

**GKI RANK** 95 /133

**GKI SCORE** 41.7

**WORLD AVERAGE** 47.5

**COUNTRY PERFORMANCE SUMMARY**

India is a modest performer in terms of its knowledge infrastructure. It ranks 95th out of 133 countries in the Global Knowledge Index 2023 and 8th out of the 25 countries with medium human development.

**INDIA**

**KEY INDICATORS**

**GDP (US\$ billions): 10,056.741**

**Population: 1,407,563,842**

**HDI: 0.633**

**AREAS OF STRENGTH**

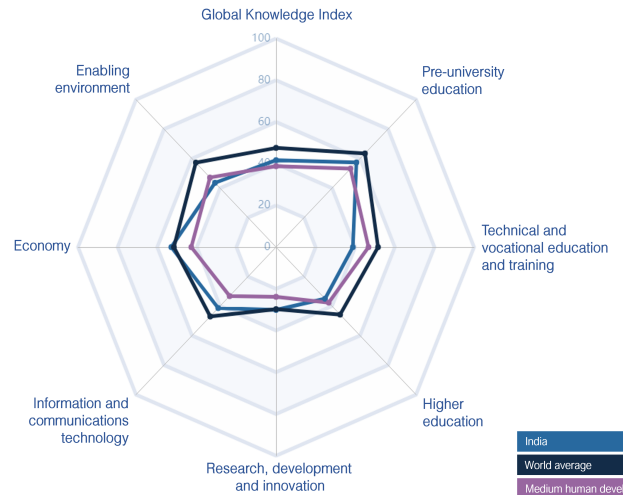
- + Building quality control
- + Cultural goods exports (% exports)
- + Pupil-trained teacher ratio in pre-primary education
- + Research institutions prominence
- + Trade in digitally deliverable services (% total trade)

**AREAS OF IMPROVEMENT**

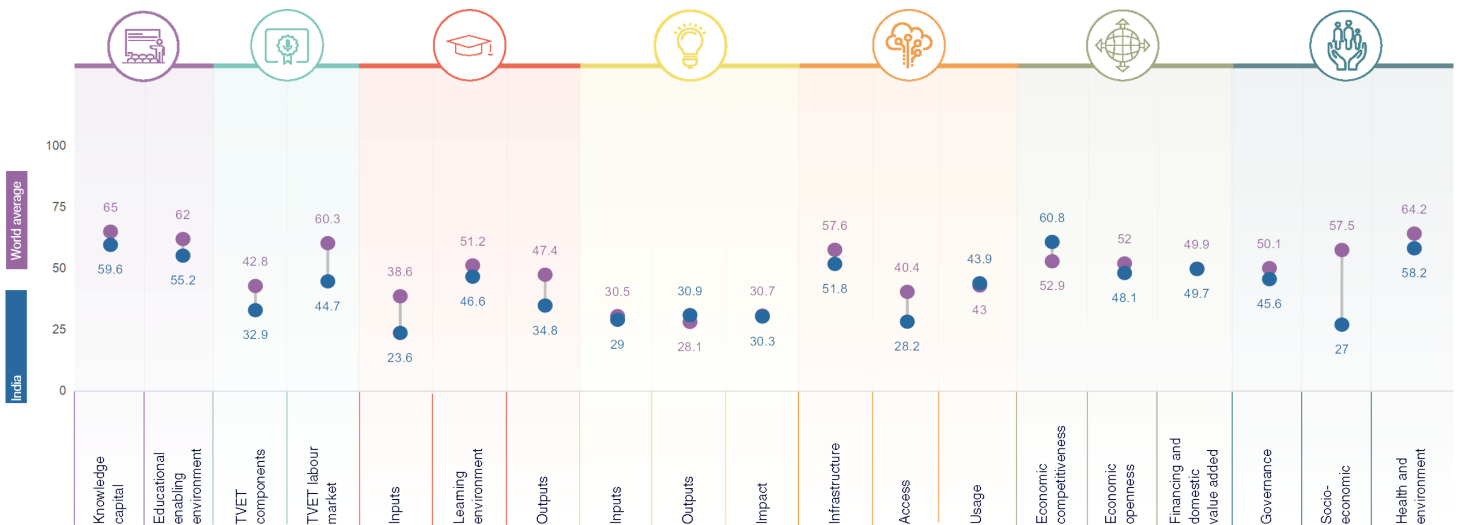
- Natural hazard exposure
- Mobile upload and download speeds
- Firms offering formal training (%)
- Chinn-Ito financial openness
- Female-to-male labour force participation

