

| Output rank                               | Input rank   | Income       | Region       | Population (mn) | GDP, PPP\$ | GDP per capita, PPP\$ | GII 2018 rank |
|---|--|--------------|--------------|-----------------|------------|-----------------------|---------------|
| 64  | 89   | Lower middle | SSF          | 51.0            | 177.4      | 3,690.9               | 78            |
|   |  |              |              | Score/Value     | Rank       |                       |               |
| <b>INSTITUTIONS</b>                       |  |              |              | 59.2            | 78         |                       |               |
| <b>1.1</b>                                | <b>Political environment</b>                               | <b>45.9</b>  | <b>91</b>    |                 |            |                       |               |
| 1.1.1                                     | Political and operational stability*                       | 59.6         | 98           |                 |            |                       |               |
| 1.1.2                                     | Government effectiveness*                                  | 39.0         | 88           |                 |            |                       |               |
| <b>1.2</b>                                | <b>Regulatory environment</b>                              | <b>61.9</b>  | <b>76</b>    |                 |            |                       |               |
| 1.2.1                                     | Regulatory quality*  | 35.7         | 88           |                 |            |                       |               |
| 1.2.2                                     | Rule of law*   | 35.5         | 88           |                 |            |                       |               |
| 1.2.3                                     | Cost of redundancy dismissal, salary weeks                 | 15.8         | 63           |                 |            |                       |               |
| <b>1.3</b>                                | <b>Business environment</b>                                | <b>69.9</b>  | <b>67</b>    |                 |            |                       |               |
| 1.3.1                                     | Ease of starting a business*                               | 82.4         | 97           |                 |            |                       |               |
| 1.3.2                                     | Ease of resolving insolvency*                              | 57.4         | 52           | ◆               |            |                       |               |
| <b>HUMAN CAPITAL &amp; RESEARCH</b>       |  |              |              | 17.5            | 104        |                       |               |
| <b>2.1</b>                                | <b>Education</b>   | <b>33.8</b>  | <b>[100]</b> |                 |            |                       |               |
| 2.1.1                                     | Expenditure on education, % GDP                            | 5.2          | 39           |                 |            |                       |               |
| 2.1.2                                     | Government funding/pupil, secondary, % GDP/cap             | n/a          | n/a          |                 |            |                       |               |
| 2.1.3                                     | School life expectancy, years                              | 10.5         | 102          | ○               |            |                       |               |
| 2.1.4                                     | PISA scales in reading, maths, & science                   | n/a          | n/a          |                 |            |                       |               |
| 2.1.5                                     | Pupil-teacher ratio, secondary                             | 33.4         | 109          | ○               | ◇          |                       |               |
| <b>2.2</b>                                | <b>Tertiary education</b>                                  | <b>13.4</b>  | <b>104</b>   |                 |            |                       |               |
| 2.2.1                                     | Tertiary enrolment, % gross                                | 11.7         | 104          |                 |            |                       |               |
| 2.2.2                                     | Graduates in science & engineering, %                      | 16.5         | 79           |                 |            |                       |               |
| 2.2.3                                     | Tertiary inbound mobility, %                               | 0.9          | 89           |                 |            |                       |               |
| <b>2.3</b>                                | <b>Research &amp; development (R&amp;D)</b>                | <b>5.5</b>   | <b>76</b>    |                 |            |                       |               |
| 2.3.1                                     | Researchers, FTE/mn pop.                                   | 225.0        | 76           |                 |            |                       |               |
| 2.3.2                                     | Gross expenditure on R&D, % GDP                            | 0.8          | 45           | ◆               |            |                       |               |
| 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*                | 2.5          | 77           |                 |            |                       |               |
| <b>INFRASTRUCTURE</b>                     |  |              |              | 29.6            | 116        | ○                     | ◇             |
| <b>3.1</b>                                | <b>Information &amp; communication technologies (ICTs)</b> | <b>43.3</b>  | <b>100</b>   |                 |            |                       |               |
| 3.1.1                                     | ICT access*  | 39.6         | 104          |                 |            |                       |               |
| 3.1.2                                     | ICT use*   | 17.6         | 112          | ○               | ◇          |                       |               |
| 3.1.3                                     | Government's online service*                               | 62.5         | 89           |                 |            |                       |               |
| 3.1.4                                     | E-participation*   | 53.4         | 101          |                 |            |                       |               |
| <b>3.2</b>                                | <b>General infrastructure</b>                              | <b>20.9</b>  | <b>117</b>   |                 |            |                       |               |
| 3.2.1                                     | Electricity output, kWh/mn pop.                            | 201.2        | 113          | ○               | ◇          |                       |               |
| 3.2.2                                     | Logistics performance*                                     | 35.1         | 67           |                 |            |                       |               |
