

| Output rank                               | Input rank   | Income | Region | Population (mn) | GDP, PPP\$ | GDP per capita, PPP\$ | GII 2018 rank |
|---|--|--------|--------|-----------------|------------|-----------------------|---------------|
| 115                                       | 111  | Low    | SSF    | 19.8            | 38.8       | 1,996.1               | 124           |
|   |  |        |        | Score/Value     | Rank       |                       |               |
| <b>INSTITUTIONS</b>                       |  |        |        | 56.4            | 88         |                       |               |
| 1.1                                       | <b>Political environment</b>                               |        | 40.2   | 103             |            |                       |               |
| 1.1.1                                     | Political and operational stability*                       |        | 56.1   | 105             |            |                       |               |
| 1.1.2                                     | Government effectiveness*                                  |        | 32.3   | 102             |            |                       |               |
| 1.2                                       | <b>Regulatory environment</b>                              |        | 64.5   | 68 ●            |            |                       |               |
| 1.2.1                                     | Regulatory quality*  |        | 30.0   | 100             |            |                       |               |
| 1.2.2                                     | Rule of law*   |        | 35.7   | 86              |            |                       |               |
| 1.2.3                                     | Cost of redundancy dismissal, salary weeks                 |        | 10.5   | 33 ●            |            |                       |               |
| 1.3                                       | <b>Business environment</b>                                |        | 64.5   | 81              |            |                       |               |
| 1.3.1                                     | Ease of starting a business*                               |        | 88.2   | 64 ●            |            |                       |               |
| 1.3.2                                     | Ease of resolving insolvency*                              |        | 40.9   | 94              |            |                       |               |
| <b>HUMAN CAPITAL &amp; RESEARCH</b>       |  |        |        | 14.4            | 110        |                       |               |
| 2.1                                       | <b>Education</b>   |        | 29.4   | 109             |            |                       |               |
| 2.1.1                                     | Expenditure on education, % GDP                            |        | 4.2    | 73 ●            |            |                       |               |
| 2.1.2                                     | Government funding/pupil, secondary, % GDP/cap...          |        | 17.6   | 65              |            |                       |               |
| 2.1.3                                     | School life expectancy, years                              |        | 8.9    | 112 ○           |            |                       |               |
| 2.1.4                                     | PISA scales in reading, maths, & science                   |        | n/a    | n/a             |            |                       |               |
| 2.1.5                                     | Pupil-teacher ratio, secondary                             |        | 23.3   | 95              |            |                       |               |
| 2.2                                       | <b>Tertiary education</b>                                  |        | 12.6   | 105             |            |                       |               |
| 2.2.1                                     | Tertiary enrolment, % gross                                |        | 6.0    | 116 ○           |            |                       |               |
| 2.2.2                                     | Graduates in science & engineering, %                      |        | 15.4   | 87              |            |                       |               |
| 2.2.3                                     | Tertiary inbound mobility, %                               |        | 2.9    | 65 ●            |            |                       |               |
| 2.3                                       | <b>Research &amp; development (R&amp;D)</b>                |        | 1.2    | 102             |            |                       |               |
| 2.3.1                                     | Researchers, FTE/mn pop.                                   |        | 47.6   | 91              |            |                       |               |
| 2.3.2                                     | Gross expenditure on R&D, % GDP                            |        | 0.2    | 87              |            |                       |               |
| 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>                     |  |        |        | 31.2            | 110        |                       |               |
| 3.1                                       | <b>Information &amp; communication technologies (ICTs)</b> |        | 40.8   | 103             |            |                       |               |
| 3.1.1                                     | ICT access*  |        | 32.4   | 114             |            |                       |               |
| 3.1.2                                     | ICT use*   |        | 14.9   | 116             |            |                       |               |
| 3.1.3                                     | Government's online service*                               |        | 53.5   | 101             |            |                       |               |
| 3.1.4                                     | E-participation*   |        | 62.4   | 84 ◆            |            |                       |               |
| 3.2                                       | <b>General infrastructure</b>                              |        | 23.8   | 106             |            |                       |               |
| 3.2.1                                     | Electricity output, kWh/mn pop.                            |        | n/a    | n/a             |            |                       |               |
| 3.2.2                                     | Logistics performance*                                     |        | 26.1   | 86              |            |                       |               |
