

GKI RANK

56/154

GKI SCORE

51.7

WORLD AVERAGE

48.4

URUGUAY

KEY INDICATORS

 GDP US\$ billions
 69.565

 Population
 3,473,727

 HDI
 0.817

COUNTRY PERFORMANCE SUMMARY

Uruguay is a strong performer in terms of its knowledge infrastructure. It ranks 56th out of 154 countries in the Global Knowledge Index 2021 and 52nd out of the 61 countries with very high human development.

AREAS OF STRENGTH

- + Academic freedom
- Firms producing new goods and services (%)
- Gross attendance ratio for tertiary education, location parity
- Proportion of children with stimulating home learning environment
- + Peace and stability

AREAS OF IMPROVEMENT

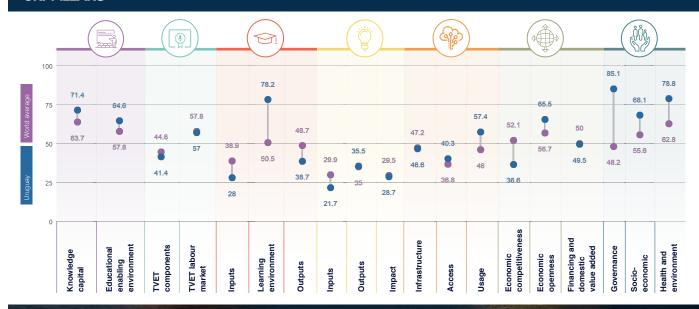
- Labour force participation rate with advanced education
- Teaching staff compensation (% tertiary expenditure)
- Researchers in business enterprises (%)
- Entrepreneurial employee activity rate
- Extent of corporate transparency

SECTORAL INDICES

	RANK	VALUE
PRE-UNIVERSITY EDUCATION	69	68
TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING	84	49.2
HIGHER EDUCATION	63	48.3
RESEARCH, DEVELOPMENT AND INNOVATION	85	28.6
INFORMATION AND COMMUNICATIONS TECHNOLOGY	67	48.1
ECONOMY	81	50.6
ENABLING ENVIRONMENT	15	77.3