| 3.2.3                                     | Gross capital formation, % GDP                             | 16.8         | 112          | ○               | ◇          |                       |               |
| <b>3.3</b>                                | <b>Ecological sustainability</b>                           | <b>24.5</b>  | <b>118</b>   |                 |            |                       |               |
| 3.3.1                                     | GDP/unit of energy use                                     | 5.3          | 104          |                 |            |                       |               |
| 3.3.2                                     | Environmental performance*                                 | 47.3         | 103          |                 |            |                       |               |
| 3.3.3                                     | ISO 14001 environmental certificates/bn PPP\$ GDP          | 0.4          | 91           |                 |            |                       |               |
| <b>MARKET SOPHISTICATION</b>              |  |              |              | 51.8            | 48         |                       |               |
| <b>4.1</b>                                | <b>Credit</b>  | <b>58.1</b>  | <b>21</b>    | ◆               |            |                       |               |
| 4.1.1                                     | Ease of getting credit*                                    | 90.0         | 7            | ◆               |            |                       |               |
| 4.1.2                                     | Domestic credit to private sector, % GDP                   | 29.3         | 97           |                 |            |                       |               |
| 4.1.3                                     | Microfinance gross loans, % GDP                            | 4.2          | 6            | ◆               |            |                       |               |
| <b>4.2</b>                                | <b>Investment</b>  | <b>46.3</b>  | <b>52</b>    |                 |            |                       |               |
| 4.2.1                                     | Ease of protecting minority investors*                     | 78.3         | 10           | ◆               |            |                       |               |
| 4.2.2                                     | Market capitalization, % GDP                               | 30.0         | 49           |                 |            |                       |               |
| 4.2.3                                     | Venture capital deals/bn PPP\$ GDP                         | 0.1          | 23           | ◆               |            |                       |               |
| <b>4.3</b>                                | <b>Trade, competition, &amp; market scale</b>              | <b>51.2</b>  | <b>103</b>   |                 |            |                       |               |
| 4.3.1                                     | Applied tariff rate, weighted avg., %                      | 12.3         | 121          | ○               | ◇          |                       |               |
| 4.3.2                                     | Intensity of local competition*                            | 72.0         | 46           | ◆               |            |                       |               |
| 4.3.3                                     | Domestic market scale, bn PPP\$                            | 177.4        | 67           |                 |            |                       |               |
| <b>BUSINESS SOPHISTICATION</b>            |  |              |              | 32.2            | 61         |                       |               |
| <b>5.1</b>                                | <b>Knowledge workers</b>                                   | <b>26.3</b>  | <b>[92]</b>  |                 |            |                       |               |
| 5.1.1                                     | Knowledge-intensive employment, %                          | n/a          | n/a          |                 |            |                       |               |
| 5.1.2                                     | Firms offering formal training, % firms                    | 40.6         | 34           |                 |            |                       |               |
| 5.1.3                                     | GERD performed by business, % GDP                          | 4.1          | 66           |                 |            |                       |               |
| 5.1.4                                     | GERD financed by business, %                               | 4.3          | 83           |                 |            |                       |               |
| 5.1.5                                     | Females employed w/advanced degrees, %                     | n/a          | n/a          |                 |            |                       |               |
| <b>5.2</b>                                | <b>Innovation linkages</b>                                 | <b>45.0</b>  | <b>20</b>    | ◆               |            |                       |               |
| 5.2.1                                     | University/industry research collaboration†                | 55.1         | 29           | ◆               |            |                       |               |
| 5.2.2                                     | State of cluster development†                              | 55.4         | 34           | ◆               |            |                       |               |
| 5.2.3                                     | GERD financed by abroad, %                                 | 47.1         | 5            | ◆               |            |                       |               |
| 5.2.4                                     | JV-strategic alliance deals/bn PPP\$ GDP                   | 0.0          | 50           |                 |            |                       |               |
| 5.2.5                                     | Patent families 2+ offices/bn PPP\$ GDP                    | 0.0          | 77           |                 |            |                       |               |
| <b>5.3</b>                                | <b>Knowledge absorption</b>                                | <b>25.2</b>  | <b>100</b>   |                 |            |                       |               |
| 5.3.1                                     | Intellectual property payments, % total trade              | 1.2          | 26           | ◆               |            |                       |               |
| 5.3.2                                     | High-tech imports, % total trade                           | 9.1          | 42           |                 |            |                       |               |
| 5.3.3                                     | ICT services imports, % total trade                        | 0.3          | 116          | ○               | ◇          |                       |               |
| 5.3.4                                     | FDI net inflows, % GDP                                     | 0.8          | 111          | ○               |            |                       |               |
