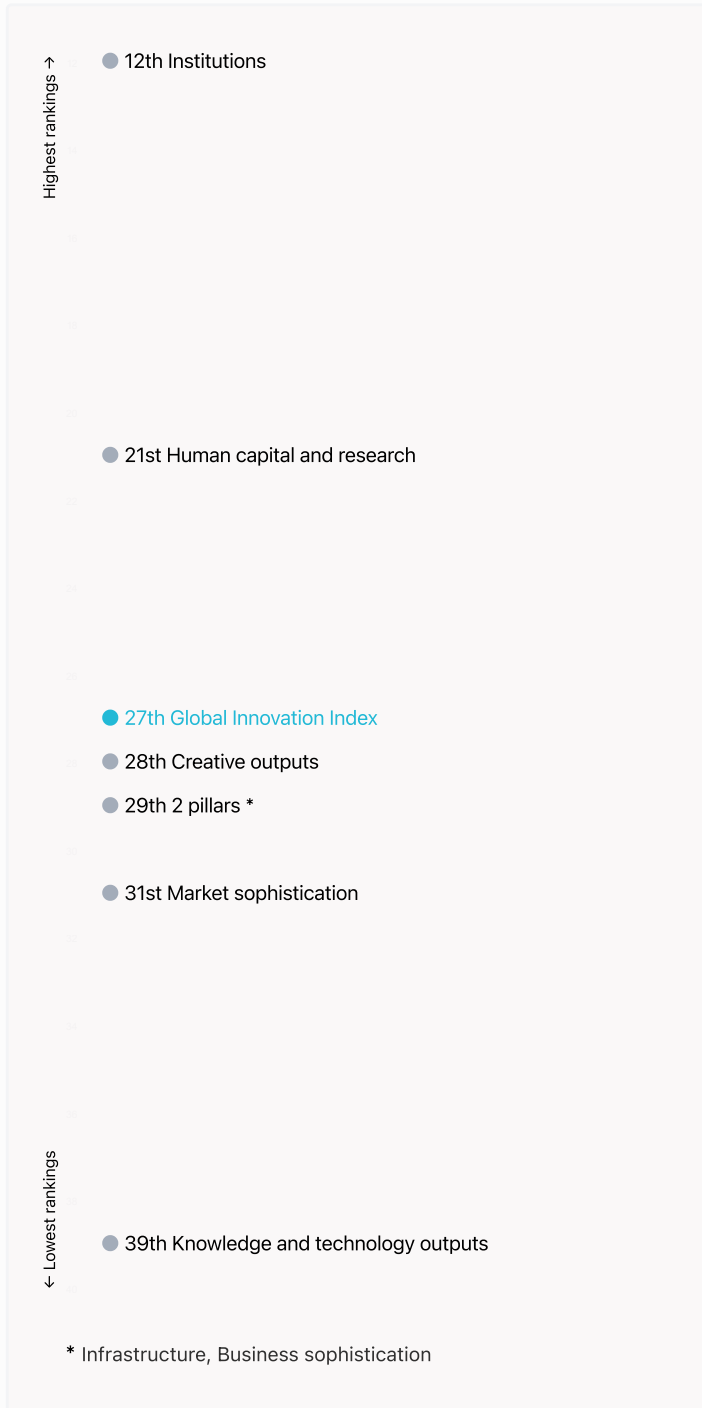


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→ Overview of New Zealand's rankings in the seven areas of the GII in 2023

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



> Highest rankings



New Zealand ranks highest in Institutions (12th) and Human capital and research (21st).

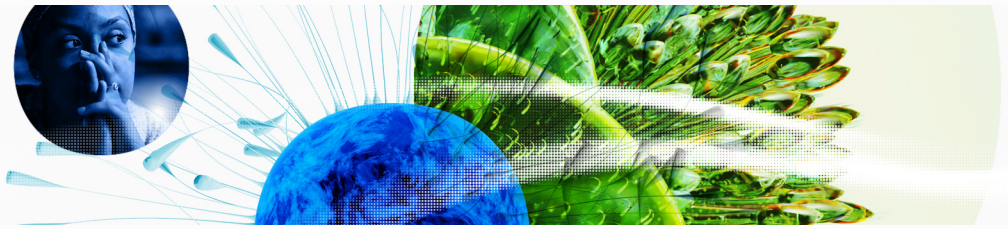
> Lowest rankings



New Zealand ranks lowest in Knowledge and technology outputs (39th), Market sophistication (31st) and Infrastructure, Business sophistication (29th).

The full WIPO Intellectual Property Statistics profile for New Zealand can be found on [this link](#).

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→ Benchmark of New Zealand against other country groupings for each of the seven areas of the GII Index

The charts show the relative position of New Zealand (blue bar) against other country groupings (grey bars), for each of the seven areas of the GII Index.

> High-Income economies

New Zealand performs above the high-income group average in Creative outputs, Market sophistication, Human capital and research, Infrastructure, and Institutions.



> South East Asia, East Asia, And Oceania

New Zealand performs above the regional average in Creative outputs, Business sophistication, Human capital and research, Infrastructure, and Institutions.



