

| Output rank                        | Input rank                                               | Income       | Region | Population (mn) | GDP, PPP\$ | GDP per capita, PPP\$ | GII 2019 rank |
|------------------------------------|----------------------------------------------------------|--------------|--------|-----------------|------------|-----------------------|---------------|
| 84                                 | 102                                                      | Lower middle | SSF    | 16.3            | 64.6       | 3,363.7               | 96            |
| Score/Value                        |                                                          |              |        | Score/Value     |            |                       |               |
| Rank                               |                                                          |              |        | Rank            |            |                       |               |
| INSTITUTIONS.....                  |                                                          |              |        | 61.4            | 73         | ◆                     |               |
| 1.1                                | Political environment.....                               |              |        | 53.2            | 80         |                       |               |
| 1.1.1                              | Political and operational stability*.....                |              |        | 71.4            | 59         | ◆                     |               |
| 1.1.2                              | Government effectiveness*.....                           |              |        | 44.2            | 88         |                       |               |
| 1.2                                | Regulatory environment.....                              |              |        | 63.3            | 71         | ◆                     |               |
| 1.2.1                              | Regulatory quality*.....                                 |              |        | 39.0            | 80         |                       |               |
| 1.2.2                              | Rule of law*.....                                        |              |        | 41.2            | 73         |                       |               |
| 1.2.3                              | Cost of redundancy dismissal, salary weeks.....          |              |        | 14.8            | 58         |                       |               |
| 1.3                                | Business environment.....                                |              |        | 67.7            | 76         |                       |               |
| 1.3.1                              | Ease of starting a business*.....                        |              |        | 91.2            | 51         | ●                     |               |
| 1.3.2                              | Ease of resolving insolvency*.....                       |              |        | 44.3            | 87         |                       |               |
| HUMAN CAPITAL & RESEARCH.....      |                                                          |              |        | 16.2            | 106        |                       |               |
| 2.1                                | Education.....                                           |              |        | 26.8            | 112        |                       |               |
| 2.1.1                              | Expenditure on education, % GDP.....                     |              |        | 4.7             | 57         |                       |               |
| 2.1.2                              | Government funding/pupil, secondary, % GDP/cap.....      |              |        | 11.4            | 89         |                       |               |
| 2.1.3                              | School life expectancy, years.....                       |              |        | 8.6             | 115        | ○ ◆                   |               |
| 2.1.4                              | PISA scales in reading, maths, & science.....            |              |        | n/a             | n/a        |                       |               |
| 2.1.5                              | Pupil-teacher ratio, secondary.....                      |              |        | 18.9            | 93         |                       |               |
| 2.2                                | Tertiary education.....                                  |              |        | 17.1            | 102        |                       |               |
| 2.2.1                              | Tertiary enrolment, % gross.....                         |              |        | 12.8            | 102        |                       |               |
| 2.2.2                              | Graduates in science & engineering, %.....               |              |        | n/a             | n/a        |                       |               |
| 2.2.3                              | Tertiary inbound mobility, %.....                        |              |        | 7.8             | 30         | ● ◆                   |               |
| 2.3                                | Research & development (R&D).....                        |              |        | 4.5             | 78         |                       |               |
| 2.3.1                              | Researchers, FTE/mn pop.....                             |              |        | 564.3           | 65         |                       |               |
| 2.3.2                              | Gross expenditure on R&D, % GDP.....                     |              |        | 0.6             | 58         | ◆                     |               |
| 2.3.3                              | Global R&D companies, avg. exp. top 3, mn \$US.....      |              |        | 0.0             | 42         | ○ ◆                   |               |
| 2.3.4                              | QS university ranking, average score top 3*.....         |              |        | 0.0             | 77         | ○ ◆                   |               |
| INFRASTRUCTURE.....                |                                                          |              |        | 27.5            | 106        |                       |               |
| 3.1                                | Information & communication technologies (ICTs)...       |              |        | 41.7            | 105        |                       |               |
| 3.1.1                              | ICT access*.....                                         |              |        | 38.4            | 107        |                       |               |
| 3.1.2                              | ICT use*.....                                            |              |        | 29.8            | 104        |                       |               |
| 3.1.3                              | Government's online service*.....                        |              |        | 47.9            | 108        |                       |               |
| 3.1.4                              | E-participation*.....                                    |              |        | 50.6            | 104        |                       |               |