GKI PILLARS



PRE-UNIVERSITY EDUCATION	Rank 69	Value 68
Knowledge capital	72	71.4
Enrolment	41	95
Net enrolment rate in primary education	30	98.3
Net enrolment rate in lower secondary education	28	98.8
Net enrolment rate in upper secondary education	50	87.7
Completion	82	71.1
Years of compulsory education in primary and secondary	3	92.3
Completion rate in upper secondary education	92	42.8
Gross intake ratio to the last grade of lower secondary education	47	78.2
Outcomes	72	48.2
Assessment of 15-year-old students in math, science and reading	50	36.5
Learning-adjusted years of schooling	68	59.8
Educational enabling environment	67	64.6
Expenditure	89	26.7
Government expenditure on primary education (% GDP)	98	24.2
Government expenditure on secondary education (% GDP)	64	28.4
Government funding per primary student (% GDP per capita)	74	32.8
Government funding per secondary student (% GDP per capita)	85	21.3
Resources	20	98.8
Pupil-trained teacher ratio in primary education	7	96.5
Pupil-trained teacher ratio in secondary education	n/a	n/a
Schools with access to computers in primary education (%)	1	100
Schools with access to computers in secondary education (%)	1	100
Early learning	25	77.4
Gross enrolment ratio in early childhood education	48	54
Proportion of children who are developmentally on track	12	81.9
Proportion of children with stimulating home learning environments	5	96.3
Pupil-trained teacher ratio in pre-primary education	n/a	n/a
Equity and inclusiveness	84	55.3
Completion rate in upper secondary education, gender parity	105	73.3
Completion rate in upper secondary education, gender parity Completion rate in upper secondary education, wealth parity	105 87	73.3 17.9
Completion rate in upper secondary education, wealth parity Completion rate in upper secondary education, location parity	87 54	17.9 74.5
Completion rate in upper secondary education, wealth parity	87	17.9 74.5 49.2
Completion rate in upper secondary education, wealth parity Completion rate in upper secondary education, location parity	87 54	17.9 74.5
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Inputs	Value
Expenditure 100 Government expenditure per tertiary student 69 Teaching staff compensation (% tertiary expenditure) 78 Enrolment 83 Enrolment in bachelor's or equivalent level (%) 71 Enrolment in master's, doctoral or equivalent (%) 83 Resources 94 Pupil-teacher ratio in tertiary education 61 Researchers in higher education (%) 67 Learning environment 6 Diversity and academic freedom 1 Tacachers in tertiary education, gender parity n/a Inbound mobility rate n/a Academic freedom 1 Equity and inclusiveness 15 Gross attendance ratio for tertiary education, gender parity 50 Gross attendance ratio for tertiary education, wealth parity 14 Gross attendance ratio for tertiary education, wealth parity 14 Gross attendance ratio for tertiary education, location parity 3 Outputs 120 Attainment 82 Educational attainment rate, bachelor's or equivalent 57 Educ	48.3
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Teachers in tertiary education, gender parity n/a Inbound mobility rate n/a Academic freedom 1 Equity and inclusiveness 15 Gross attendance ratio for tertiary education, gender parity 50 Gross attendance ratio for tertiary education, location parity 14 Gross attendance ratio for tertiary education, location parity 3 Outputs 120 Attainment 82 Educational attainment rate, bachelor's or equivalent 70 Educational attainment rate, master's or equivalent 74 Employment 99 Labour force participation rate with advanced education 117 Unemployment rate with advanced education 21 Impact 85 University-industry collaboration in R&D 97 Citable documents per R&D personnel in higher education n/a RESEARCH, DEVELOPMENT AND INNOVATION 85 Inputs 103 Inputs of R&D institutions 93 GERD ger researcher 52 Researchers per thousand labour force 61 Tertiary graduates from	78.2
Inbound mobility rate n/a Academic freedom 1 Equity and inclusiveness 15 Gross attendance ratio for tertiary education, gender parity 50 Gross attendance ratio for tertiary education, wealth parity 14 Gross attendance ratio for tertiary education, location parity 3 Outputs 120 Attainment 82 Educational attainment rate, bachelor's or equivalent 57 Educational attainment rate, master's or equivalent 57 Educational attainment rate, doctorate or equivalent 74 Employment 99 Labour force participation rate with advanced education 117 Unemployment rate with advanced education 21 Impact 85 University-industry collaboration in R&D 97 Citable documents per R&D personnel in higher education n/a RESEARCH, DEVELOPMENT AND INNOVATION 35 Inputs 103 Inputs 103 Inputs 103 Inputs of R&D institutions 93 GERD per researcher 62 <t< td=""><td>97.2</td></t<>	97.2