Knowledge and technology outputs

Top 10 | Score: 58.96

High income | Score: 38.62

SEAO | Score: 32.16

New Zealand | Score: 31.75

* South East Asia, East Asia, and Oceania

Creative outputs

Top 10 | 56.09

New Zealand | 43.30

High income | 40.27

SEAO | 34.40

Business sophistication

Top 10 | 64.39

High income | 46.38

New Zealand | 45.69

SEAO | 40.54

Market sophistication

Top 10 | 61.93

SEAO | 47.18

New Zealand | 46.65

High income | 46.42

Human capital and research

Top 10 | 60.28

New Zealand | 51.12

High income | 46.30

SEAO | 40.81

Infrastructure

Top 10 | 62.83

New Zealand | 56.09

High income | 55.85

SEAO | 47.13

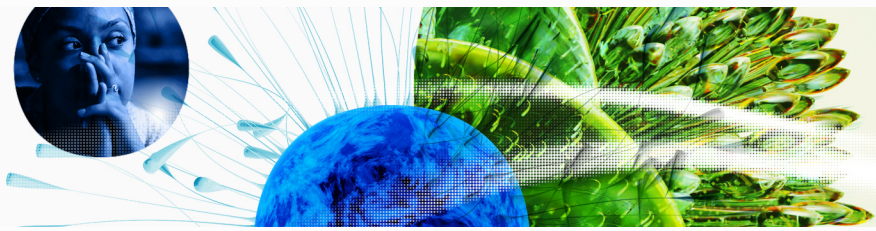
Institutions

Top 10 | 79.85

New Zealand | 78.52

High income | 68.16

SEAO | 62.54



→ Innovation strengths and weaknesses in New Zealand

The table below gives an overview of the indicator strengths and weaknesses of New Zealand in the GII 2023.



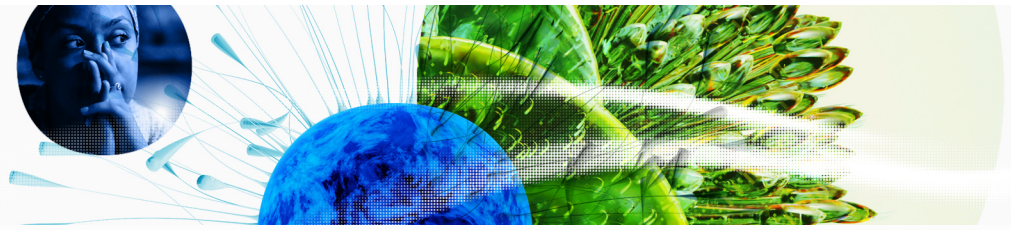
> New Zealand's main innovation strengths are **Cost of redundancy dismissal** (rank 1), **Operational stability for businesses** (rank 2) and **School life expectancy, years** (rank 2).

Strengths

Weaknesses

Rank	Code	Indicator name	Rank	Code	Indicator name
1	1.2.3	Cost of redundancy dismissal	85	4.3.2	Domestic industry diversification
2	1.1.1	Operational stability for businesses	81	5.3.4	FDI net inflows, % GDP
2	2.1.3	School life expectancy, years	75	2.1.2	Government funding/pupil, secondary, % GDP/cap
5	1.2.2	Rule of law	74	6.2.4	High-tech manufacturing, %
6	3.1.4	E-participation	74	2.1.5	Pupil-teacher ratio, secondary
6	3.1.3	Government's online service	69	3.3.1	GDP/unit of energy use
6	1.2.1	Regulatory quality	65	7.2.4	Creative goods exports, % total trade
9	4.3.1	Applied tariff rate, weighted avg., %	64	6.3.3	High-tech exports, % total trade
9	4.1.2	Domestic credit to private sector, % GDP	52	4.2.4	VC received, value, % GDP
10	5.3.3	ICT services imports, % total trade	48	6.2.2	Unicorn valuation, % GDP
11	6.1.4	Scientific and technical articles/bn PPP\$ GDP			

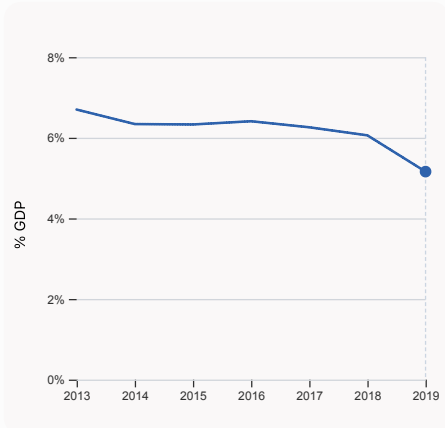
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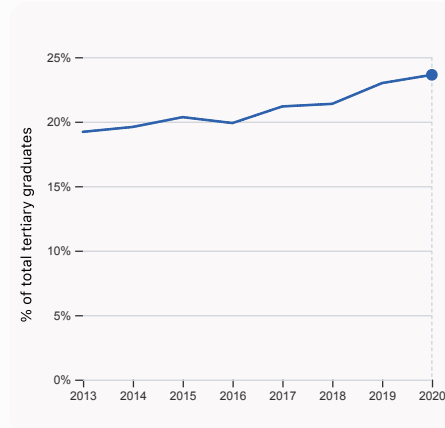
→ New Zealand's innovation system

