

# GLOBAL INNOVATION INDEX 2018

## Indonesia

**85<sup>th</sup>** Indonesia is ranked 85th in the GII 2018, moving up 2 positions from the previous year.

The GII indicators are grouped into innovation inputs and outputs. The following table reflects Indonesia's rankings over time<sup>1</sup>.

Indonesia's ranking over time

	GII	Input	Output	Efficiency
2018	85	90	73	66
2017	87	99	73	42
2016	88	99	76	52

- Indonesia performs better in innovation outputs than innovation inputs.
- This year Indonesia improves in innovation inputs and reaches the 90th position, up from the 99th spot it held over 2016-2017.
- Indonesia ranks 73rd in innovation outputs, same position as last year and up 3 spots from 2016.
- Indonesia is quite efficient in translating its innovation inputs into outputs. It ranks 66th in the Innovation Efficiency Ratio, losing several positions from 2017 and 2016. Despite this loss of positions, Indonesia's rank in the Efficiency Ratio is stronger than its overall GII position (85th). Its rank is partly due to a much higher ranking in outputs (73rd) compared to inputs (90th).

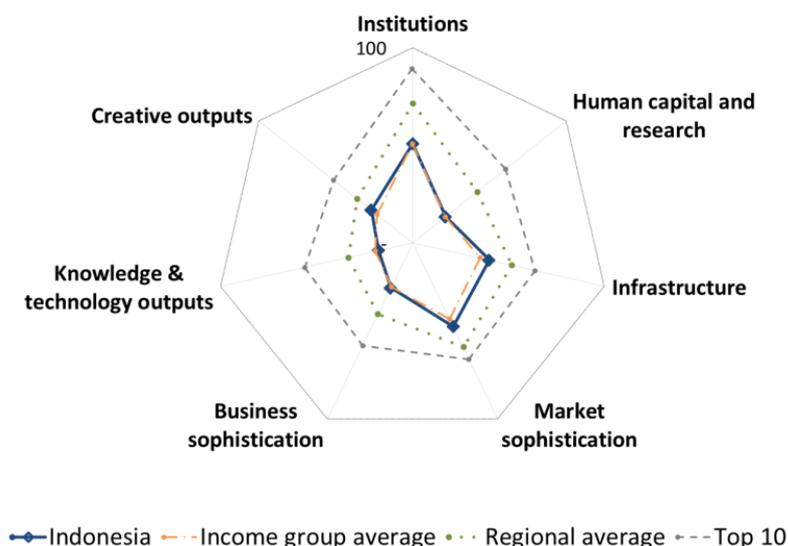
**13<sup>th</sup>** Indonesia is ranked 13th among the 30 lower-middle-income countries in the GII 2018.

**14<sup>th</sup>** Indonesia is ranked 14th among the 15 countries in South East Asia and Oceania.

<sup>1</sup> Note that year-on-year comparisons of the GII ranks are imperfect and influenced by changes in the GII model and data availability.

## Benchmarking Indonesia to other lower-middle-income countries and the South East Asia and Oceania region

Indonesia's scores by area



### Lower-middle-income countries

Indonesia has high scores in 6 of the 7 GII areas – **Institutions, Human Capital & Research, Infrastructure, Market Sophistication, Business Sophistication, and Creative Outputs**, in which it scores above the average of the lower-middle-income group.

Top scores in areas such as *Business environment, Education, General infrastructure, Trade, competition & market scale, Innovation linkages, and Intangible assets* are behind these high rankings.

### South East Asia and Oceania region

Compared to other countries in the South East Asia and Oceania region, Indonesia performs below-average in all 7 GII areas.

## Indonesia's innovation profile

### Strengths

- On the **innovation input** side, Indonesia's strengths are scattered across four of the five GII input areas.
- Three of these lie in **Business Sophistication** (89th), where it has strong performance in the indicators *University-industry research collaboration* (29th), *State of cluster development* (25th), and *Intellectual property payments* (31st).
- In **Market Sophistication** (59th), the top-ranked GII area for Indonesia, the country exhibits strengths in the area *Trade, competition & market scale* (8th) and in the indicator *Domestic market scale* (7th).
- On the input side, two additional strengths are found in **Infrastructure** (82nd), where Indonesia performs strongly in the indicators *Gross capital formation* (10th) and *GDP per unit of energy use* (30th).
- Finally, the indicator *Ease of resolving insolvency* (35th) is highlighted as Indonesia's strength in **Institutions** (97th).
- On the **innovation output** side, two of the three strengths for Indonesia are identified in **Creative Outputs** (71st) in the indicators *ICTs & organizational model creation* (34th) and *Creative goods exports* (13th).
- In **Knowledge & Technology Outputs** (86th), the country performs strongly in the indicator *Computer software spending* (31st).

