

| Output rank | Input rank | Income | Region | Population (mn) | GDP, PPP\$ | GDP per capita, PPP\$ | GII 2018 rank | | | |
|---|--|--------------|--------|-----------------|--|--|---------------|---|------|---------|
| 79 | 71 | Upper middle | EUR | 3.5 | 47.3 | 13,491.0 | 77 | | | |
| | | | | Score/Value | Rank | | | | | |
| INSTITUTIONS | | | | 58.9 | 79 | | | | | |
| 1.1 | Political environment | 44.3 | 94 | ◇ | 5.1 | Knowledge workers | 37.8 | 59 | | |
| 1.1.1 | Political and operational stability*..... | 63.2 | 86 | | 5.1.1 | Knowledge-intensive employment, %..... | 22.1 | 68 | | |
| 1.1.2 | Government effectiveness*..... | 34.9 | 96 | ◇ | 5.1.2 | Firms offering formal training, % firms..... | 52.4 | 16 ● | | |
| 1.2 | Regulatory environment | 68.7 | 59 | | 5.1.3 | GERD performed by business, % GDP..... | 0.1 | 67 | | |
| 1.2.1 | Regulatory quality*..... | 37.9 | 82 | | 5.1.4 | GERD financed by business, %..... | 29.1 | 62 | | |
| 1.2.2 | Rule of law*..... | 40.8 | 73 | | 5.1.5 | Females employed w/advanced degrees, %..... | 6.9 | 81 | | |
| 1.2.3 | Cost of redundancy dismissal, salary weeks..... | 9.2 | 24 | ● | 5.2 | Innovation linkages | 21.9 | 72 | | |
| 1.3 | Business environment | 63.7 | 87 | | 5.2.1 | University/industry research collaboration*..... | 27.2 | 114 ○ ◇ | | |
| 1.3.1 | Ease of starting a business*..... | 59.6 | 128 | ○ ◇ | 5.2.2 | State of cluster development*..... | 37.4 | 97 | | |
| 1.3.2 | Ease of resolving insolvency*..... | 67.8 | 34 | ● ◆ | 5.2.3 | GERD financed by abroad, %..... | 16.4 | 23 ● | | |
| HUMAN CAPITAL & RESEARCH | | | | 42.0 | 37 | ◆ | 5.2.4 | JV-strategic alliance deals/bn PPP\$ GDP | 0.0 | 58 |
| 2.1 | Education | 92.2 | [1] | | 5.2.5 | Patent families 2+ offices/bn PPP\$ GDP..... | 0.0 | 93 ○ ◇ | | |
| 2.1.1 | Expenditure on education, % GDP..... | n/a | n/a | | 5.3 | Knowledge absorption | 19.8 | 125 ○ ◇ | | |
| 2.1.2 | Government funding/pupil, secondary, % GDP/cap... .. | n/a | n/a | | 5.3.1 | Intellectual property payments, % total trade..... | 0.1 | 97 | | |
| 2.1.3 | School life expectancy, years..... | n/a | n/a | | 5.3.2 | High-tech imports, % total trade..... | 5.0 | 106 | | |
| 2.1.4 | PISA scales in reading, maths, & science..... | n/a | n/a | | 5.3.3 | ICT services imports, % total trade..... | 0.6 | 101 | | |
| 2.1.5 | Pupil-teacher ratio, secondary..... | 9.3 | 21 | ● | 5.3.4 | FDI net inflows, % GDP..... | 2.2 | 79 | | |
| 2.2 | Tertiary education | 29.7 | 71 | | 5.3.5 | Research talent, % in business enterprise..... | 7.2 | 66 | | |
| 2.2.1 | Tertiary enrolment, % gross..... | n/a | n/a | | KNOWLEDGE & TECHNOLOGY OUTPUTS | 21.8 | 65 | | | |
| 2.2.2 | Graduates in science & engineering, %..... | 20.3 | 64 | | 6.1 | Knowledge creation | 8.2 | 79 | | |
| 2.2.3 | Tertiary inbound mobility, %..... | 7.1 | 31 | ◆ | 6.1.1 | Patents by origin/bn PPP\$ GDP..... | 1.9 | 46 | | |
| 2.3 | Research & development (R&D) | 4.1 | 79 | | 6.1.2 | PCT patents by origin/bn PPP\$ GDP..... | 0.1 | 66 | | |
| 2.3.1 | Researchers, FTE/mn pop..... | 463.9 | 70 | | 6.1.3 | Utility models by origin/bn PPP\$ GDP..... | n/a | n/a | | |
| 2.3.2 | Gross expenditure on R&D, % GDP..... | 0.2 | 89 | | 6.1.4 | Scientific & technical articles/bn PPP\$ GDP..... | 8.0 | 58 | | |
| 2.3.3 | Global R&D companies, avg. exp. top 3, mn US\$..... | 0.0 | 43 | ○ ◇ | 6.1.5 | Citable documents H-index..... | 3.3 | 111 ○ | | |