| 3.2.3                                     | Gross capital formation, % GDP                             |        | 16.3   | 114             |            |                       |               |
| 3.3                                       | <b>Ecological sustainability</b>                           |        | 29.0   | 104             |            |                       |               |
| 3.3.1                                     | GDP/unit of energy use                                     |        | n/a    | n/a             |            |                       |               |
| 3.3.2                                     | Environmental performance*                                 |        | 42.8   | 116             |            |                       |               |
| 3.3.3                                     | ISO 14001 environmental certificates/bn PPP\$ GDP..        |        | 0.2    | 117             |            |                       |               |
| <b>MARKET SOPHISTICATION</b>              |  |        |        | 36.2            | 116        |                       |               |
| 4.1                                       | <b>Credit</b>  |        | 24.9   | 108             |            |                       |               |
| 4.1.1                                     | Ease of getting credit*                                    |        | 30.0   | 115             |            |                       |               |
| 4.1.2                                     | Domestic credit to private sector, % GDP                   |        | 31.3   | 94              |            |                       |               |
| 4.1.3                                     | Microfinance gross loans, % GDP                            |        | 1.8    | 14 ●            |            |                       |               |
| 4.2                                       | <b>Investment</b>  |        | 40.0   | [72]            |            |                       |               |
| 4.2.1                                     | Ease of protecting minority investors*                     |        | 40.0   | 114 ○           |            |                       |               |
| 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                                       | <b>Trade, competition, &amp; market scale</b>              |        | 43.7   | 122 ○           |            |                       |               |
| 4.3.1                                     | Applied tariff rate, weighted avg., %                      |        | 9.1    | 108             |            |                       |               |
| 4.3.2                                     | Intensity of local competition*                            |        | 57.7   | 116             |            |                       |               |
| 4.3.3                                     | Domestic market scale, bn PPP\$                            |        | 38.8   | 106             |            |                       |               |
| <b>BUSINESS SOPHISTICATION</b>            |  |        |        | 23.3            | 111        |                       |               |
| 5.1                                       | <b>Knowledge workers</b>                                   |        | 18.1   | [111]           |            |                       |               |
| 5.1.1                                     | Knowledge-intensive employment, %                          |        | n/a    | n/a             |            |                       |               |
| 5.1.2                                     | Firms offering formal training, % firms                    |        | 24.8   | 65              |            |                       |               |
| 5.1.3                                     | GERD performed by business, % GDP                          |        | n/a    | n/a             |            |                       |               |
| 5.1.4                                     | GERD financed by business, %                               |        | 11.9   | 72 ◆            |            |                       |               |
| 5.1.5                                     | Females employed w/advanced degrees, %                     |        | 0.5    | 112 ○           |            |                       |               |
| 5.2                                       | <b>Innovation linkages</b>                                 |        | 18.1   | 105             |            |                       |               |
| 5.2.1                                     | University/industry research collaboration*                |        | 31.9   | 99              |            |                       |               |
| 5.2.2                                     | State of cluster development*                              |        | 33.3   | 115             |            |                       |               |
| 5.2.3                                     | GERD financed by abroad, %                                 |        | 1.5    | 86 ◆            |            |                       |               |
| 5.2.4                                     | JV-strategic alliance deals/bn PPP\$ GDP                   |        | 0.0    | 86              |            |                       |               |
| 5.2.5                                     | Patent families 2+ offices/bn PPP\$ GDP                    |        | n/a    | n/a             |            |                       |               |
| 5.3                                       | <b>Knowledge absorption</b>                                |        | 33.8   | 63 ●            |            |                       |               |
| 5.3.1                                     | Intellectual property payments, % total trade              |        | 0.0    | 117 ○           |            |                       |               |
| 5.3.2                                     | High-tech imports, % total trade                           |        | 4.4    | 112             |            |                       |               |
| 5.3.3                                     | ICT services imports, % total trade                        |        | 2.2    | 21 ●            |            |                       |               |
| 5.3.4                                     | FDI net inflows, % GDP                                     |        | 3.3    | 51 ●            |            |                       |               |
| 5.3.5                                     | Research talent, % in business enterprise                  |        | n/a    | n/a             |            |                       |               |