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

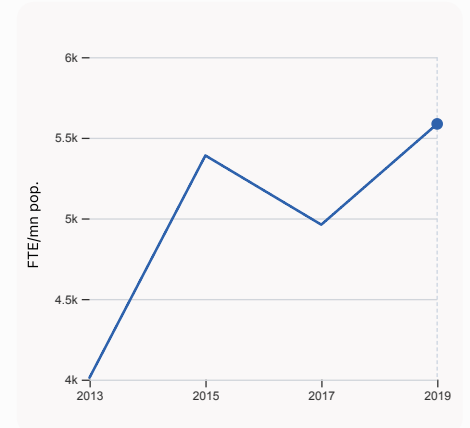
> Innovation inputs in New Zealand



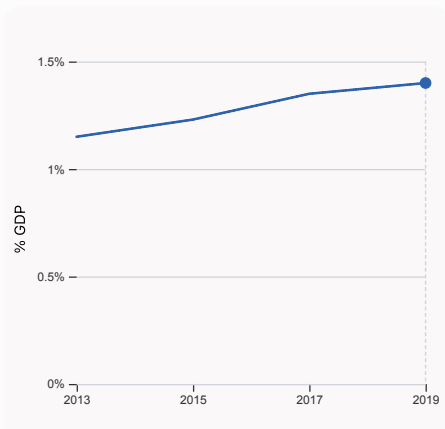
2.1.1 Expenditure on education, % GDP was equal to 5.16% GDP in 2019, down by 0.9 percentage points from the year prior – and equivalent to an indicator rank of 32.



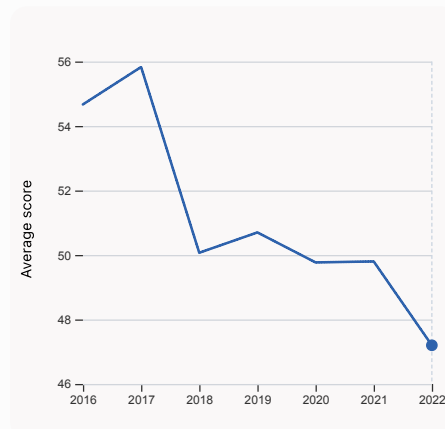
2.2.2 Graduates in science and engineering, % was equal to 23.63% of total tertiary graduates in 2020, up by 0.64 percentage points from the year prior – and equivalent to an indicator rank of 52.



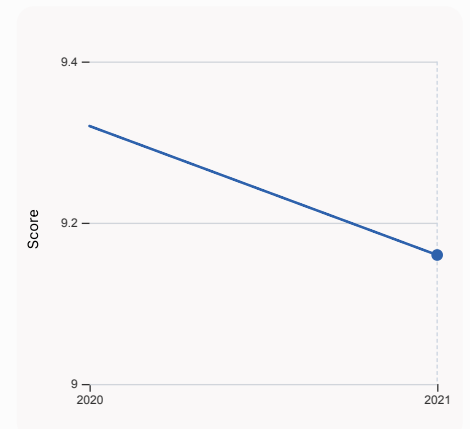
2.3.1 Researchers, FTE/mn pop. was equal to 5,585.92 FTE/mn pop. in 2019, up by 12.6% from the year prior – and equivalent to an indicator rank of 12.



2.3.2 Gross expenditure on R&D, % GDP was equal to 1.4% GDP in 2019, up by 0.05 percentage points from the year prior – and equivalent to an indicator rank of 31.

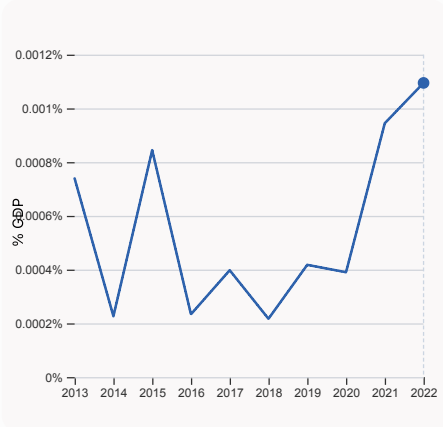
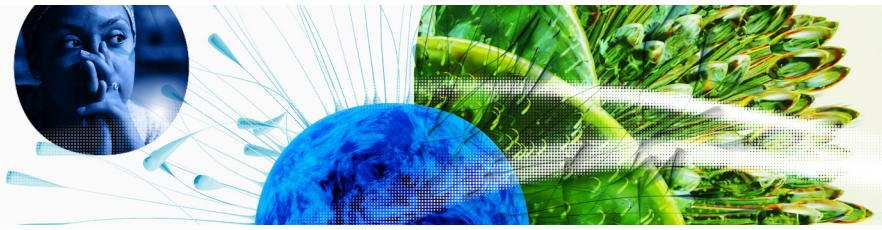


2.3.4 QS university ranking, top 3 was equal to an average score of 47.2 for the top 3 universities in 2022, down by 5.22% from the year prior – and equivalent to an indicator rank of 24.



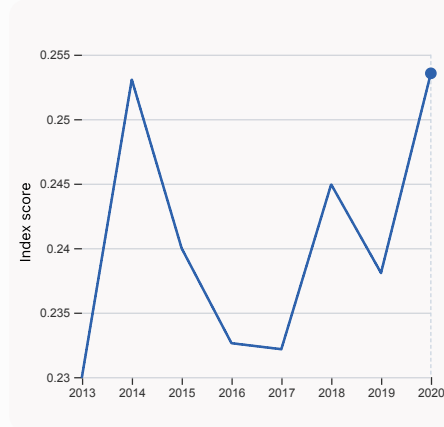
3.1.1 ICT access was equal to a score of 9.16 in 2021, down by 1.72% from the year prior – and equivalent to an indicator rank of 37.