| 2.3.4 | QS university ranking, average score top 3*..... | 7.0 | 67 | | 6.2 | Knowledge impact | 42.0 | 41 | | |
| INFRASTRUCTURE | | | | 35.3 | 100 | ◇ | 6.2.1 | Growth rate of PPP\$ GDP/worker, %..... | 3.7 | 15 ● |
| 3.1 | Information & communication technologies (ICTs) | 50.1 | 95 | | 6.2.2 | New businesses/th pop. 15-64..... | 1.1 | 67 | | |
| 3.1.1 | ICT access*..... | 65.8 | 66 | | 6.2.3 | Computer software spending, % GDP..... | 0.1 | 92 | | |
| 3.1.2 | ICT use*..... | 48.1 | 74 | | 6.2.4 | ISO 9001 quality certificates/bn PPP\$ GDP..... | 25.4 | 8 ● ◆ | | |
| 3.1.3 | Government's online service*..... | 43.1 | 112 | ○ ◇ | 6.2.5 | High- & medium-high-tech manufactures, %..... | 0.2 | 64 | | |
| 3.1.4 | E-participation*..... | 43.3 | 109 | ◇ | 6.3 | Knowledge diffusion | 15.3 | 76 | | |
| 3.2 | General infrastructure | 25.5 | 99 | | 6.3.1 | Intellectual property receipts, % total trade..... | 0.2 | 42 ◆ | | |
| 3.2.1 | Electricity output, kWh/mn pop..... | 5,047.4 | 43 | | 6.3.2 | High-tech net exports, % total trade..... | 2.4 | 50 | | |
| 3.2.2 | Logistics performance*..... | 34.8 | 71 | | 6.3.3 | ICT services exports, % total trade..... | 1.8 | 60 | | |
| 3.2.3 | Gross capital formation, % GDP..... | 17.2 | 108 | ○ | 6.3.4 | FDI net outflows, % GDP..... | 0.4 | 75 | | |
| 3.3 | Ecological sustainability | 30.4 | 92 | ◇ | CREATIVE OUTPUTS | | | | | |
| 3.3.1 | GDP/unit of energy use..... | 5.6 | 102 | ◇ | 7.1 | Intangible assets | 27.2 | 115 ○ ◇ | | |
| 3.3.2 | Environmental performance*..... | 41.8 | 117 | ○ ◇ | 7.1.1 | Trademarks by origin/bn PPP\$ GDP..... | 16.5 | 92 | | |
| 3.3.3 | ISO 14001 environmental certificates/bn PPP\$ GDP.. | 5.5 | 20 | ● | 7.1.2 | Industrial designs by origin/bn PPP\$ GDP..... | 2.4 | 46 | | |
| MARKET SOPHISTICATION | | | | 49.3 | 62 | | 7.1.3 | ICTs & business model creation*..... | 44.0 | 116 ○ ◇ |
| 4.1 | Credit | 34.3 | 71 | | 7.1.4 | ICTs & organizational model creation*..... | 39.0 | 115 ○ ◇ | | |
| 4.1.1 | Ease of getting credit*..... | 65.0 | 54 | | 7.2 | Creative goods & services | 13.2 | 74 | | |
| 4.1.2 | Domestic credit to private sector, % GDP..... | 54.4 | 59 | | 7.2.1 | Cultural & creative services exports, % total trade..... | 0.0 | 96 | | |
| 4.1.3 | Microfinance gross loans, % GDP..... | 0.8 | 25 | | 7.2.2 | National feature films/mn pop. 15-69..... | 7.3 | 26 ● ◆ | | |
| 4.2 | Investment | 58.3 | [22] | | 7.2.3 | Entertainment & Media market/th pop. 15-69..... | n/a | n/a | | |
| 4.2.1 | Ease of protecting minority investors*..... | 58.3 | 68 | | 7.2.4 | Printing & other media, % manufacturing..... | 1.2 | 53 | | |
| 4.2.2 | Market capitalization, % GDP..... | n/a | n/a | | 7.2.5 | Creative goods exports, % total trade..... | 0.4 | 67 | | |
| 4.2.3 | Venture capital deals/bn PPP\$ GDP..... | n/a | n/a | | 7.3 | Online creativity | 8.3 | 56 | | |
| 4.3 | Trade, competition, & market scale | 55.1 | 88 | | 7.3.1 | Generic top-level domains (TLDs)/th pop. 15-69..... | 2.7 | 69 | | |
| 4.3.1 | Applied tariff rate, weighted avg., %..... | 2.5 | 60 | | 7.3.2 | Country-code TLDs/th pop. 15-69..... | 2.3 | 64 | | |
| 4.3.2 | Intensity of local competition*..... | 61.9 | 97 | ◇ | 7.3.3 | Wikipedia edits/mn pop. 15-69..... | 41.7 | 34 ● ◆ | | |
| 4.3.3 | Domestic market scale, bn PPP\$..... | 47.3 | 97 | | 7.3.4 | Mobile app creation/bn PPP\$ GDP..... | 0.1 | 80 | | |

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.