**SECTORAL INDICES**

|   | RANK | VALUE |
|---|------|-------|
| PRE-UNIVERSITY EDUCATION                        | 96   | 57.4  |
| TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING | 119  | 38.8  |
| HIGHER EDUCATION                                | 106  | 35    |
| RESEARCH, DEVELOPMENT AND INNOVATION            | 54   | 30.1  |
| INFORMATION AND COMMUNICATIONS TECHNOLOGY       | 83   | 41.3  |
| ECONOMY   | 57   | 52.9  |
| ENABLING ENVIRONMENT                            | 108  | 43.6  |



**GKI PILLARS**





# INDIA

|   | Rank Value |             |  | Rank Value |             |
|---|------------|-------------|--|------------|-------------|
| <b>PRE-UNIVERSITY EDUCATION</b>                                     | <b>96</b>  | <b>57.4</b> | <b>HIGHER EDUCATION</b>  | <b>106</b> | <b>35</b>   |
| <b>Knowledge capital</b>  | <b>94</b>  | <b>59.6</b> | <b>Inputs</b>  | <b>117</b> | <b>23.6</b> |
| Enrolment   | 92         | 76.8        | Expenditure  | 99         | 7.5         |
| Net enrolment rate in primary education                             | 24         | 98.8        | Government expenditure per tertiary student                    | 67         | 7.5         |
| Net enrolment rate in lower secondary education                     | 95         | 81.3        | Teaching staff compensation (% tertiary expenditure)           | n/a        | n/a         |
| Net enrolment rate in upper secondary education                     | 106        | 50.3        | Enrolment  | 74         | 18.2        |
| Completion  | 97         | 58          | Enrolment in bachelor's or equivalent level (%)                | 81         | 19.9        |
| Years of compulsory education in primary and secondary              | 104        | 61.5        | Enrolment in master's, doctoral or equivalent (%)              | 59         | 16.4        |
| Completion rate in upper secondary education                        | 82         | 50.4        | Resources  | 108        | 45.2        |
| Gross intake ratio to the last grade of lower secondary education   | 72         | 62          | Pupil-teacher ratio in tertiary education                      | 91         | 54.3        |
| Outcomes  | 78         | 44.2        | Researchers in higher education (%)                            | 71         | 36.1        |
| Assessment of 15-year-old students in math, science and reading     | n/a        | n/a         | <b>Learning environment</b>                                    | <b>78</b>  | <b>46.6</b> |
| Learning-adjusted years of schooling                                | 88         | 44.2        | Diversity and academic freedom                                 | 94         | 38.4        |
| <b>Educational enabling environment</b>                             | <b>94</b>  | <b>55.2</b> | Teachers in tertiary education, gender parity                  | 47         | 76.9        |
| Expenditure   | 76         | 31          | Inbound mobility rate  | 110        | 0.4         |
| Government expenditure on primary education (% GDP)                 | 78         | 26.7        | Academic freedom   | 102        | 37.9        |
| Government expenditure on secondary education (% GDP)               | 56         | 32.2        | Equity and inclusiveness                                       | 19         | 54.8        |
| Government funding per primary student (% GDP per capita)           | 63         | 37.8        | Gross attendance ratio for tertiary education, gender parity   | 30         | 84.6        |
| Government funding per secondary student (% GDP per capita)         | 64         | 27.5        | Gross attendance ratio for tertiary education, wealth parity   | 26         | 17.9        |
| Resources   | 98         | 62.1        | Gross attendance ratio for tertiary education, location parity | 12         | 62          |
| Pupil-trained teacher ratio in primary education                    | 63         | 70.2        | <b>Outputs</b>   | <b>114</b> | <b>34.8</b> |
| Pupil-trained teacher ratio in secondary education                  | 53         | 82.3        | Attainment   | 68         | 18.1        |
| Schools with access to computers in primary education (%)           | 90         | 28.1        | Educational attainment rate, bachelor's or equivalent          | 72         | 24.3        |
| Schools with access to computers in secondary education (%)         | 90         | 67.8        | Educational attainment rate, master's or equivalent            | 46         | 11.9        |
| Early learning  | 58         | 65.8        | Educational attainment rate, doctoral or equivalent            | n/a        | n/a         |
| Gross enrolment ratio in early childhood education                  | 75         | 34.5        | Employment   | 125        | 48.8        |
| Proportion of children who are developmentally on track             | n/a        | n/a         | Labour force participation rate with advanced education        | 119        | 50.4        |
| Proportion of children with stimulating home learning environments  | n/a        | n/a         | Unemployment rate with advanced education                      | 122        | 47.1        |
| Pupil-trained teacher ratio in pre-primary education                | 7          | 97.1        | Impact   | 66         | 37.6        |
| Equity and inclusiveness  | 82         | 62          | University-industry collaboration in R&D                       | 84         | 42.3        |
| Completion rate in upper secondary education, gender parity         | 81         | 88.7        | Citable documents per R&D personnel in higher education        | 26         | 32.8        |
| Completion rate in upper secondary education, wealth parity         | 45         | 24.8        | <b>RESEARCH, DEVELOPMENT AND INNOVATION</b>                    | <b>54</b>  | <b>30.1</b> |
| Completion rate in upper secondary education, location parity       | 56         | 72.4        | <b>Inputs</b>  | <b>60</b>  | <b>29</b>   |