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4.2.4 VC received, value, % GDP

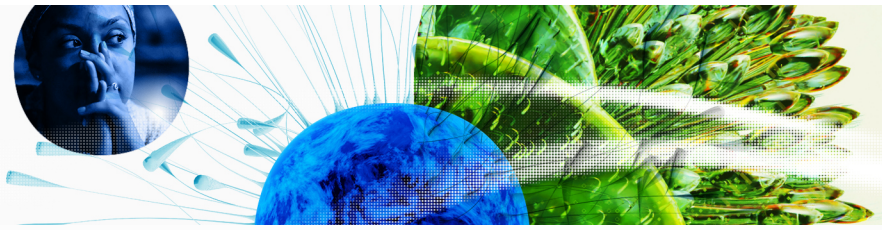
was equal to 0.00109% GDP in 2022, up by 0.00015 percentage points from the year prior – and equivalent to an indicator rank of 52.



4.3.2 Domestic industry diversification

was equal to an index score of 0.254 in 2020, up by 6.5% from the year prior – and equivalent to an indicator rank of 85.

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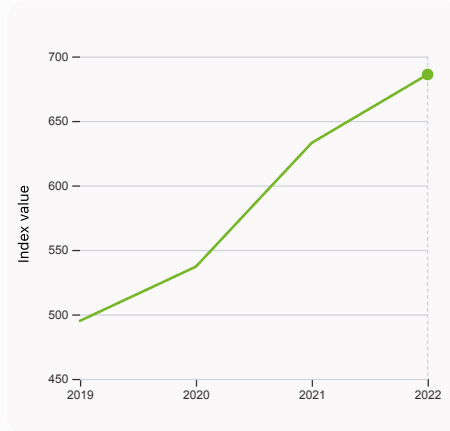


> Innovation outputs in New Zealand



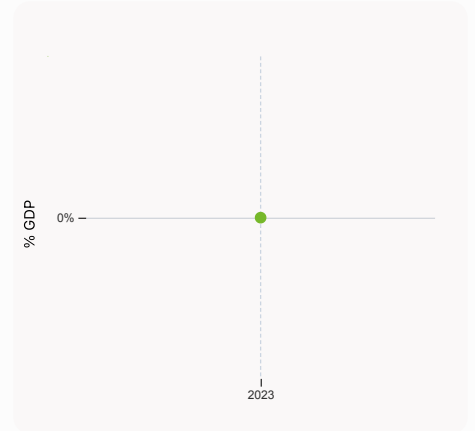
6.1.1 Patents by origin

was equal to 0.33 Thousands in 2021, down by 5.17% from the year prior – and equivalent to an indicator rank of 48.



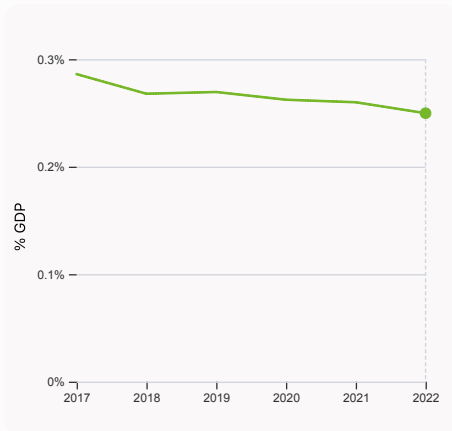
6.1.5 Citable documents H-index

was equal to an index value of 686 in 2022, up by 8.37% from the year prior – and equivalent to an indicator rank of 27.



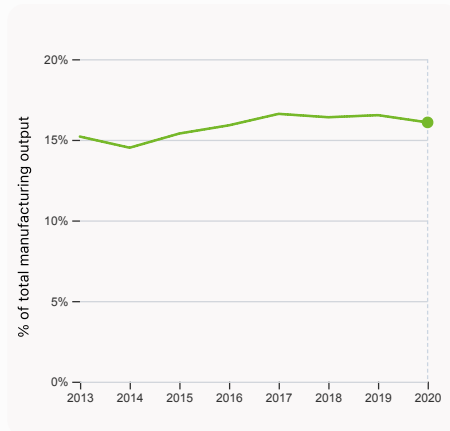
6.2.2 Unicorn valuation, % GDP

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



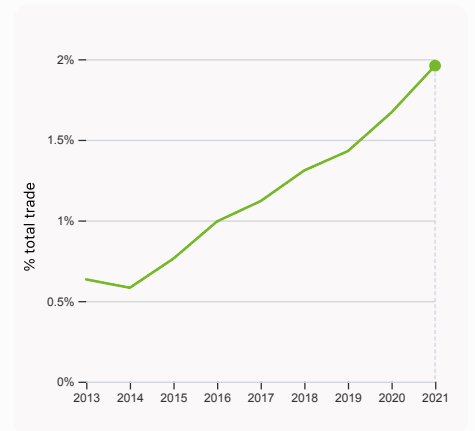
6.2.3 Software spending, % GDP

was equal to 0.25% GDP in 2022, down by 0.01 percentage points from the year prior – and equivalent to an indicator rank of 55.



6.2.4 High-tech manufacturing, %

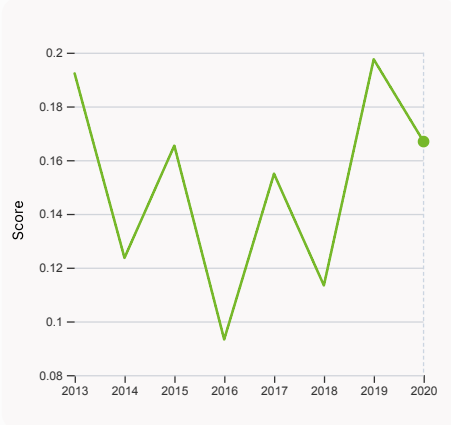
was equal to 16.08% of total manufacturing output in 2020, down by 0.45 percentage points from the year prior – and equivalent to an indicator rank of 74.