Academic freedom 1 Equity and Inclusiveness 15 Gross attendance ratio for tertiary education, gender parity 50 Gross attendance ratio for tertiary education, wealth parity 14 Gross attendance ratio for tertiary education, location parity 3 Outputs 120 Attainment 22 Educational attainment rate, bachelor's or equivalent 70 Educational attainment rate, master's or equivalent 77 Educational attainment rate, doctorate or equivalent 77 Educational attainment rate, doctorate or equivalent 77 Educational attainment rate with advanced education 117 Employment 99 Labour force participation rate with advanced education 117 Unemployment rate with advanced education 117 Egistance 117 University-industry collaboration in R&D 97 Citable documents per R&D personnel in higher education 17 RESEARCH, DEVELOPMENT AND INNOVATION 35 Inputs 103 Inputs of R&D institutions 93 GERD (% GDP) 68 GERD per researcher 52 Researchers per thousand labour force 61 Tertiary graduates from STEM programmes (%) 92 Inputs of R&D in business enterprises (%) 60 GERD financed by business enterprises (%) 84 Researchers in business enterprises (%) 85 Infellectual property payments (% total trade) 85 Intellectual property receipts (% total trade) 85 Intellectual property receipts (% total trade) 86 Industrial design applications	n/a
Equity and inclusiveness Gross attendance ratio for tertiary education, gender parity 50 Gross attendance ratio for tertiary education, wealth parity 14 Gross attendance ratio for tertiary education, wealth parity 13 Outputs 120 Attainment 82 Educational attainment rate, bachelor's or equivalent 57 Educational attainment rate, master's or equivalent 57 Educational attainment rate, doctorate or equivalent 58 Employment 199 Labour force participation rate with advanced education 117 Unemployment rate with advanced education 21 Impact 101 University-industry collaboration in R&D 97 Citable documents per R&D personnel in higher education 70 RESEARCH, DEVELOPMENT AND INNOVATION 85 Inputs 103 Inputs of R&D institutions 93 GERD (% GDP) 68 GERD per researcher 52 Researchers per thousand labour force 61 Tertiary graduates from STEM programmes (%) 92 Inputs of R&D in business enterprises 102 GERD performed by business enterprises (%) 60 GERD financed by business enterprises (%) 81 Firms that spend on R&D (%) 88 Researchers in business enterprises (%) 81 Infligh-skilled employment (%) 118 Inputs of societal innovation 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP)	n/a
Gross attendance ratio for tertiary education, gender parity Gross attendance ratio for tertiary education, wealth parity 14 Gross attendance ratio for tertiary education, location parity 3 Outputs 120 Attainment 82 Educational attainment rate, bachelor's or equivalent 70 Educational attainment rate, master's or equivalent 71 Educational attainment rate, doctorate or equivalent 72 Employment 199 Labour force participation rate with advanced education 117 Unemployment rate with advanced education 117 Unemployment rate with advanced education 117 University-industry collaboration in R&D 97 Citable documents per R&D personnel in higher education 118 RESEARCH, DEVELOPMENT AND INNOVATION 150 Inputs 103 Inputs 103 Inputs of R&D institutions 193 GERD (% GDP) 194 RESEARCH DEVELOPMENT AND INNOVATION 195 GERD per researcher 192 Researchers per thousand labour force 191 Tertiary graduates from STEM programmes (%) 192 Inputs of RDI in business enterprises 102 GERD performed by business enterprises (%) 190 GERD financed by business enterprises (%) 191 Researchers in business enterprises (%) 193 Researchers in business enterprises (%) 194 Researchers in business enterprises (%) 195 Researchers in business enterprises (%) 196 Researchers in business enterprises (%) 197 State of cluster development 100 Outputs Outputs 123 Patent applications (per 100 billion GDP) 198 Cut applications (per 100 billion GDP) 199 PCT applications (per 100 billion GDP) 199 PCT applications (per 100 billion GDP) 198 PCT applications (per 100 billion GDP) 198 Researcher 100 billion GDP) 199 PCT applications (per 100 billion GDP) 199 PCT applications (per 100 billion GDP) 190 Researcher 100 billion GDP) 19	97.2
Gross attendance ratio for tertiary education, wealth parity Gross attendance ratio for tertiary education, location parity 3 Outputs Attainment 82 Educational attainment rate, bachelor's or equivalent 70 Educational attainment rate, master's or equivalent 77 Educational attainment rate, doctorate or equivalent 78 Employment 99 Labour force participation rate with advanced education 117 Unemployment rate with advanced education 21 Impact 85 University-industry collaboration in R&D 97 Citable documents per R&D personnel in higher education n/a RESEARCH, DEVELOPMENT AND INNOVATION 85 Inputs 103 Inputs GERD per researcher 52 Researchers per thousand labour force 61 Tertiary graduates from STEM programmes (%) 92 Inputs of RD in business enterprises 102 GERD performed by business enterprises (%) 60 GERD financed by business enterprises (%) 81 Firms that spend on R&D (%) 18 Inputs of societal innovation High-skilled employment (%) 18 Inputs of Societal innovation 69 High-skilled employment (%) 11 Outputs Outputs Outputs Outputs Outputs Outputs Outputs of R&D institutions 84 Average documents per researcher 20 Outputs Outputs of R&D in business enterprises 102 Outputs of R&D institutions 84 Average documents per researcher Citations per document Patent applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP)	59.2