## Weaknesses

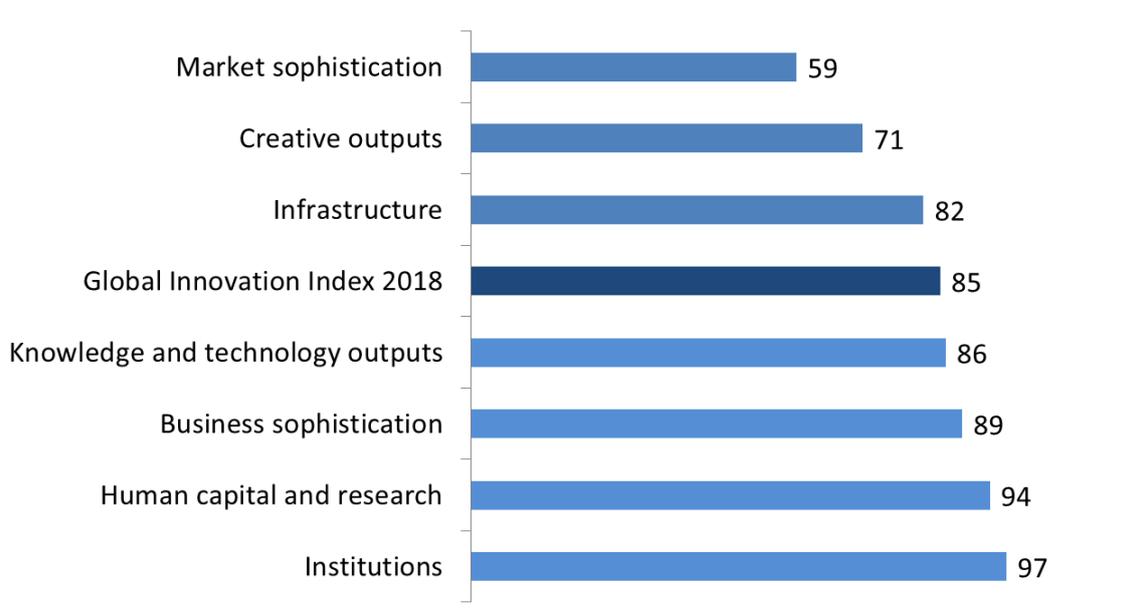
- Indonesia's relative weaknesses are mainly accrued in **innovation inputs**, scattered across three areas.
- In **Institutions** (97th), Indonesia performs relatively weakly in the area *Regulatory environment* (125th) and one of its indicators – *Cost of redundancy dismissal* (121st).
- In **Human Capital & Research** (94th), GII weaknesses are found in the indicators *Government funding per pupil* (86th), *Tertiary inbound mobility* (103rd), *Gross expenditure on R&D* (107th), and *Global R&D companies' expenditure* (40th).
- The area *Knowledge workers* (121st) as well as the indicators *Firms offering formal training* (90th) and *Patent families in 2 or more offices* (113th) are signaled as GII weaknesses in **Business Sophistication** (89th).
- On the **innovation output** side, Indonesia exhibits most of its relative weaknesses within **Knowledge & Technology Outputs** (86th) where the area *Knowledge creation* (115th) as well as the indicators *PCT patents by origin* (107th) and *Scientific & technical articles* (123rd) are marked as weak.
- The indicator *National feature films* (93rd) is highlighted as a GII weakness within **Creative Outputs** (71st).

The following figure presents a summary of Indonesia's ranks in the 7 GII areas, as well as the overall rank in the GII 2018.

### Indonesia's rank in the GII 2018 and the 7 GII areas

Rank 1 is the highest possible in each pillar

Total number of countries: 126





## Missing and Outdated Data

More and better data improve the ability of a country to understand its strengths and weaknesses and give policymakers greater capacity to plan and adapt public policies accordingly. The GII 2018 covers 126 countries that complied with the minimum indicator coverage of 35 indicators in the Innovation Input Sub-Index (66%) and 18 indicators in the Innovation Output Sub-Index (66%).

The following tables show data for Indonesia that is not available or that is outdated.