6.3.1 Intellectual property receipts, % total trade

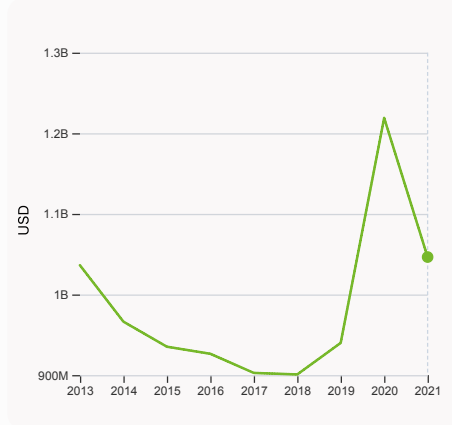
was equal to 1.96% total trade in 2021, up by 0.29 percentage points from the year prior – and equivalent to an indicator rank of 15.

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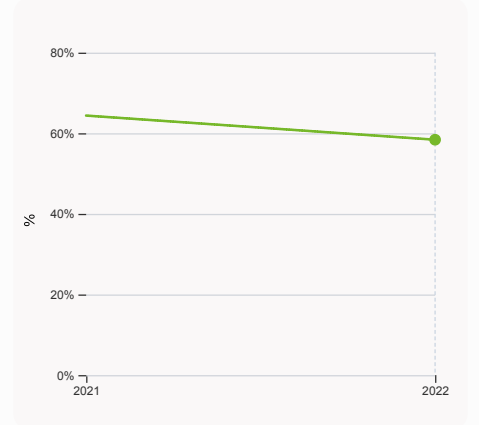
6.3.2 Production and export complexity

was equal to a score of 0.167 in 2020, down by 15.49% from the year prior – and equivalent to an indicator rank of 53.



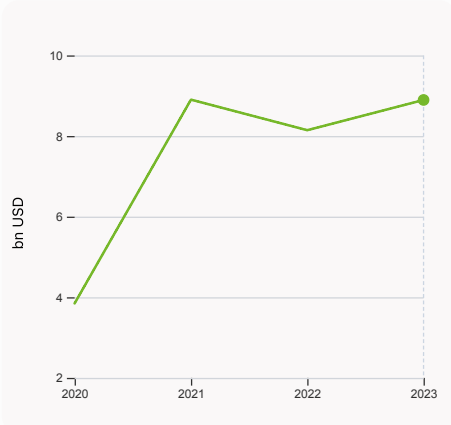
6.3.3 High-tech exports

was equal to 1,046,457,556 USD in 2021, down by 14.15% from the year prior – and equivalent to an indicator rank of 64.



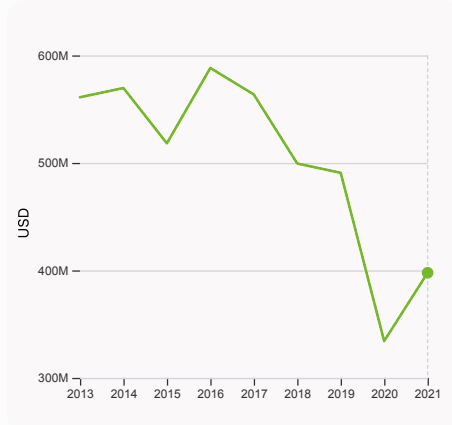
7.1.1 Intangible asset intensity, top 15, %

was equal to 58.4% in 2022, down by 5.99 percentage points from the year prior – and equivalent to an indicator rank of 39.



7.1.3 Global brand value, top 5,000

was equal to 8.895 bn USD in 2023, up by 9.21% from the year prior – and equivalent to an indicator rank of 40.



7.2.1 Cultural and creative services exports

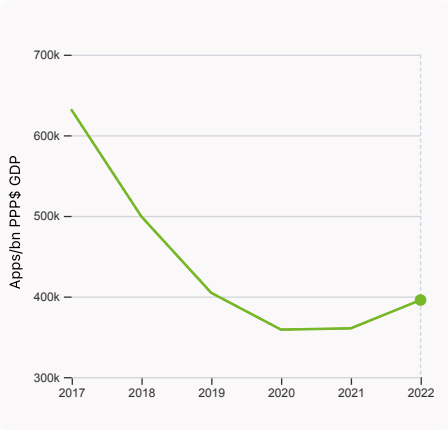
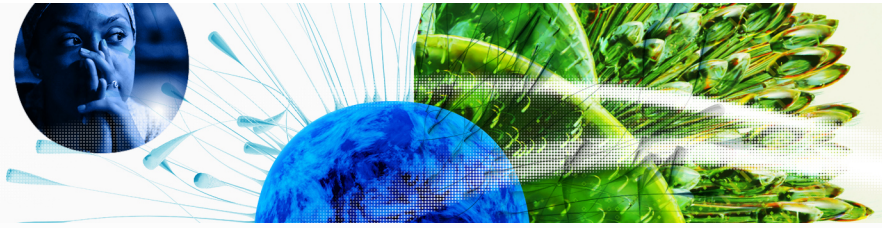
was equal to 397,789,000 USD in 2021, up by 19.011% from the year prior – and equivalent to an indicator rank of 43.



