

| Output rank | Input rank | Income | Region | Population (mn) | GDP, PPP\$ | GDP per capita, PPP\$ | GII 2018 rank |
|--|--|---------------------|-------------|--|--------------|--|---------------|
| 77 | 94 | Lower middle | CSA | 21.0 | 292.8 | 13,397.5 | 88 |
| INSTITUTIONS 50.7 107 | | | | BUSINESS SOPHISTICATION 28.5 77 | | | |
| 1.1 | Political environment | | 52.6 | 72 | 5.1 | Knowledge workers | |
| 1.1.1 | Political and operational stability* | | 71.9 | 58 | 5.1.1 | Knowledge-intensive employment, %..... | |
| 1.1.2 | Government effectiveness* | | 42.9 | 80 | 5.1.2 | Firms offering formal training, % firms..... | |
| 1.2 | Regulatory environment | | 33.1 | 127 | 5.1.3 | GERD performed by business, % GDP..... | |
| 1.2.1 | Regulatory quality* | | 38.4 | 78 | 5.1.4 | GERD financed by business, %..... | |
| 1.2.2 | Rule of law* | | 47.8 | 60 | 5.1.5 | Females employed w/advanced degrees, %..... | |
| 1.2.3 | Cost of redundancy dismissal, salary weeks..... | | 58.5 | 126 | 5.2 | Innovation linkages | |
| 1.3 | Business environment | | 66.5 | 77 | 5.2.1 | University/industry research collaboration*..... | |
| 1.3.1 | Ease of starting a business* | | 87.9 | 67 | 5.2.2 | State of cluster development*..... | |
| 1.3.2 | Ease of resolving insolvency* | | 45.1 | 82 | 5.2.3 | GERD financed by abroad, %..... | |
| | | | | | 5.2.4 | JV-strategic alliance deals/bn PPP\$ GDP..... | |
| | | | | | 5.2.5 | Patent families 2+ offices/bn PPP\$ GDP..... | |
| HUMAN CAPITAL & RESEARCH 14.0 111 | | | | KNOWLEDGE & TECHNOLOGY OUTPUTS 19.9 73 | | | |
| 2.1 | Education | | 32.3 | 103 | 6.1 | Knowledge creation | |
| 2.1.1 | Expenditure on education, % GDP..... | | 2.8 | 107 | 6.1.1 | Patents by origin/bn PPP\$ GDP..... | |
| 2.1.2 | Government funding/pupil, secondary, % GDP/cap... | | 10.4 | 96 | 6.1.2 | PCT patents by origin/bn PPP\$ GDP..... | |
| 2.1.3 | School life expectancy, years..... | | 14.0 | 70 | 6.1.3 | Utility models by origin/bn PPP\$ GDP..... | |
| 2.1.4 | PISA scales in reading, maths, & science..... | | n/a | n/a | 6.1.4 | Scientific & technical articles/bn PPP\$ GDP..... | |
| 2.1.5 | Pupil-teacher ratio, secondary..... | | 17.4 | 78 | 6.1.5 | Citable documents H-index..... | |
| 2.2 | Tertiary education | | 8.0 | 113 | 6.2 | Knowledge impact | |
| 2.2.1 | Tertiary enrolment, % gross..... | | 19.0 | 96 | 6.2.1 | Growth rate of PPP\$ GDP/worker, %..... | |
| 2.2.2 | Graduates in science & engineering, %..... | | n/a | n/a | 6.2.2 | New businesses/th pop. 15-64..... | |
| 2.2.3 | Tertiary inbound mobility, %..... | | 0.5 | 96 | 6.2.3 | Computer software spending, % GDP..... | |
| 2.3 | Research & development (R&D) | | 1.6 | 95 | 6.2.4 | ISO 9001 quality certificates/bn PPP\$ GDP..... | |
| 2.3.1 | Researchers, FTE/mn pop..... | | 107.0 | 85 | 6.2.5 | High- & medium-high-tech manufactures, %..... | |
| 2.3.2 | Gross expenditure on R&D, % GDP..... | | 0.1 | 105 | 6.3 | Knowledge diffusion | |