### Missing Data

Code	Indicator	Country Year	Model Year	Source
5.1.4	GERD financed by business, %	n/a	2015	UNESCO Institute for Statistics
5.2.3	GERD financed by abroad, %	n/a	2015	UNESCO Institute for Statistics
7.2.1	Cultural & creative services exports, % total trade	n/a	2016	WTO, Trade in Commercial Services

### Outdated Data

Code	Indicator	Country Year	Model Year	Source
2.2.2	Graduates in science & engineering, %	2014	2016	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2012	2016	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2009	2016	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2013	2016	UNESCO Institute for Statistics
5.1.3	GERD performed by business, % GDP	2013	2016	UNESCO Institute for Statistics
5.3.5	Research talent, % in business enterprise	2009	2016	UNESCO Institute for Statistics
6.1.1	Patents by origin/bn PPP\$ GDP	2015	2016	WIPO, Intellectual Property Statistics
6.2.5	High- & medium-high-tech manufactures, %	2013	2015	UNIDO, Industrial Statistics
7.2.2	National feature films/mn pop. 15–69	2012	2015	UNESCO Institute for Statistics
7.2.4	Printing & other media, % manufacturing	2013	2015	UNIDO, Industrial Statistics



Output rank	Input rank	Income	Region	Efficiency ratio	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2017 rank
73	90	Lower-middle	SEAO	66	264.0	3,243.0	12,377.5	87

	Score/Value	Rank
<b>Institutions</b> .....	<b>50.9</b>	<b>97</b>
1.1 Political environment.....	49.0	72
1.1.1 Political stability & safety*.....	55.9	83
1.1.2 Government effectiveness*.....	45.5	70 ◆
1.2 Regulatory environment.....	30.9	125 ○◇
1.2.1 Regulatory quality*.....	41.0	78
1.2.2 Rule of law*.....	34.2	85
1.2.3 Cost of redundancy dismissal, salary weeks.....	57.8	121 ○◇
1.3 Business environment.....	72.8	51 ◆
1.3.1 Ease of starting a business*.....	77.9	107
1.3.2 Ease of resolving insolvency*.....	67.6	35 ●◆
<b>Human capital &amp; research</b> .....	<b>21.3</b>	<b>94</b>
2.1 Education.....	33.3	101
2.1.1 Expenditure on education, % GDP.....	3.6	91
2.1.2 Government funding/pupil, secondary, % GDP/cap.....	10.5	86 ○
2.1.3 School life expectancy, years.....	12.8	77
2.1.4 PISA scales in reading, maths & science.....	395.5	63
2.1.5 Pupil-teacher ratio, secondary.....	14.1	61
2.2 Tertiary education.....	21.3	91
2.2.1 Tertiary enrolment, % gross.....	27.9	82
2.2.2 Graduates in science & engineering, % <sup>②</sup> .....	20.7	54
2.2.3 Tertiary inbound mobility, % <sup>②</sup> .....	0.1	103 ○
2.3 Research & development (R&D).....	9.4	60
2.3.1 Researchers, FTE/mn pop. <sup>②</sup> .....	89.2	86
2.3.2 Gross expenditure on R&D, % GDP <sup>②</sup> .....	0.1	107 ○
2.3.3 Global R&D companies, top 3, mn US\$.....	0.0	40 ○◇
2.3.4 QS university ranking, average score top 3*.....	34.9	37 ◆
<b>Infrastructure</b> .....	<b>39.8</b>	<b>82</b>
3.1 Information & communication technologies (ICTs).....	38.5	99
3.1.1 ICT access*.....	48.5	87
3.1.2 ICT use*.....	31.9	94
3.1.3 Government's online service*.....	36.2	102
3.1.4 E-participation*.....	37.3	101
3.2 General infrastructure.....	46.5	41 ◆
3.2.1 Electricity output, kWh/cap.....	908.5	95
3.2.2 Logistics performance*.....	42.6	62 ◆
3.2.3 Gross capital formation, % GDP.....	34.3	10 ●◆
3.3 Ecological sustainability.....	34.6	77
3.3.1 GDP/unit of energy use.....	11.6	30 ●
3.3.2 Environmental performance*.....	46.9	104
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP.....	0.7	81
<b>Market sophistication</b> .....	<b>47.6</b>	<b>59</b>
4.1 Credit.....	26.8	98
4.1.1 Ease of getting credit*.....	65.0	49
4.1.2 Domestic credit to private sector, % GDP.....	39.4	84
4.1.3 Microfinance gross loans, % GDP.....	0.0	66
4.2 Investment.....	36.9	83
4.2.1 Ease of protecting minority investors*.....	63.3	42
4.2.2 Market capitalization, % GDP.....	44.7	35
4.2.3 Venture capital deals/bn PPP\$ GDP.....	0.0	69
4.3 Trade, competition, & market scale.....	79.2	8 ●◆
4.3.1 Applied tariff rate, weighted mean, %.....	2.6	58
4.3.2 Intensity of local competition <sup>†</sup> .....	73.2	36 ◆
4.3.3 Domestic market scale, bn PPP\$.....	3,243.0	7 ●◆