| <b>TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING</b>              | <b>119</b> | <b>38.8</b> | Inputs of R&D institutions                                     | 65         | 27.2        |
| <b>TVET components</b>  | <b>111</b> | <b>32.9</b> | GERD (% GDP)   | 52         | 12.1        |
| Continuous training and skilling                                    | 123        | 12.4        | GERD per researcher  | 41         | 19.5        |
| Firms offering formal training (%)                                  | 98         | 5.4         | Researchers per thousand labour force                          | 76         | 4.4         |
| Labour force participation rate with short-cycle tertiary education | n/a        | n/a         | Tertiary graduates from STEM programmes (%)                    | 22         | 72.9        |
| Participation rate in formal and non-formal education and training  | 61         | 19.4        | Inputs of RDI in business enterprises                          | 64         | 24.1        |
| TVET structure  | 49         | 51.9        | GERD performed by business enterprises (%)                     | 48         | 5.5         |
| Government expenditure on vocational education (%)                  | 19         | 50.2        | GERD financed by business enterprises (%)                      | 47         | 45.5        |
| Share of students enrolled in secondary vocational programmes       | 100        | 5.4         | Researchers in business enterprises (%)                        | 35         | 41.3        |
| Share of students enrolled in post-secondary vocational programmes  | 1          | 100         | Firms that spend on R&D (%)                                    | 92         | 4.3         |
| TVET quality and qualifications                                     | 116        | 34.4        | Inputs of societal innovation                                  | 49         | 37.3        |
| Extent of staff training  | 118        | 43.3        | High-skilled employment (%)                                    | n/a        | n/a         |
| Quality of vocational training                                      | 107        | 41.9        | Intellectual property payments (% total trade)                 | 24         | 29.9        |
| Ratio of high-skill TVET occupations earnings to average wage       | 39         | 25.9        | State of cluster development                                   | 85         | 44.7        |
| Ratio of medium-skill TVET occupations earnings to average wage     | 74         | 26.4        | <b>Outputs</b>   | <b>44</b>  | <b>30.9</b> |
| <b>TVET labour market</b>   | <b>115</b> | <b>44.7</b> | Outputs of R&D institutions                                    | 63         | 35.2        |
| Efficiency of the labour market                                     | 84         | 63.6        | Average documents per researcher                               | 65         | 17.1        |
| Firms constrained with inadequately educated workforce (%)          | 46         | 68          | Citations per document   | 98         | 22          |
| Employment educational mismatch (%)                                 | 85         | 45.3        | Resident patent applications (per 100 billion GDP)             | 20         | 66.4        |
| Proportion of skilled production workers                            | 48         | 65.6        | Outputs of RDI in business enterprises                         | 104        | 8.2         |
| Unemployment rate with vocational education                         | 88         | 75.3        | Intellectual property receipts (% total trade)                 | 46         | 4.9         |
| Post-TVET employment  | 100        | 36.1        | Industrial design applications (per 100 billion GDP)           | 40         | 14.8        |
| Share of TVET occupations   | 112        | 30.3        | PCT applications (per 100 billion GDP)                         | 41         | 5.6         |
| Manufacturing employment (%)  | 56         | 41.8        | Firms producing new products and services (%)                  | 98         | 7.5         |
| Equity and inclusiveness  | 122        | 34.4        | Outputs of societal innovation                                 | 10         | 45.1        |
| Enrolment in vocational education, gender parity                    | 104        | 47          | Trademark applications (per 100 billion GDP)                   | 50         | 28          |
| Vulnerable employment rate  | 116        | 21.8        | Cultural goods exports (% exports)                             | 1          | 100         |
|   |            |             | Printing and publishing output (% manufactured output)         | 89         | 7.4         |
|   |            |             | <b>Impact</b>  | <b>63</b>  | <b>30.3</b> |
|   |            |             | Quality  | 52         | 35.6        |
|   |            |             | Research institutions prominence                               | 12         | 75.2        |
|   |            |             | Growth of innovative companies                                 | 90         | 43.7        |
|   |            |             | ISO 9001 quality certificates (per billion GDP)                | 47         | 14.9        |
|   |            |             | ISO 14001 environmental certificates (per billion GDP)         | 66         | 8.7         |
|   |            |             | Linkages   | 52         | 20.4        |
|   |            |             | GERD financed from abroad (%)                                  | n/a        | n/a         |
|   |            |             | Joint ventures per strategic alliance deals (per billion GDP)  | 27         | 17.4        |
|   |            |             | Computer software spending (% GDP)                             | 53         | 23.4        |
|   |            |             | Business development   | 79         | 34.8        |
|   |            |             | New business density per thousand population                   | 113        | 0.5         |
|   |            |             | Firms with products and services new to the market (%)         | 45         | 69.1        |