| <b>KNOWLEDGE &amp; TECHNOLOGY OUTPUTS</b> |  |        |        | 15.1            | 98         |                       |               |
| 6.1                                       | <b>Knowledge creation</b>                                  |        | 4.9    | 100             |            |                       |               |
| 6.1.1                                     | Patents by origin/bn PPP\$ GDP                             |        | 0.2    | 103             |            |                       |               |
| 6.1.2                                     | PCT patents by origin/bn PPP\$ GDP                         |        | n/a    | n/a             |            |                       |               |
| 6.1.3                                     | Utility models by origin/bn PPP\$ GDP                      |        | 0.1    | 50              |            |                       |               |
| 6.1.4                                     | Scientific & technical articles/bn PPP\$ GDP               |        | 5.5    | 75 ●            |            |                       |               |
| 6.1.5                                     | Citable documents H-index                                  |        | 4.8    | 95              |            |                       |               |
| 6.2                                       | <b>Knowledge impact</b>                                    |        | 31.1   | 90              |            |                       |               |
| 6.2.1                                     | Growth rate of PPP\$ GDP/worker, %                         |        | 2.5    | 36 ●            |            |                       |               |
| 6.2.2                                     | New businesses/th pop. 15-64                               |        | 0.2    | 95              |            |                       |               |
| 6.2.3                                     | Computer software spending, % GDP                          |        | 0.0    | 114             |            |                       |               |
| 6.2.4                                     | ISO 9001 quality certificates/bn PPP\$ GDP                 |        | 1.6    | 93              |            |                       |               |
| 6.2.5                                     | High- & medium-high-tech manufactures, %                   |        | n/a    | n/a             |            |                       |               |
| 6.3                                       | <b>Knowledge diffusion</b>                                 |        | 9.3    | 106             |            |                       |               |
| 6.3.1                                     | Intellectual property receipts, % total trade              |        | 0.0    | 80              |            |                       |               |
| 6.3.2                                     | High-tech net exports, % total trade                       |        | 0.1    | 106             |            |                       |               |
| 6.3.3                                     | ICT services exports, % total trade                        |        | 1.2    | 74 ●            |            |                       |               |
| 6.3.4                                     | FDI net outflows, % GDP                                    |        | 0.3    | 81              |            |                       |               |
| <b>CREATIVE OUTPUTS</b>                   |  |        |        | 13.5            | 120        |                       |               |
| 7.1                                       | <b>Intangible assets</b>                                   |        | 26.3   | 117             |            |                       |               |
| 7.1.1                                     | Trademarks by origin/bn PPP\$ GDP                          |        | 5.7    | 114             |            |                       |               |
| 7.1.2                                     | Industrial designs by origin/bn PPP\$ GDP                  |        | 0.5    | 84              |            |                       |               |
| 7.1.3                                     | ICTs & business model creation*                            |        | 50.0   | 104             |            |                       |               |
| 7.1.4                                     | ICTs & organizational model creation*                      |        | 39.5   | 112             |            |                       |               |
| 7.2                                       | <b>Creative goods &amp; services</b>                       |        | 1.2    | [122]           |            |                       |               |
| 7.2.1                                     | Cultural & creative services exports, % total trade        |        | 0.1    | 79              |            |                       |               |
| 7.2.2                                     | National feature films/mn pop. 15-69                       |        | 0.5    | 95              |            |                       |               |
| 7.2.3                                     | Entertainment & Media market/th pop. 15-69                 |        | n/a    | n/a             |            |                       |               |
| 7.2.4                                     | Printing & other media, % manufacturing                    |        | n/a    | n/a             |            |                       |               |
| 7.2.5                                     | Creative goods exports, % total trade                      |        | 0.0    | 119             |            |                       |               |
| 7.3                                       | <b>Online creativity</b>                                   |        | 0.0    | 127 ○           |            |                       |               |
| 7.3.1                                     | Generic top-level domains (TLDs)/th pop. 15-69             |        | 0.1    | 124 ○           |            |                       |               |
| 7.3.2                                     | Country-code TLDs/th pop. 15-69                            |        | 0.0    | 124 ○           |            |                       |               |
| 7.3.3                                     | Wikipedia edits/mn pop. 15-69                              |        | 0.0    | 125 ○           |            |                       |               |
| 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.