	Score/Value	Rank
<b>Business sophistication</b> .....	<b>25.9</b>	<b>89</b>
5.1 Knowledge workers.....	9.5	121 ○◇
5.1.1 Knowledge-intensive employment, %.....	10.8	96
5.1.2 Firms offering formal training, % firms.....	7.7	90 ○◇
5.1.3 GERD performed by business, % GDP <sup>②</sup> .....	0.0	76
5.1.4 GERD financed by business, %.....	n/a	n/a
5.1.5 Females employed w/advanced degrees, %.....	6.0	77
5.2 Innovation linkages.....	35.7	44 ◆
5.2.1 University/industry research collaboration <sup>†</sup> .....	55.3	29 ●◆
5.2.2 State of cluster development <sup>†</sup> .....	59.9	25 ●◆
5.2.3 GERD financed by abroad, %.....	n/a	n/a
5.2.4 JV-strategic alliance deals/bn PPP\$ GDP.....	0.0	95
5.2.5 Patent families 2+ offices/bn PPP\$ GDP.....	0.0	113 ○
5.3 Knowledge absorption.....	32.6	50 ◆
5.3.1 Intellectual property payments, % total trade.....	1.0	31 ●◆
5.3.2 High-tech net imports, % total trade.....	9.0	54
5.3.3 ICT services imports, % total trade.....	1.3	54 ◆
5.3.4 FDI net inflows, % GDP.....	1.9	83
5.3.5 Research talent, % in business enterprise <sup>②</sup> .....	35.5	37 ◆
<b>Knowledge &amp; technology outputs</b> .....	<b>17.9</b>	<b>86</b>
6.1 Knowledge creation.....	3.2	115 ○
6.1.1 Patents by origin/bn PPP\$ GDP <sup>②</sup> .....	0.4	85
6.1.2 PCT patents by origin/bn PPP\$ GDP.....	0.0	107 ○◇
6.1.3 Utility models by origin/bn PPP\$ GDP.....	0.1	48
6.1.4 Scientific & technical articles/bn PPP\$ GDP.....	0.5	123 ○
6.1.5 Citable documents H index.....	12.0	56
6.2 Knowledge impact.....	36.4	66
6.2.1 Growth rate of PPP\$ GDP/worker, %.....	1.8	41
6.2.2 New businesses/th pop. 15-64.....	0.3	91
6.2.3 Computer software spending, % GDP.....	0.3	31 ●◆
6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP.....	2.5	83
6.2.5 High- & medium-high-tech manufactures, % <sup>②</sup> .....	0.3	35 ◆
6.3 Knowledge diffusion.....	14.2	97
6.3.1 Intellectual property receipts, % total trade.....	0.0	78
6.3.2 High-tech net exports, % total trade.....	3.3	43
6.3.3 ICT services exports, % total trade.....	0.6	97
6.3.4 FDI net outflows, % GDP.....	0.3	76
<b>Creative outputs</b> .....	<b>27.0</b>	<b>71</b>
7.1 Intangible assets.....	39.1	69
7.1.1 Trademarks by origin/bn PPP\$ GDP.....	16.1	92
7.1.2 Industrial designs by origin/bn PPP\$ GDP.....	0.9	71
7.1.3 ICTs & business model creation <sup>†</sup> .....	65.1	48 ◆
7.1.4 ICTs & organizational model creation <sup>†</sup> .....	63.2	34 ●◆
7.2 Creative goods & services.....	26.4	53 ◆
7.2.1 Cultural & creative services exports, % total trade.....	n/a	n/a
7.2.2 National feature films/mn pop. 15-69 <sup>②</sup> .....	0.5	93 ○
7.2.3 Entertainment & Media market/th pop. 15-69.....	2.1	52 ◆
7.2.4 Printing & other media, % manufacturing <sup>②</sup> .....	0.5	82
7.2.5 Creative goods exports, % total trade.....	4.5	13 ●◆
7.3 Online creativity.....	3.4	79
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69.....	1.5	87
7.3.2 Country-code TLDs/th pop. 15-69.....	0.4	95
7.3.3 Wikipedia edits/mn pop. 15-69.....	2.0	99
7.3.4 Mobile app creation/bn PPP\$ GDP.....	10.3	58

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; \* an index; † a survey question.

② indicates that the country'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; see page 75 of this appendix for details.