Gross attendance ratio for tertiary education, location parity 3 Outputs 120 Attainment 82 Educational attainment rate, bachelor's or equivalent 70 Educational attainment rate, master's or equivalent 57 Educational attainment rate, doctorate or equivalent 74 Employment 99 Labour force participation rate with advanced education 117 Unemployment rate with advanced education 21 Impact 85 University-industry collaboration in R&D 97 Citable documents per R&D personnel in higher education n/a RESEARCH, DEVELOPMENT AND INNOVATION 85 Inputs 103 Inputs of R&D institutions 93 GERD (% GDP) 68 GERD per researcher 52 Researchers per thousand labour force 61 Tertiary graduates from STEM programmes (%) 92 Inputs of RDI in business enterprises 102 GERD performed by business enterprises (%) 60 GERD financed by business enterprises (%) 84 Researchers in business	76.8
Outputs 120 Attainment 82 Educational attainment rate, bachelor's or equivalent 70 Educational attainment rate, master's or equivalent 57 Educational attainment rate, doctorate or equivalent 74 Employment 99 Labour force participation rate with advanced education 117 Unemployment rate with advanced education 21 Impact 85 University-industry collaboration in R&D 97 Citable documents per R&D personnel in higher education n/a RESEARCH, DEVELOPMENT AND INNOVATION 35 Inputs 103 Inputs of R&D institutions 93 GERD (% GDP) 68 GERD per researcher 52 Researchers per thousand labour force 61 Tertiary graduates from STEM programmes (%) 92 Inputs of RDI in business enterprises 102 GERD performed by business enterprises (%) 60 GERD financed by business enterprises (%) 60 GERD financed by business enterprises (%) 31 Firms that spend on R&D (%) <td< td=""><td>61</td></td<>	61
Attainment Educational attainment rate, bachelor's or equivalent Educational attainment rate, master's or equivalent Educational attainment rate, master's or equivalent Educational attainment rate, doctorate or equivalent Employment Labour force participation rate with advanced education Unemployment rate with advanced education Unemployment rate with advanced education Impact University-industry collaboration in R&D Ottable documents per R&D personnel in higher education RESEARCH, DEVELOPMENT AND INNOVATION ST Inputs Inputs Inputs Inputs of R&D institutions GERD (% GDP) GRED per researcher SE Researchers per thousand labour force GERD performed by business enterprises Inputs of RDI in business enterprises (%) GERD performed by business enterprises (%) GERD financed by business enterprises (%) GERD financed by business enterprises (%) High-skilled employment (%) Inputs of Societal innovation High-skilled employment (%) Intellectual property payments (% total trade) Average documents per researcher Outputs 72 Outputs of R&D institutions Average documents per researcher Citations per document Patent applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP)	39.8
Educational attainment rate, bachelor's or equivalent 57 Educational attainment rate, master's or equivalent 57 Educational attainment rate, master's or equivalent 74 Employment 99 Labour force participation rate with advanced education 117 Unemployment rate with advanced education 21 Impact 85 University-industry collaboration in R&D 97 Citable documents per R&D personnel in higher education n/a RESEARCH, DEVELOPMENT AND INNOVATION 85 Inputs 103 Inputs of R&D institutions 93 GERD (% GDP) 68 GERD per researcher 52 Researchers per thousand labour force 61 Tertiary graduates from STEM programmes (%) 92 Inputs of RDI in business enterprises (%) 60 GERD financed by business enterprises (%) 84 Researchers in business enterprises (%) 81 Firms that spend on R&D (%) 18 Inputs of societal innovation 69 High-skilled employment (%) 11 Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	38.7
Educational attainment rate, master's or equivalent Educational attainment rate, doctorate or equivalent Employment Labour force participation rate with advanced education Unemployment rate with advanced education University-industry collaboration in R&D Oritable documents per R&D personnel in higher education RESEARCH, DEVELOPMENT AND INNOVATION RESEARCH, DEVELOPMENT AND INNOVATION BESEARCH, DEVELOPMENT AND INNOVATION RESEARCH DEVELOPMENT AND INNOVATION BESEARCH SEARCH	13.4