# INDIA

|   | Rank       | Value       |  | Rank       | Value       |
|---|------------|-------------|--|------------|-------------|
| <b>INFORMATION AND COMMUNICATIONS TECHNOLOGY</b>              |            |             | <b>ENABLING ENVIRONMENT</b>                        |            |             |
| <b>Infrastructure</b>   | <b>83</b>  | <b>41.3</b> | <b>Governance</b>                                  | <b>69</b>  | <b>45.6</b> |
| Coverage  | 99         | 54.1        | Political environment                              | 82         | 36.9        |
| 3G/4G mobile network coverage (% population)                  | 61         | 98.4        | Peace and stability                                | 98         | 24.5        |
| Secure Internet servers per 1 million population              | 74         | 49.2        | Voice and accountability                           | 66         | 49.3        |
| Investment in telecommunication services (% GDP)              | 113        | 14.7        | Quality of institutions                            | 59         | 54.2        |
| <b>Quality</b>  | <b>91</b>  | <b>9.9</b>  | Rule of law  | 71         | 44.3        |
| Mobile upload and download speeds                             | 99         | 3.7         | Control of corruption                              | 51         | 63.2        |
| Fixed-broadband upload and download speeds                    | 42         | 21.2        | Government effectiveness                           | 59         | 55.2        |
| Fixed-broadband subscriptions by speed per hundred people     | 94         | 4.7         | <b>Socio-economic</b>                              | <b>131</b> | <b>27</b>   |
| <b>Affordability</b>  | <b>59</b>  | <b>91.3</b> | Gender equity                                      | 132        | 36.8        |
| Fixed broadband basket (% GNI per capita)                     | 72         | 82.6        | Female-to-male ratio in parliament                 | 113        | 18          |
| Mobile broadband basket (% GNI per capita)                    | 76         | 91.3        | Female-to-male labour force participation          | 126        | 32.7        |
| Internet and telephony competition                            | 1          | 100         | Female-to-male ratio in Internet usage             | 105        | 59.6        |
| <b>Access</b>   | <b>100</b> | <b>28.2</b> | Social inclusion                                   | 115        | 38.7        |
| <b>Subscriptions</b>  | <b>104</b> | <b>36.7</b> | Social protection coverage (% population)          | 90         | 22.2        |
| Active mobile-broadband subscriptions per hundred inhabitants | 111        | 22.2        | Adult literacy rate                                | 84         | 67.4        |
| International Internet bandwidth per user                     | 52         | 52.4        | Youth not in employment, education or training (%) | 117        | 26.6        |
| Households with Internet access at home (%)                   | 104        | 35.6        | Standard of living                                 | 127        | 5.6         |
| <b>Skills and employment</b>                                  | <b>85</b>  | <b>19.6</b> | Poverty headcount ratio (% population)             | n/a        | n/a         |
| Individuals with standard ICT skills (%)                      | n/a        | n/a         | GDP per capita                                     | 100        | 5.6         |
| Tertiary graduates from ICT programmes (%)                    | 75         | 24.9        | <b>Health and environment</b>                      | <b>107</b> | <b>58.2</b> |
| ICT employment (%)  | 61         | 14.3        | Health   | 100        | 64.3        |
| <b>Usage</b>  | <b>61</b>  | <b>43.9</b> | Universal health coverage                          | 93         | 63.3        |
| <b>Services</b>   | <b>82</b>  | <b>45.3</b> | Healthy life expectancy (years)                    | 101        | 54.9        |
| Government online services                                    | 40         | 79.3        | Under-five mortality rate                          | 99         | 74.7        |
| Fixed broadband Internet traffic per subscription             | 55         | 20.8        | Environmental performance                          | 73         | 52.1        |
| Mobile broadband Internet traffic per subscription            | 18         | 38          | Renewable energy consumption (%)                   | 48         | 37.3        |
