

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2018 rank
<b>45</b>	<b>81</b>	<b>Lower middle</b>	<b>EUR</b>	<b>4.0</b>	<b>25.2</b>	<b>7,304.5</b>	<b>48</b>
				Score/Value	Rank		
<b>INSTITUTIONS</b> .....				<b>58.4</b>	<b>82</b>		
<b>1.1</b>	<b>Political environment</b> .....		<b>43.2</b>	<b>96</b>			
1.1.1	Political and operational stability*.....		61.4	91			
1.1.2	Government effectiveness*.....		34.2	97			
<b>1.2</b>	<b>Regulatory environment</b> .....		<b>57.1</b>	<b>91</b>			
1.2.1	Regulatory quality*.....		40.9	72			
1.2.2	Rule of law*.....		35.4	89			
1.2.3	Cost of redundancy dismissal, salary weeks.....		23.7	98			
<b>1.3</b>	<b>Business environment</b> .....		<b>74.8</b>	<b>47</b>	◆		
1.3.1	Ease of starting a business*.....		95.6	12	● ◆		
1.3.2	Ease of resolving insolvency*.....		54.1	63			
<b>HUMAN CAPITAL &amp; RESEARCH</b> .....				<b>30.4</b>	<b>64</b>		
<b>2.1</b>	<b>Education</b> .....		<b>57.2</b>	<b>38</b>	◆		
2.1.1	Expenditure on education, % GDP.....		6.7	11	● ◆		
2.1.2	Government funding/pupil, secondary, % GDP/cap... ..		36.3	7	● ◆		
2.1.3	School life expectancy, years.....		11.6	93			
2.1.4	PISA scales in reading, maths, & science.....		421.3	51			
2.1.5	Pupil-teacher ratio, secondary.....		9.9	28	◆		
<b>2.2</b>	<b>Tertiary education</b> .....		<b>30.3</b>	<b>66</b>			
2.2.1	Tertiary enrolment, % gross.....		41.1	70			
2.2.2	Graduates in science & engineering, %.....		22.3	47			
2.2.3	Tertiary inbound mobility, %.....		4.1	52	◆		
<b>2.3</b>	<b>Research &amp; development (R&amp;D)</b> .....		<b>3.7</b>	<b>84</b>			
2.3.1	Researchers, FTE/mn pop.....		723.9	56			
2.3.2	Gross expenditure on R&D, % GDP.....		0.3	78			
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	○ ◇		
<b>INFRASTRUCTURE</b> .....				<b>39.4</b>	<b>88</b>		
<b>3.1</b>	<b>Information &amp; communication technologies (ICTs)</b> .....		<b>72.3</b>	<b>52</b>	◆		
3.1.1	ICT access*.....		72.8	56	◆		
3.1.2	ICT use*.....		53.4	66	◆		
3.1.3	Government's online service*.....		77.1	53	◆		
3.1.4	E-participation*.....		86.0	37	◆		
<b>3.2</b>	<b>General infrastructure</b> .....		<b>21.2</b>	<b>115</b>	○		
3.2.1	Electricity output, kWh/mn pop.....		1,641.4	85			
3.2.2	Logistics performance*.....		18.4	106	○		
3.2.3	Gross capital formation, % GDP.....		19.8	95			
<b>3.3</b>	<b>Ecological sustainability</b> .....		<b>24.8</b>	<b>116</b>	○		
3.3.1	GDP/unit of energy use.....		4.5	112	○ ◇		
3.3.2	Environmental performance*.....		52.0	91			
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP..		0.2	111	○		
<b>MARKET SOPHISTICATION</b> .....				<b>49.5</b>	<b>60</b>		
<b>4.1</b>	<b>Credit</b> .....		<b>29.8</b>	<b>94</b>			
4.1.1	Ease of getting credit*.....		70.0	40			
4.1.2	Domestic credit to private sector, % GDP.....		27.1	100			
4.1.3	Microfinance gross loans, % GDP.....		0.5	29			
<b>4.2</b>	<b>Investment</b> .....		<b>68.3</b>	<b>[9]</b>			
4.2.1	Ease of protecting minority investors*.....		68.3	30			
4.2.2	Market capitalization, % GDP.....		n/a	n/a			
4.2.3	Venture capital deals/bn PPP\$ GDP.....		n/a	n/a			
<b>4.3</b>	<b>Trade, competition, &amp; market scale</b> .....		<b>50.2</b>	<b>108</b>	○		
4.3.1	Applied tariff rate, weighted avg., %.....		3.5	69			
4.3.2	Intensity of local competition*.....		63.8	86			
4.3.3	Domestic market scale, bn PPP\$.....		25.2	121	○ ◇		
<b>BUSINESS SOPHISTICATION</b> .....				<b>26.1</b>	<b>93</b>		