Educational attainment rate, master's or equivalent Educational attainment rate, doctorate or equivalent Employment Labour force participation rate with advanced education Unemployment rate with advanced education University-industry collaboration in R&D Oritable documents per R&D personnel in higher education RESEARCH, DEVELOPMENT AND INNOVATION RESEARCH, DEVELOPMENT AND INNOVATION BESEARCH, DEVELOPMENT AND INNOVATION RESEARCH DEVELOPMENT AND INNOVATION BESEARCH SEARCH	29.4
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University-industry collaboration in R&D University-industry collaboration in R&D 97 Citable documents per R&D personnel in higher education RESEARCH, DEVELOPMENT AND INNOVATION 85 Inputs Inputs Inputs Inputs of R&D institutions GERD (% GDP) GERD per researcher Fertiary graduates from STEM programmes (%) 102 Inputs of RDI in business enterprises 102 GERD performed by business enterprises (%) GERD financed by business enterprises (%) Researchers in business enterprises (%) Firms that spend on R&D (%) Inputs of societal innovation High-skilled employment (%) Intellectual property payments (% total trade) Outputs Outputs of R&D institutions Average document Patent applications (per 100 billion GDP) PCT applications (per 100 billion GDP) FIRM SABD Institutions (per 100 billion GDP) FOT applications (per 100 billion GDP) FOT applications (per 100 billion GDP) FOT applications (per 100 billion GDP)	66.4
University-industry collaboration in R&D University-industry collaboration in R&D 97 Citable documents per R&D personnel in higher education RESEARCH, DEVELOPMENT AND INNOVATION 85 Inputs Inputs Inputs Inputs of R&D institutions GERD (% GDP) GERD per researcher Fertiary graduates from STEM programmes (%) 102 Inputs of RDI in business enterprises 102 GERD performed by business enterprises (%) GERD financed by business enterprises (%) Researchers in business enterprises (%) Firms that spend on R&D (%) Inputs of societal innovation High-skilled employment (%) Intellectual property payments (% total trade) Outputs Outputs of R&D institutions Average document Patent applications (per 100 billion GDP) PCT applications (per 100 billion GDP) FIRM SABD Institutions (per 100 billion GDP) FOT applications (per 100 billion GDP) FOT applications (per 100 billion GDP) FOT applications (per 100 billion GDP)	39.9
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University-industry collaboration in R&D 97 Citable documents per R&D personnel in higher education n/a RESEARCH, DEVELOPMENT AND INNOVATION 85 Inputs 103 Inputs 103 Inputs of R&D institutions 93 GERD (% GDP) 68 GERD per researcher 52 Researchers per thousand labour force 61 Tertiary graduates from STEM programmes (%) 92 Inputs of RDI in business enterprises (%) 60 GERD performed by business enterprises (%) 60 GERD financed by business enterprises (%) 81 Researchers in business enterprises (%) 81 Firms that spend on R&D (%) 18 Inputs of societal innovation 69 High-skilled employment (%) 31 Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	36.2
Citable documents per R&D personnel in higher education RESEARCH, DEVELOPMENT AND INNOVATION 85 Inputs 103 Inputs 103 Inputs of R&D institutions GERD (% GDP) GERD per researcher 52 Researchers per thousand labour force 61 Tertiary graduates from STEM programmes (%) 92 Inputs of RDI in business enterprises 102 GERD performed by business enterprises (%) GERD performed by business enterprises (%) 60 GERD financed by business enterprises (%) 84 Researchers in business enterprises (%) 81 Firms that spend on R&D (%) 18 Inputs of societal innovation 69 High-skilled employment (%) 31 Intellectual property payments (% total trade) 93 Average documents per researcher 01 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 15 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	36.2
Inputs Inputs Inputs of R&D institutions Inputs of R&D in business enterprises Inputs of R&D in business enterprises (%) Inputs of R&D in business enterprises (%) Inputs of R&D institutions Inputs of societal innovation Inputs of societal innovation Inputs of cluster development Inputs of cluster development Inputs of R&D institutions Intellectual property payments (% total trade) Inputs of R&D institutions Intellectual property payments Intellectual property receipts (% total trade) Industrial design applications (per 100 billion GDP) Intellectual property receipts (% total trade) Industrial design applications (per 100 billion GDP) Intellectual property receipts (% total trade) Industrial design applications (per 100 billion GDP) Intellectual property receipts (% total trade) Industrial design applications (per 100 billion GDP) Intellectual property receipts (% total trade) Intellectual property receipts (% total trade) Industrial design applications (per 100 billion GDP) Intellectual property receipts (% total trade) Intellectual prope	n/a