| Internet users (%)  | 108        | 43          | Ecological footprint per capita                    | 15         | 96          |
| <b>Outcomes</b>   | <b>44</b>  | <b>42.6</b> | Natural hazard exposure                            | 128        | 23          |
| ICT PCT patent applications (per 100 billion GDP)             | 50         | 3.9         |  |            |             |
| E-participation   | 59         | 59.1        |  |            |             |
| Internet activities by individuals (%)                        | n/a        | n/a         |  |            |             |
| Trade in digitally deliverable services (% total trade)       | 14         | 64.7        |  |            |             |
| <b>ECONOMY</b>  | <b>57</b>  | <b>52.9</b> |  |            |             |
| <b>Economic competitiveness</b>                               | <b>36</b>  | <b>60.8</b> |  |            |             |
| Infrastructure investment                                     | 35         | 57.5        |  |            |             |
| Gross fixed capital formation (% GDP)                         | 19         | 37.9        |  |            |             |
| Logistics performance   | 35         | 60          |  |            |             |
| Transport productive capacity                                 | 83         | 35.2        |  |            |             |
| Building quality control                                      | 6          | 96.9        |  |            |             |
| Business agility  | 49         | 64.2        |  |            |             |
| Ease of starting a business                                   | 106        | 81.6        |  |            |             |
| Insolvency recovery rate                                      | 24         | 77.9        |  |            |             |
| Entrepreneurial employee activity rate                        | 62         | 11.5        |  |            |             |
| Extent of corporate transparency                              | 13         | 85.7        |  |            |             |
| <b>Economic openness</b>                                      | <b>75</b>  | <b>48.1</b> |  |            |             |
| Trade and diversification                                     | 57         | 52.7        |  |            |             |
| Trade (% GDP)   | 110        | 6.7         |  |            |             |
| High-technology trade (% total trade)                         | 49         | 28.1        |  |            |             |
| Product concentration   | 41         | 81.7        |  |            |             |
| Market concentration  | 20         | 94.4        |  |            |             |
| Financial openness  | 81         | 43.5        |  |            |             |
| Chinn-Ito financial openness                                  | 86         | 16.4        |  |            |             |
| Foreign direct investment, net inflows (% GDP)                | 81         | 34          |  |            |             |
| Debt dynamics   | 36         | 80          |  |            |             |
| <b>Financing and domestic value added</b>                     | <b>67</b>  | <b>49.7</b> |  |            |             |
| Financing and taxes   | 80         | 57.2        |  |            |             |
| Domestic credit to private sector (% GDP)                     | 65         | 16.8        |  |            |             |
| MSME financing gap (% GDP)                                    | 26         | 85.7        |  |            |             |
| Tax and contribution rate (% profit)                          | 109        | 57.6        |  |            |             |
| Bank non-performing loans (%)                                 | 79         | 68.6        |  |            |             |
| Domestic value added  | 62         | 42.3        |  |            |             |
| Medium- and high-tech activities value added                  | 17         | 55.4        |  |            |             |
| Industry and services value added (% GDP)                     | 110        | 31.6        |  |            |             |
| Labour underutilization rate                                  | 55         | 74.5        |  |            |             |
| Output per worker   | 97         | 7.8         |  |            |             |

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