| 3.2                                | General infrastructure.....                              |              |        | 18.6            | 110        |                       |               |
| 3.2.1                              | Electricity output, kWh/mn pop.....                      |              |        | 301.3           | 113        |                       |               |
| 3.2.2                              | Logistics performance*.....                              |              |        | 8.6             | 121        | ○ ◆                   |               |
| 3.2.3                              | Gross capital formation, % GDP.....                      |              |        | 30.3            | 26         | ●                     |               |
| 3.3                                | Ecological sustainability.....                           |              |        | 22.3            | 88         |                       |               |
| 3.3.1                              | GDP/unit of energy use.....                              |              |        | 11.4            | 40         | ●                     |               |
| 3.3.2                              | Environmental performance*.....                          |              |        | 30.7            | 119        |                       |               |
| 3.3.3                              | ISO 14001 environmental certificates/bn PPP\$ GDP.....   |              |        | 0.2             | 103        |                       |               |
| MARKET SOPHISTICATION.....         |                                                          |              |        | 42.3            | 95         |                       |               |
| 4.1                                | Credit.....                                              |              |        | 34.7            | 89         |                       |               |
| 4.1.1                              | Ease of getting credit*.....                             |              |        | 65.0            | 61         |                       |               |
| 4.1.2                              | Domestic credit to private sector, % GDP.....            |              |        | 28.3            | 96         |                       |               |
| 4.1.3                              | Microfinance gross loans, % GDP.....                     |              |        | 1.5             | 22         | ●                     |               |
| 4.2                                | Investment.....                                          |              |        | 44.0            | [37]       |                       |               |
| 4.2.1                              | Ease of protecting minority investors*.....              |              |        | 44.0            | 98         |                       |               |
| 4.2.2                              | Market capitalization, % GDP.....                        |              |        | n/a             | n/a        |                       |               |
| 4.2.3                              | Venture capital deals/bn PPP\$ GDP.....                  |              |        | n/a             | n/a        |                       |               |
| 4.3                                | Trade, competition, and market scale.....                |              |        | 48.2            | 120        |                       |               |
| 4.3.1                              | Applied tariff rate, weighted avg., %.....               |              |        | 11.5            | 123        | ○ ◆                   |               |
| 4.3.2                              | Intensity of local competition*.....                     |              |        | 68.0            | 68         |                       |               |
| 4.3.3                              | Domestic market scale, bn PPP\$.....                     |              |        | 64.6            | 95         |                       |               |
| BUSINESS SOPHISTICATION.....       |                                                          |              |        | 12.7            | 130        | ○ ◆                   |               |
| 5.1                                | Knowledge workers.....                                   |              |        | 5.8             | 126        | ○ ◆                   |               |
| 5.1.1                              | Knowledge-intensive employment, %.....                   |              |        | 6.4             | 111        | ◆                     |               |
| 5.1.2                              | Firms offering formal training, %.....                   |              |        | 17.4            | 81         | ◆                     |               |
| 5.1.3                              | GERD performed by business, % GDP.....                   |              |        | 0.0             | 88         | ○ ◆                   |               |
| 5.1.4                              | GERD financed by business, %.....                        |              |        | 2.1             | 91         |                       |               |
| 5.1.5                              | Females employed w/advanced degrees, %.....              |              |        | 1.8             | 104        |                       |               |
| 5.2                                | Innovation linkages.....                                 |              |        | 15.6            | 107        |                       |               |
| 5.2.1                              | University/industry research collaboration*.....         |              |        | 37.9            | 83         |                       |               |
| 5.2.2                              | State of cluster development*.....                       |              |        | 42.4            | 85         |                       |               |
| 5.2.3                              | GERD financed by abroad, % GDP.....                      |              |        | 0.0             | 52         |                       |               |
| 5.2.4                              | JV-strategic alliance deals/bn PPP\$ GDP.....            |              |        | 0.0             | 115        | ○                     |               |
| 5.2.5                              | Patent families 2+ offices/bn PPP\$ GDP.....             |              |        | 0.0             | 101        | ○ ◆                   |               |
| 5.3                                | Knowledge absorption.....                                |              |        | 16.7            | 120        |                       |               |
| 5.3.1                              | Intellectual property payments, % total trade.....       |              |        | 0.1             | 99         |                       |               |
| 5.3.2                              | High-tech imports, % total trade.....                    |              |        | 4.7             | 113        |                       |               |
| 5.3.3                              | ICT services imports, % total trade.....                 |              |        | 2.6             | 12         | ● ◆                   |               |