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Inputs of R&D institutions 93 GERD (% GDP) 68 GERD per researcher 52 Researchers per thousand labour force 61 Tertiary graduates from STEM programmes (%) 92 Inputs of RDI in business enterprises 102 GERD performed by business enterprises (%) 60 GERD financed by business enterprises (%) 84 Researchers in business enterprises (%) 81 Firms that spend on R&D (%) 18 Inputs of societal innovation 69 High-skilled employment (%) 31 Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP)	21.7
GERD (% GDP) 68 GERD per researcher 52 Researchers per thousand labour force 61 Tertiary graduates from STEM programmes (%) 92 Inputs of RDI in business enterprises 102 GERD performed by business enterprises (%) 60 GERD financed by business enterprises (%) 84 Researchers in business enterprises (%) 81 Firms that spend on R&D (%) 18 Inputs of societal innovation 69 High-skilled employment (%) 31 Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	
GERD per researcher 52 Researchers per thousand labour force 61 Tertiary graduates from STEM programmes (%) 92 Inputs of RDI in business enterprises 102 GERD performed by business enterprises (%) 60 GERD financed by business enterprises (%) 84 Researchers in business enterprises (%) 81 Firms that spend on R&D (%) 18 Inputs of societal innovation 69 High-skilled employment (%) 31 Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	18.6
Researchers per thousand labour force 61 Tertiary graduates from STEM programmes (%) 92 Inputs of RDI in business enterprises 102 GERD performed by business enterprises (%) 60 GERD financed by business enterprises (%) 84 Researchers in business enterprises (%) 81 Firms that spend on R&D (%) 18 Inputs of societal innovation 69 High-skilled employment (%) 31 Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	8.3
Tertiary graduates from STEM programmes (%) 92 Inputs of RDI in business enterprises 102 GERD performed by business enterprises (%) 60 GERD financed by business enterprises (%) 84 Researchers in business enterprises (%) 81 Firms that spend on R&D (%) 18 Inputs of societal innovation 69 High-skilled employment (%) 31 Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	25.7
Inputs of RDI in business enterprises 102 GERD performed by business enterprises (%) 60 GERD financed by business enterprises (%) 84 Researchers in business enterprises (%) 81 Firms that spend on R&D (%) 18 Inputs of societal innovation 69 High-skilled employment (%) 31 Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	8.7
GERD performed by business enterprises (%) 60 GERD financed by business enterprises (%) 84 Researchers in business enterprises (%) 81 Firms that spend on R&D (%) 18 Inputs of societal innovation 69 High-skilled employment (%) 31 Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	31.8
GERD financed by business enterprises (%) 84 Researchers in business enterprises (%) 81 Firms that spend on R&D (%) 18 Inputs of societal innovation 69 High-skilled employment (%) 31 Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	14
Researchers in business enterprises (%) 81 Firms that spend on R&D (%) 18 Inputs of societal innovation 69 High-skilled employment (%) 31 Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	2.8
Firms that spend on R&D (%) 18 Inputs of societal innovation 69 High-skilled employment (%) 31 Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	5.7
Inputs of societal innovation 69 High-skilled employment (%) 31 Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	0.4
High-skilled employment (%) 31 Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	47.1
Intellectual property payments (% total trade) 49 State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	35.5
State of cluster development 100 Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	44
Outputs 72 Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	21.9
Outputs of R&D institutions 84 Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	40.8
Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	35.5
Average documents per researcher 30 Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	39.2
Citations per document 123 Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	65.8
Patent applications (per 100 billion GDP) 88 Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) PCT applications (per 100 billion GDP) 68	13.2
Outputs of RDI in business enterprises 35 Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	38.5
Intellectual property receipts (% total trade) 46 Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	41.2
Industrial design applications (per 100 billion GDP) 79 PCT applications (per 100 billion GDP) 68	17.1
PCT applications (per 100 billion GDP) 68	4
	51.5
Firms producing new goods and services (%) 3	92.3