7.2.2 National feature films/mn pop. 15-69

was equal to 4.17 films/mn pop. 15-69 in 2021, up by 64.82% from the year prior – and equivalent to an indicator rank of 32.

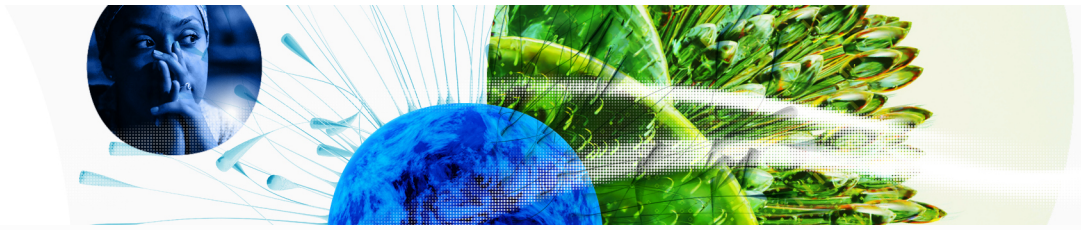
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7.3.4 Mobile app creation/bn PPP\$ GDP

was equal to 395,633.91 Apps/bn PPP\$ GDP in 2022, up by 9.75% from the year prior – and equivalent to an indicator rank of 52.

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→ New Zealand's innovation top performers

> 2.3.3 Global corporate R&D investors from New Zealand

Rank	Firm	Industry	R&D [mn EUR]	R&D Growth [%]	R&D Intensity [%]
773	XERO	Software & Computer Services	206	58	31
1253	FONTERRA CO-OPERATIVE	Food Producers	117	30	1
1503	FISHER & PAYKEL HEALTHCARE	Health Care Equipment & Services	93	13	9

Source: European Commission's Joint Research Centre (<https://iri.jrc.ec.europa.eu/scoreboard/2022-eu-industrial-rd-investment-scoreboard>).
Note: European Commission's Joint Research Centre ranks the top 2,500 firms by R&D investment annually.

> 2.3.4 QS university ranking of New Zealand's top universities

Rank	University	Score
87	THE UNIVERSITY OF AUCKLAND	62.70
217	UNIVERSITY OF OTAGO	42.00
275	VICTORIA UNIVERSITY OF WELLINGTON	36.90

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".

> 7.1.1 Top 15 intangible-asset intensive companies in New Zealand

Rank	Firm	Intensity, %
1	XERO LTD	96.82
2	FISHER & PAYKEL HEALTHCARE CORP LTD	83.67
3	SPARK NEW ZEALAND LTD	78.42

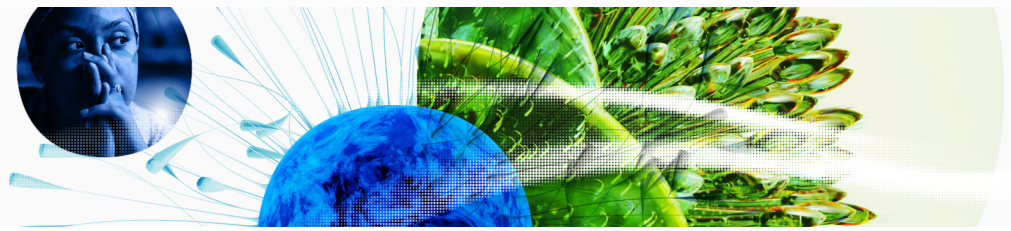
Source: Brand Finance (<https://brandirectory.com/reports/gift-2022>).
Note: Brand Finance only provides within economy ranks.

> 7.1.3 Top 5,000 companies in New Zealand with highest global brand value

Rank	Brand	Industry	Brand Value, mn USD
1	ANLENE	Food	1,265.4
2	ANCHOR	Food	1,167.3
3	SPARK	Telecoms	811.5

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

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GII 2023 rank

27

New Zealand

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
31	24	High	SEAO	5.2	261.0	50,851.1