| 5.3.4                              | FDI net inflows, % GDP.....                              |              |        | 2.6             | 66         |                       |               |
| 5.3.5                              | Research talent, % in business enterprise.....           |              |        | 0.1             | 87         | ○ ◆                   |               |
| KNOWLEDGE & TECHNOLOGY OUTPUTS.... |                                                          |              |        | 17.7            | 74         |                       |               |
| 6.1                                | Knowledge creation.....                                  |              |        | 6.1             | 96         |                       |               |
| 6.1.1                              | Patents by origin/bn PPP\$ GDP.....                      |              |        | 0.3             | 87         |                       |               |
| 6.1.2                              | PCT patents by origin/bn PPP\$ GDP.....                  |              |        | 0.1             | 75         |                       |               |
| 6.1.3                              | Utility models by origin/bn PPP\$ GDP.....               |              |        | n/a             | n/a        |                       |               |
| 6.1.4                              | Scientific & technical articles/bn PPP\$ GDP.....        |              |        | 4.5             | 93         |                       |               |
| 6.1.5                              | Citable documents H-index.....                           |              |        | 7.0             | 90         |                       |               |
| 6.2                                | Knowledge impact.....                                    |              |        | 21.6            | 75         |                       |               |
| 6.2.1                              | Growth rate of PPP\$ GDP/worker, %.....                  |              |        | 2.7             | 33         | ●                     |               |
| 6.2.2                              | New businesses/th pop. 15-64.....                        |              |        | 0.5             | 100        |                       |               |
| 6.2.3                              | Computer software spending, % GDP.....                   |              |        | 0.0             | 40         | ●                     |               |
| 6.2.4                              | ISO 9001 quality certificates/bn PPP\$ GDP.....          |              |        | 1.1             | 101        |                       |               |
| 6.2.5                              | High- and medium-high-tech manufacturing, %.....         |              |        | 15.5            | 64         |                       |               |
| 6.3                                | Knowledge diffusion.....                                 |              |        | 25.2            | 61         |                       |               |
| 6.3.1                              | Intellectual property receipts, % total trade.....       |              |        | 0.1             | 60         |                       |               |
| 6.3.2                              | High-tech net exports, % total trade.....                |              |        | 0.4             | 82         |                       |               |
| 6.3.3                              | ICT services exports, % total trade.....                 |              |        | 4.4             | 16         | ● ◆                   |               |
| 6.3.4                              | FDI net outflows, % GDP.....                             |              |        | 0.6             | 72         |                       |               |
| CREATIVE OUTPUTS.....              |                                                          |              |        | 13.3            | 103        |                       |               |
| 7.1                                | Intangible assets.....                                   |              |        | 19.7            | 92         |                       |               |
| 7.1.1                              | Trademarks by origin/bn PPP\$ GDP.....                   |              |        | 8.5             | 112        |                       |               |
| 7.1.2                              | Global brand value, top 5,000, % GDP.....                |              |        | 15.8            | 50         |                       |               |
| 7.1.3                              | Industrial designs by origin/bn PPP\$ GDP.....           |              |        | 0.9             | 73         |                       |               |
| 7.1.4                              | ICTs & organizational model creation*.....               |              |        | 58.1            | 52         |                       |               |
| 7.2                                | Creative goods and services.....                         |              |        | 8.7             | 84         |                       |               |
| 7.2.1                              | Cultural & creative services exports, % total trade..... |              |        | 1.0             | 25         | ● ◆                   |               |
| 7.2.2                              | National feature films/mn pop. 15-69.....                |              |        | 0.2             | 106        | ○                     |               |
| 7.2.3                              | Entertainment & Media market/th pop. 15-69.....          |              |        | n/a             | n/a        |                       |               |
| 7.2.4                              | Printing and other media, % manufacturing.....           |              |        | 0.8             | 67         |                       |               |
| 7.2.5                              | Creative goods exports, % total trade.....               |              |        | 0.1             | 105        |                       |               |
| 7.3                                | Online creativity.....                                   |              |        | 5.1             | 109        |                       |               |
| 7.3.1                              | Generic top-level domains (TLDs)/th pop. 15-69.....      |              |        | 1.0             | 95         |                       |               |
| 7.3.2                              | Country-code TLDs/th pop. 15-69.....                     |              |        | 0.1             | 113        |                       |               |
| 7.3.3                              | Wikipedia edits/mn pop. 15-69.....                       |              |        | 18.5            | 110        |                       |               |
| 7.3.4                              | Mobile app creation/bn PPP\$ GDP.....                    |              |        | n/a             | n/a        |                       |               |

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.