2.3.4 DMC requirements were not met at the sub-
2.3.2 part level.

1.1 Political environment
1.1.1 Political and operational stability
1.1.2 Government effectiveness

1.2 Regulatory environment
1.2.1 Regulatory quality
1.2.2 Rule of law
1.2.3 Cost of redundancy dismissal, salary weeks

1.3 Business environment
1.3.1 Ease of starting a business
1.3.2 Ease of resolving insolvency

2.1 Education
2.1.1 Expenditure on education, % GDP
2.1.2 Government funding/pupil, secondary, % GDP/cap.
2.1.3 School life expectancy, years
2.1.4 PISA scales in reading, maths, & science
2.1.5 Pupil-teacher ratio, secondary

2.2 Tertiary education
2.2.1 Tertiary enrolment, % gross
2.2.2 Graduates in science & engineering, %
2.2.3 Tertiary enrolment, % gross

2.3 Research & development (R&D)
2.3.1 Researchers, FTE/mn pop
2.3.2 Gross expenditure on R&D, % GDP
2.3.3 Global R&D companies, avg. exp. top 3, mn US$
2.3.4 Q3 university ranking, average score top 3

3.1 Information & communication technologies (ICTs)
3.1.1 ICT access
3.1.2 ICT use
3.1.3 Government’s online service
3.1.4 E-participation

3.2 General infrastructure
3.2.1 Electric output, kWh/mn pop
3.2.2 Logistics performance
3.2.3 Gross capital formation, % GDP

3.3 Ecological sustainability
3.3.1 GDP/unit of energy use
3.3.2 Environmental performance
3.3.3 ISO 14001 environmental certificates/bn PPP$ GDP

4.1 Credit
4.1.1 Ease of getting credit
4.1.2 Domestic credit to private sector, % GDP
4.1.3 Microfinance gross loans, % GDP

4.2 Investment
4.2.1 Ease of protecting minority investors
4.2.2 Market capitalization, % GDP
4.2.3 Venture capital deals/bn PPP$ GDP

4.3 Trade, competition, & market scale
4.3.1 Applied tariff rate, weighted avg.
4.3.2 Intensity of local competition
4.3.3 Domestic market scale, bn PPP$

5.1 Knowledge workers
5.1.1 Knowledge-intensive employment
5.1.2 Firms offering formal training, % firms
5.1.3 GERD performed by business, % GDP
5.1.4 GERD financed by business, %
5.1.5 Females employed w/advanced degrees, %

5.2 Innovation linkages
5.2.1 University/industry research collaboration
5.2.2 State of cluster development
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

5.3 Knowledge absorption
5.3.1 Intellectual property payments, % total trade
5.3.2 ICT services imports, % total trade
5.3.3 ICT services imports, % total trade
5.3.4 FDI net inflows, % GDP
5.3.5 Research talent, % in business enterprise

6.1 Knowledge creation
6.1.1 Patents by origin/bn PPP$ GDP
6.1.2 PCT patents by origin/bn PPP$ GDP
6.1.3 Utility models by origin/bn PPP$ GDP
6.1.4 Scientific & technical articles/bn PPP$ GDP
6.1.5 Citable documents H-index

6.2 Knowledge impact
6.2.1 Growth rate of PPP$ GDP/worker
6.2.2 New businesses/tol. pop. 15-64
6.2.3 Computer software spending, % GDP
6.2.4 ISO 9001 quality certificates/bn PPP$ GDP
6.2.5 High- & medium-high-tech manufactures, %

6.3 Knowledge diffusion
6.3.1 Intellectual property receipts, % total trade
6.3.2 ICT services exports, % total trade
6.3.3 ICT services exports, % total trade
6.3.4 FDI net outflows, % GDP

7.1 Intangible assets
7.1.1 Trademarks by origin/bn PPP$ GDP
7.1.2 Industrial designs by origin/bn PPP$ GDP
7.1.3 ICTs & business model creation
7.1.4 ICTs & organizational model creation

7.2 Creative goods & services
7.2.1 Cultural & creative services exports, % total trade
7.2.2 National feature films/mn pop. 15-69
7.2.3 Entertainment & Media market/t tol. pop. 15-69
7.2.4 Printing & other media, % manufacturing
7.2.5 Creative goods exports, % total trade

7.3 Online creativity
7.3.1 Generic top-level domains (TLDs)/tol. pop. 15-69
7.3.2 Country-code TLDs/tol. pop. 15-69
7.3.3 Website edits/tol. pop. 15-69
7.3.4 Mobile app creation/bn PPP$ GDP

GII 2019 rank
112

GII 2018 rank
112