<b>5.1</b>	<b>Knowledge workers</b> .....		<b>33.6</b>	<b>76</b>			
5.1.1	Knowledge-intensive employment, %.....		26.5	52	◆		
5.1.2	Firms offering formal training, % firms.....		32.4	46			
5.1.3	GERD performed by business, % GDP.....		0.1	70			
5.1.4	GERD financed by business, %.....		17.9	70			
5.1.5	Females employed w/advanced degrees, %.....		13.7	48			
<b>5.2</b>	<b>Innovation linkages</b> .....		<b>14.8</b>	<b>120</b>	○		
5.2.1	University/industry research collaboration*.....		29.1	109	○		
5.2.2	State of cluster development*.....		28.2	124	○ ◇		
5.2.3	GERD financed by abroad, %.....		3.7	67			
5.2.4	JV-strategic alliance deals/bn PPP\$ GDP.....		n/a	n/a			
5.2.5	Patent families 2+ offices/bn PPP\$ GDP.....		0.1	51	◆		
<b>5.3</b>	<b>Knowledge absorption</b> .....		<b>30.0</b>	<b>82</b>			
5.3.1	Intellectual property payments, % total trade.....		0.5	61			
5.3.2	High-tech imports, % total trade.....		7.4	66			
5.3.3	ICT services imports, % total trade.....		1.9	28	● ◆		
5.3.4	FDI net inflows, % GDP.....		2.2	77			
5.3.5	Research talent, % in business enterprise.....		6.4	70	○		
<b>KNOWLEDGE &amp; TECHNOLOGY OUTPUTS</b> .....				<b>28.7</b>	<b>44</b>	◆	
<b>6.1</b>	<b>Knowledge creation</b> .....		<b>33.2</b>	<b>28</b>	● ◆		
6.1.1	Patents by origin/bn PPP\$ GDP.....		3.1	32	◆		
6.1.2	PCT patents by origin/bn PPP\$ GDP.....		0.2	49	◆		
6.1.3	Utility models by origin/bn PPP\$ GDP.....		5.9	4	● ◆		
6.1.4	Scientific & technical articles/bn PPP\$ GDP.....		6.7	66			
6.1.5	Citable documents H-index.....		4.7	96			
<b>6.2</b>	<b>Knowledge impact</b> .....		<b>35.0</b>	<b>72</b>			
6.2.1	Growth rate of PPP\$ GDP/worker, %.....		4.2	13	●		
6.2.2	New businesses/th pop. 15-64.....		1.8	54			
6.2.3	Computer software spending, % GDP.....		0.1	87			
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP.....		4.6	60			
6.2.5	High- & medium-high-tech manufactures, %.....		0.1	71			
<b>6.3</b>	<b>Knowledge diffusion</b> .....		<b>17.9</b>	<b>61</b>			
6.3.1	Intellectual property receipts, % total trade.....		0.1	45			
6.3.2	High-tech net exports, % total trade.....		0.7	74			
6.3.3	ICT services exports, % total trade.....		4.2	18	●		
6.3.4	FDI net outflows, % GDP.....		0.1	93			
<b>CREATIVE OUTPUTS</b> .....				<b>31.8</b>	<b>49</b>	◆	
<b>7.1</b>	<b>Intangible assets</b> .....		<b>53.4</b>	<b>26</b>	● ◆		
7.1.1	Trademarks by origin/bn PPP\$ GDP.....		127.1	7	● ◆		
7.1.2	Industrial designs by origin/bn PPP\$ GDP.....		12.2	11	● ◆		
7.1.3	ICTs & business model creation*.....		52.1	98			
7.1.4	ICTs & organizational model creation*.....		48.3	86			
<b>7.2</b>	<b>Creative goods &amp; services</b> .....		<b>10.5</b>	<b>83</b>			
7.2.1	Cultural & creative services exports, % total trade.....		0.9	31	◆		
7.2.2	National feature films/mn pop. 15-69.....		0.3	99	○		
7.2.3	Entertainment & Media market/th pop. 15-69.....		n/a	n/a			
7.2.4	Printing & other media, % manufacturing.....		1.0	68			
7.2.5	Creative goods exports, % total trade.....		0.2	83			
<b>7.3</b>	<b>Online creativity</b> .....		<b>9.9</b>	<b>52</b>	◆		
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69.....		2.0	78			
7.3.2	Country-code TLDs/th pop. 15-69.....		2.0	67			
7.3.3	Wikipedia edits/mn pop. 15-69.....		17.1	53			
7.3.4	Mobile app creation/bn PPP\$ GDP.....		24.3	20	● ◆		

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.