Score / Value Rank

Score / Value Rank

Institutions			Business sophistication		
1.1 Institutional environment			5.1 Knowledge workers		
1.1.1 Operational stability for businesses*	93.8	2	5.1.1 Knowledge-intensive employment, %	n/a	n/a
1.1.2 Government effectiveness*	74.0	20	5.1.2 Firms offering formal training, %	n/a	n/a
1.2 Regulatory environment			5.2 Innovation linkages		
1.2.1 Regulatory quality*	89.0	6	5.2.1 University-industry R&D collaboration ⁺	56.2	42
1.2.2 Rule of law*	93.0	5	5.2.2 State of cluster development ⁺	50.1	45
1.2.3 Cost of redundancy dismissal	8.0	1	5.2.3 GERD financed by abroad, % GDP	0.1	31
1.3 Business environment			5.3 Knowledge absorption		
1.3.1 Policies for doing business ⁺	56.2	[44]	5.3.1 Intellectual property payments, % total trade	1.7	19
1.3.2 Entrepreneurship policies and culture ⁺	n/a	n/a	5.3.2 High-tech imports, % total trade	11.0	26
Human capital and research			6.1 Knowledge creation		
2.1 Education			6.1.1 Patents by origin/bn PPP\$ GDP		
2.1.1 Expenditure on education, % GDP	5.2	32	6.1.2 PCT patents by origin/bn PPP\$ GDP	1.3	21
2.1.2 Government funding/pupil, secondary, % GDP/cap	14.8	75	6.1.3 Utility models by origin/bn PPP\$ GDP	n/a	n/a
2.1.3 School life expectancy, years	20.3	2	6.1.4 Scientific and technical articles/bn PPP\$ GDP	n/a	n/a
2.1.4 PISA scales in reading, maths and science	502.9	13	6.1.5 Citable documents H-index	35.8	27
2.1.5 Pupil-teacher ratio, secondary	14.6	74	6.2 Knowledge impact		
2.2 Tertiary education			6.2.1 Labor productivity growth, %		
2.2.1 Tertiary enrolment, % gross	79.9	25	6.2.2 Unicorn valuation, % GDP	0.0	48
2.2.2 Graduates in science and engineering, %	23.6	52	6.2.3 Software spending, % GDP	0.2	55
2.2.3 Tertiary inbound mobility, %	17.5	11	6.2.4 High-tech manufacturing, %	16.1	74
2.3 Research and development (R&D)			6.3 Knowledge diffusion		
2.3.1 Researchers, FTE/mn pop.	5,585.9	12	6.3.1 Intellectual property receipts, % total trade	1.7	15
2.3.2 Gross expenditure on R&D, % GDP	1.4	31	6.3.2 Production and export complexity	56.0	53
2.3.3 Global corporate R&D investors, top 3, mn US\$	49.9	33	6.3.3 High-tech exports, % total trade	1.8	64
2.3.4 QS university ranking, top 3*	47.8	24	6.3.4 ICT services exports, % total trade	1.9	61
Infrastructure			7.1 Intangible assets		
3.1 Information and communication technologies (ICTs)			7.1.1 Intangible asset intensity, top 15, %		
3.1.1 ICT access*	87.6	37	7.1.2 Trademarks by origin/bn PPP\$ GDP	101.1	12
3.1.2 ICT use*	87.0	29	7.1.3 Global brand value, top 5,000	3.5	40
3.1.3 Government's online service*	95.3	6	7.1.4 Industrial designs by origin/bn PPP\$ GDP	1.3	59
3.1.4 E-participation*	95.3	6	7.2 Creative goods and services		
3.2 General infrastructure			7.2.1 Cultural and creative services exports, % total trade		
3.2.1 Electricity output, GWh/mn pop.	8,519.3	17	7.2.2 National feature films/mn pop. 15-69	4.2	32
3.2.2 Logistics performance*	68.2	25	7.2.3 Entertainment and media market/th pop. 15-69	54.6	13
3.2.3 Gross capital formation, % GDP	24.5	61	7.2.4 Creative goods exports, % total trade	0.4	65
3.3 Ecological sustainability			7.3 Online creativity		
3.3.1 GDP/unit of energy use	9.9	69	7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	34.5	20
3.3.2 Environmental performance*	64.1	26	7.3.2 Country-code TLDs/th pop. 15-69	61.1	15
3.3.3 ISO 14001 environment/bn PPP\$ GDP	1.6	54	7.3.3 GitHub commits/mn pop. 15-69	53.1	19
Market sophistication			7.3.4 Mobile app creation/bn PPP\$ GDP		
4.1 Credit			7.3.4 Mobile app creation/bn PPP\$ GDP		
4.1.1 Finance for startups and scaleups ⁺	n/a	n/a	7.3.4 Mobile app creation/bn PPP\$ GDP		
4.1.2 Domestic credit to private sector, % GDP	160.5	9	7.3.4 Mobile app creation/bn PPP\$ GDP		
4.1.3 Loans from microfinance institutions, % GDP	n/a	n/a	7.3.4 Mobile app creation/bn PPP\$ GDP		
4.2 Investment			7.3.4 Mobile app creation/bn PPP\$ GDP		
4.2.1 Market capitalization, % GDP	51.2	34	7.3.4 Mobile app creation/bn PPP\$ GDP		
4.2.2 Venture capital (VC) investors, deals/bn PPP\$ GDP	0.2	26	7.3.4 Mobile app creation/bn PPP\$ GDP		
4.2.3 VC recipients, deals/bn PPP\$ GDP	0.1	16	7.3.4 Mobile app creation/bn PPP\$ GDP		
4.2.4 VC received, value, % GDP	0.0	52	7.3.4 Mobile app creation/bn PPP\$ GDP		
4.3 Trade, diversification, and market scale			7.3.4 Mobile app creation/bn PPP\$ GDP		
4.3.1 Applied tariff rate, weighted avg., %	0.8	9	7.3.4 Mobile app creation/bn PPP\$ GDP		
4.3.2 Domestic industry diversification	75.8	85	7.3.4 Mobile app creation/bn PPP\$ GDP		
4.3.3 Domestic market scale, bn PPP\$	261.0	61	7.3.4 Mobile app creation/bn PPP\$ GDP		

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.



→ Data availability

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



> New Zealand has missing data for six indicators and outdated data for eight indicators.