| 5.3.5                                     | Research talent, % in business enterprise                  | 11.4         | 63           |                 |            |                       |               |
| <b>KNOWLEDGE &amp; TECHNOLOGY OUTPUTS</b> |  |              |              | 20.1            | 72         |                       |               |
| <b>6.1</b>                                | <b>Knowledge creation</b>                                  | <b>11.3</b>  | <b>65</b>    |                 |            |                       |               |
| 6.1.1                                     | Patents by origin/bn PPP\$ GDP                             | 0.8          | 67           |                 |            |                       |               |
| 6.1.2                                     | PCT patents by origin/bn PPP\$ GDP                         | 0.0          | 76           |                 |            |                       |               |
| 6.1.3                                     | Utility models by origin/bn PPP\$ GDP                      | 0.9          | 24           |                 |            |                       |               |
| 6.1.4                                     | Scientific & technical articles/bn PPP\$ GDP               | 6.0          | 68           |                 |            |                       |               |
| 6.1.5                                     | Citable documents H-index                                  | 14.3         | 52           |                 |            |                       |               |
| <b>6.2</b>                                | <b>Knowledge impact</b>                                    | <b>30.4</b>  | <b>92</b>    |                 |            |                       |               |
| 6.2.1                                     | Growth rate of PPP\$ GDP/worker, %                         | 2.1          | 43           |                 |            |                       |               |
| 6.2.2                                     | New businesses/th pop. 15-64                               | 0.8          | 75           |                 |            |                       |               |
| 6.2.3                                     | Computer software spending, % GDP                          | 0.2          | 77           |                 |            |                       |               |
| 6.2.4                                     | ISO 9001 quality certificates/bn PPP\$ GDP                 | 3.6          | 69           |                 |            |                       |               |
| 6.2.5                                     | High- & medium-high-tech manufactures, %                   | 0.1          | 77           |                 |            |                       |               |
| <b>6.3</b>                                | <b>Knowledge diffusion</b>                                 | <b>18.5</b>  | <b>57</b>    |                 |            |                       |               |
| 6.3.1                                     | Intellectual property receipts, % total trade              | 0.6          | 25           | ◆               |            |                       |               |
| 6.3.2                                     | High-tech net exports, % total trade                       | 0.3          | 88           |                 |            |                       |               |
| 6.3.3                                     | ICT services exports, % total trade                        | 3.3          | 26           | ◆               |            |                       |               |
| 6.3.4                                     | FDI net outflows, % GDP                                    | 0.3          | 80           |                 |            |                       |               |
| <b>CREATIVE OUTPUTS</b>                   |  |              |              | 28.3            | 61         |                       |               |
| <b>7.1</b>                                | <b>Intangible assets</b>                                   | <b>41.1</b>  | <b>64</b>    |                 |            |                       |               |
| 7.1.1                                     | Trademarks by origin/bn PPP\$ GDP                          | 32.5         | 74           |                 |            |                       |               |
| 7.1.2                                     | Industrial designs by origin/bn PPP\$ GDP                  | 0.9          | 70           |                 |            |                       |               |
| 7.1.3                                     | ICTs & business model creation†                            | 68.9         | 33           | ◆               |            |                       |               |
| 7.1.4                                     | ICTs & organizational model creation†                      | 60.0         | 44           | ◆               |            |                       |               |
| <b>7.2</b>                                | <b>Creative goods &amp; services</b>                       | <b>30.6</b>  | <b>30</b>    | ◆               |            |                       |               |
| 7.2.1                                     | Cultural & creative services exports, % total trade        | 0.0          | 98           |                 |            |                       |               |
| 7.2.2                                     | National feature films/mn pop. 15-69                       | n/a          | n/a          |                 |            |                       |               |
| 7.2.3                                     | Entertainment & Media market/th pop. 15-69                 | 2.4          | 51           | ◆               |            |                       |               |
| 7.2.4                                     | Printing & other media, % manufacturing                    | 4.2          | 3            | ◆               |            |                       |               |
| 7.2.5                                     | Creative goods exports, % total trade                      | 0.3          | 75           |                 |            |                       |               |
| <b>7.3</b>                                | <b>Online creativity</b>                                   | <b>0.6</b>   | <b>106</b>   |                 |            |                       |               |
| 7.3.1                                     | Generic top-level domains (TLDs)/th pop. 15-69             | 1.0          | 97           |                 |            |                       |               |
| 7.3.2                                     | Country-code TLDs/th pop. 15-69                            | 0.8          | 84           |                 |            |                       |               |
| 7.3.3                                     | Wikipedia edits/mn pop. 15-69                              | 1.0          | 103          |                 |            |                       |               |
| 7.3.4                                     | Mobile app creation/bn PPP\$ GDP                           | 0.0          | 89           | ○               |            |                       |               |

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.