| 2.3.3 | Global R&D companies, avg. exp. top 3, mn US\$..... | | 0.0 | 43 | 6.3.1 | Intellectual property receipts, % total trade..... | |
| 2.3.4 | QS university ranking, average score top 3*..... | | 3.2 | 75 | 6.3.2 | High-tech net exports, % total trade..... | |
| | | | | | 6.3.3 | ICT services exports, % total trade..... | |
| | | | | | 6.3.4 | FDI net outflows, % GDP..... | |
| INFRASTRUCTURE 48.5 57 | | | | CREATIVE OUTPUTS 21.8 87 | | | |
| 3.1 | Information & communication technologies (ICTs) | | 50.3 | 94 | 7.1 | Intangible assets | |
| 3.1.1 | ICT access* | | 49.7 | 88 | 7.1.1 | Trademarks by origin/bn PPP\$ GDP..... | |
| 3.1.2 | ICT use* | | 22.1 | 103 | 7.1.2 | Industrial designs by origin/bn PPP\$ GDP..... | |
| 3.1.3 | Government's online service* | | 66.7 | 75 | 7.1.3 | ICTs & business model creation*..... | |
| 3.1.4 | E-participation* | | 62.9 | 82 | 7.1.4 | ICTs & organizational model creation*..... | |
| 3.2 | General infrastructure | | 40.5 | 43 | 7.2 | Creative goods & services | |
| 3.2.1 | Electricity output, kWh/mn pop..... | | 673.8 | 102 | 7.2.1 | Cultural & creative services exports, % total trade..... | |
| 3.2.2 | Logistics performance* | | 25.0 | 89 | 7.2.2 | National feature films/mn pop. 15-69..... | |
| 3.2.3 | Gross capital formation, % GDP..... | | 36.8 | 10 | 7.2.3 | Entertainment & Media market/th pop. 15-69..... | |
| 3.3 | Ecological sustainability | | 54.7 | 12 | 7.2.4 | Printing & other media, % manufacturing..... | |
| 3.3.1 | GDP/unit of energy use..... | | 20.4 | 5 | 7.2.5 | Creative goods exports, % total trade..... | |
| 3.3.2 | Environmental performance* | | 60.6 | 63 | 7.3 | Online creativity | |
| 3.3.3 | ISO 14001 environmental certificates/bn PPP\$ GDP.. | | 0.8 | 73 | 7.3.1 | Generic top-level domains (TLDs)/th pop. 15-69..... | |
| | | | | | 7.3.2 | Country-code TLDs/th pop. 15-69..... | |
| | | | | | 7.3.3 | Wikipedia edits/mn pop. 15-69..... | |
| | | | | | 7.3.4 | Mobile app creation/bn PPP\$ GDP..... | |
| MARKET SOPHISTICATION 38.7 108 | | | | | | | |
| 4.1 | Credit | | 22.5 | 113 | | | |
| 4.1.1 | Ease of getting credit* | | 40.0 | 104 | | | |
| 4.1.2 | Domestic credit to private sector, % GDP..... | | 45.7 | 74 | | | |
| 4.1.3 | Microfinance gross loans, % GDP..... | | 0.4 | 33 | | | |
| 4.2 | Investment | | 36.5 | 95 | | | |
| 4.2.1 | Ease of protecting minority investors* | | 66.7 | 35 | | | |
| 4.2.2 | Market capitalization, % GDP..... | | 23.5 | 55 | | | |
| 4.2.3 | Venture capital deals/bn PPP\$ GDP..... | | 0.0 | 45 | | | |
| 4.3 | Trade, competition, & market scale | | 57.0 | 80 | | | |
| 4.3.1 | Applied tariff rate, weighted avg., %..... | | 8.7 | 107 | | | |
| 4.3.2 | Intensity of local competition*..... | | 65.3 | 80 | | | |
| 4.3.3 | Domestic market scale, bn PPP\$..... | | 292.8 | 57 | | | |

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.