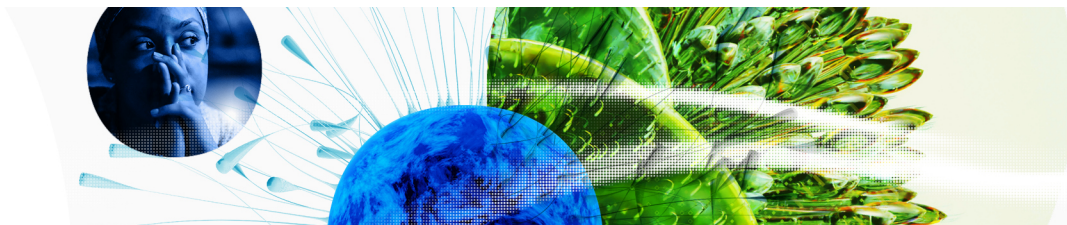
> Missing data for New Zealand

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2022	Global Entrepreneurship Monitor
4.1.1	Finance for startups and scaleups	n/a	2022	Global Entrepreneurship Monitor
4.1.3	Loans from microfinance institutions, % GDP	n/a	2021	International Monetary Fund, Financial Access Survey (FAS)
5.1.1	Knowledge-intensive employment, %	n/a	2022	International Labour Organization
5.1.2	Firms offering formal training, %	n/a	2019	World Bank Enterprise Surveys
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2021	World Intellectual Property Organization; International Monetary Fund

> Outdated data for New Zealand

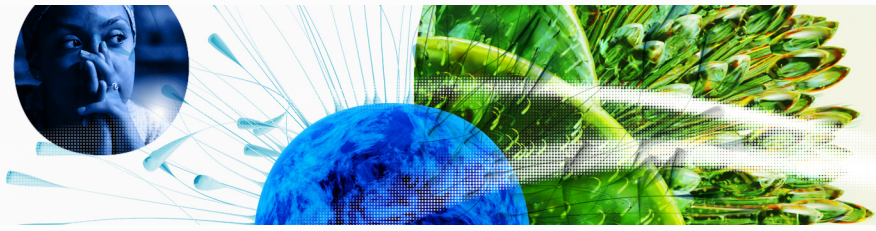
Code	Indicator name	Economy Year	Model Year	Source
2.1.1	Expenditure on education, % GDP	2019	2021	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2019	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
2.3.2	Gross expenditure on R&D, % GDP	2019	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.3	GERD performed by business, % GDP	2020	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD financed by business, %	2019	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.5	Females employed w/advanced degrees, %	2020	2022	International Labour Organization
5.2.3	GERD financed by abroad, % GDP	2019	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT

Global Innovation Index 2023



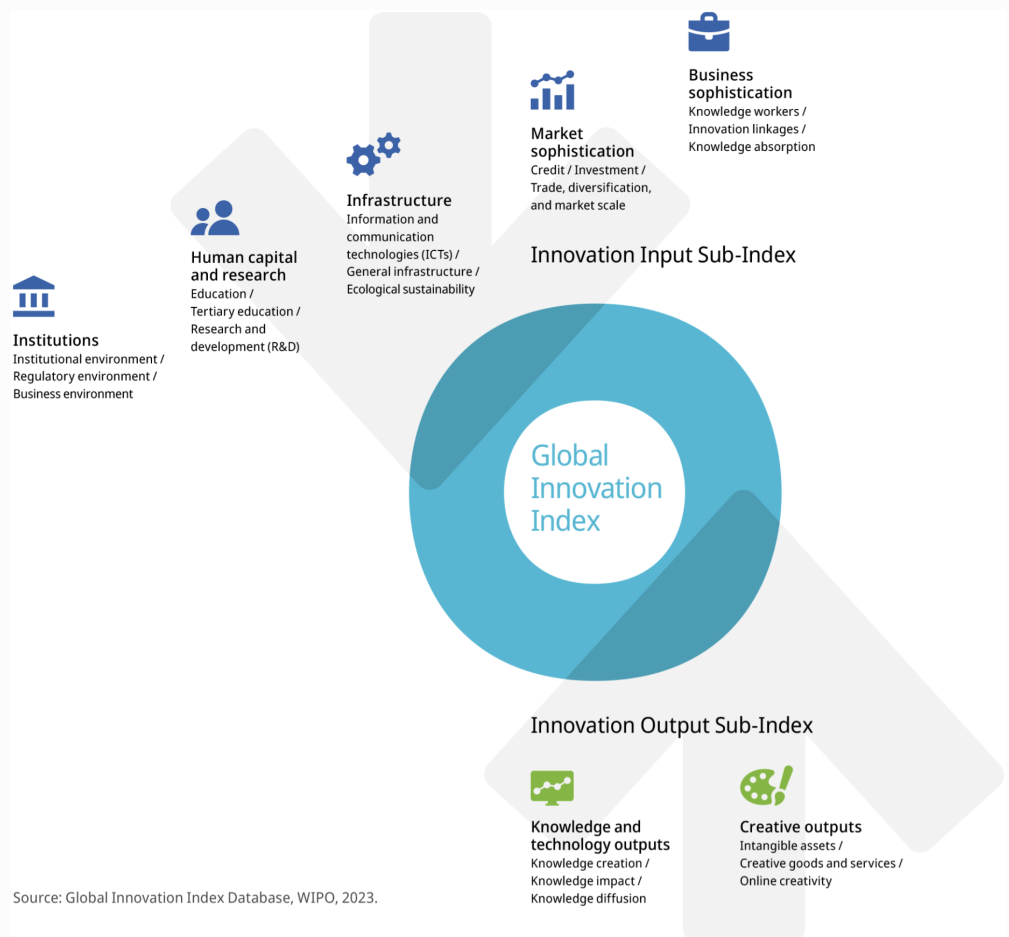
Code	Indicator name	Economy Year	Model Year	Source
5.3.5	Research talent, % in businesses	2019	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT

Global Innovation Index 2023



→ 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.



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.