	Rank	Value
Outputs of societal innovation	85	22.5
Trademark applications (per 100 billion GDP)	42	38.5
Cultural goods exports (% exports)	108	2.8
Printing and publishing output (% manufactured output)	50	26.2
Impact	77	28.7
Quality	44	36.4
Research institutions prominence	93	5.3
Growth of innovative companies	94	45.4
ISO 9001 quality certificates (% GDP)	19	65.1
ISO 14001 environmental certificates (% GDP)	29 83	29.6 13.2
Linkages GERD financed from abroad (%)	55	14.1
Joint ventures per strategic alliance deals (% GDP)	91	5.4
Computer software spending (% GDP)	61	20.1
Business development	90	36.5
New business density per thousand population	85	6.1
Firms with new product/service (%)	64	66.9
INFORMATION AND COMMUNICATIONS TECHNOLOGY	67	48.1
Infrastructure	79	46.6
Coverage	99	41.4
3G/4G mobile network coverage (% population)	92 62	84.9
Secure Internet servers per 1 million population	68	31
Investment in telecommunication services (% GDP)	53	33
Quality Mobile upload and download speeds	40	31.5
Fixed-broadband upload and download speeds	54	13.4
Fixed-broadband subscriptions by speed per hundred people	41	54
Affordability	98	65.4
Fixed broadband basket (% GNI per capita)	71	75.7
Mobile broadband basket (% GNI per capita)	63	66.4
Internet and telephony competition	129	54.2
Access	67	40.3
Subscriptions	63	52.8
Active mobile-broadband subscriptions per hundred inhabitants	42	42.8
International Internet bandwidth per user	46	46.4
Households with Internet access at home (%)	77	69.4
Skills and employment	74	27.8
Individuals with standard ICT skills (%)	n/a	n/a
Tertiary graduates from ICT programmes (%)	92	24.5
ICT employment (%)	45	31.2
Usage	35	57.4
Services	56	50.1
Government online services	31	84.1
Fixed broadband Internet traffic per subscription	53	21.2
Mobile broadband Internet traffic per subscription	65	12.6
Internet users (%)	43	82.4
Outcomes	30	64.7
ICT PCT patent applications (per 100 billion GDP)	45	50.2
E-participation	28	85.7
Internet activities by individuals (%)	n/a	n/a
Trade in digitally deliverable services (% total trade)	29	58.4
ECONOMY	81	50.6
Economic competitiveness	139	36.6
Infrastructure investment	132	38.6
Gross fixed capital formation (% GDP)	127	33.5
Logistics performance	86	42.1
Transport productive capacity	112	18.9
Building quality control	115	60

	Value 34.7
	89.6
	48.2
	0.9
	0.9
	65.5
	57
	16.9
	47
	75.2
	88.8
	74.1
	100
	42.9
	79.3
79	49.5
54	62
119	8.8
26	79.6
98	65.6
24	94
96	37.1
85	21.5
91	58.3
113	49.8
58	18.8
15	77.3
15	85.1
8	90.7
10	87.7
13	93.7
30	79.5
36	74
21	89.4
39	75
35	68.1
64	68.5
78	32
84	73.5
1	100
37	84.7
22	93.6
25	98.4
86	62.2
45	51
18	84.3
55	17.6
4	78.8
	84.5
	80
46	78
49	95.6
49	93.0
27	70
27	73
27 32 n/a	73 63 n/a
	119 26 98 24 96 85 91 113 58 15 15 15 8 10 13 30 36 21 39 35 64 78 84 1 37 22 25 86 45 18 55 4

*All values are normalized to a scale from 0 (worst) to 100 (best).