



**GKI RANK** 93 /133

**GKI SCORE** 42.4

**WORLD AVERAGE** 47.5

**COUNTRY PERFORMANCE SUMMARY**

Bhutan is a modest performer in terms of its knowledge infrastructure. It ranks 93rd out of 133 countries in the Global Knowledge Index 2023 and 7th out of the 25 countries with medium human development.

# BHUTAN

## KEY INDICATORS

**GDP (US\$ billions): 8,481**

**Population: 777,487**

**HDI: 0.666**

### AREAS OF STRENGTH

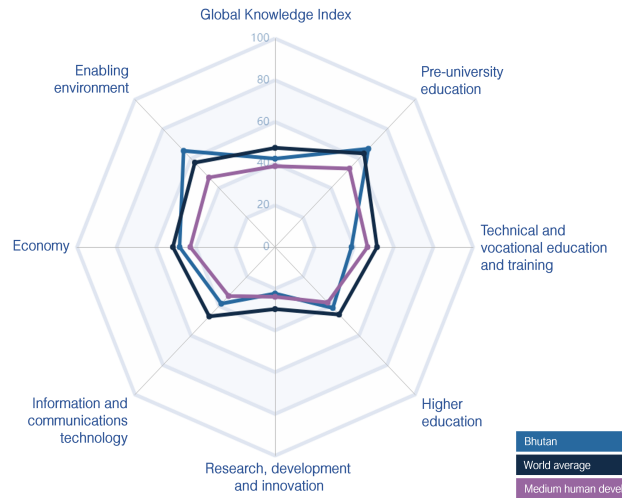
- + Labour force participation rate with short-cycle tertiary education
- + Government expenditure on secondary education (% GDP)
- + Renewable energy consumption (%)
- + Gross enrolment ratio in early childhood education
- + Pupil-trained teacher ratio in pre-primary education

### AREAS OF IMPROVEMENT

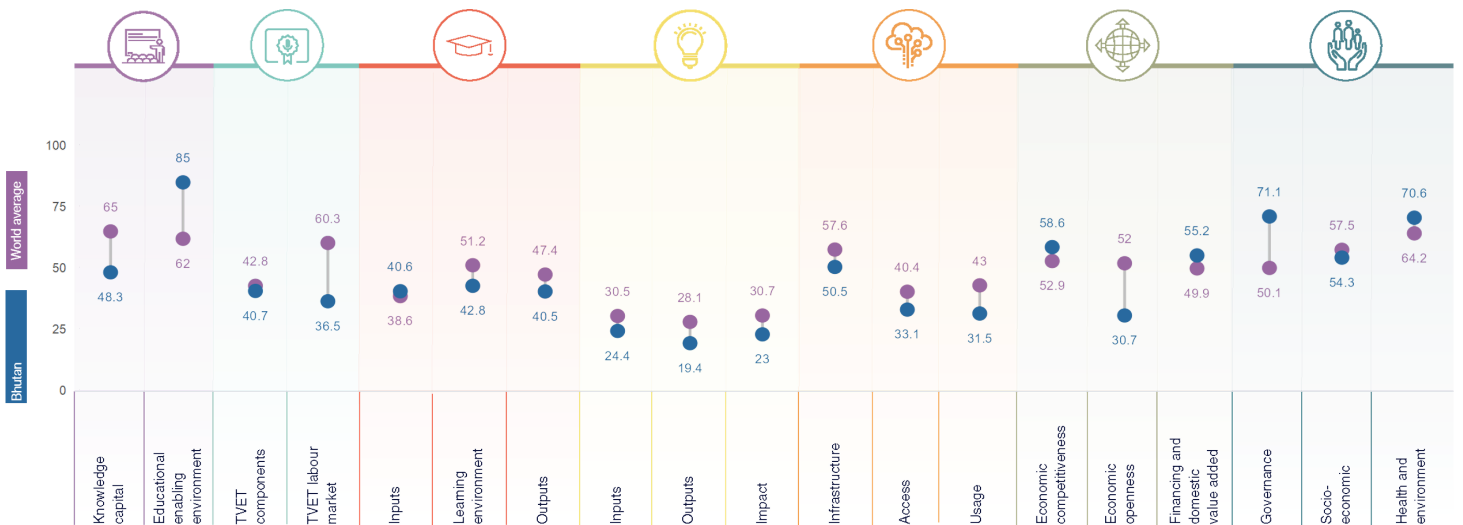
- Years of compulsory education in primary and secondary
- Government expenditure on vocational education (%)
- Research institutions prominence
- Mobile broadband Internet traffic per subscription
- New business density per thousand population

## SECTORAL INDICES

	RANK	VALUE
PRE-UNIVERSITY EDUCATION	73	66.7
TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING	120	38.6
HIGHER EDUCATION	82	41.3
RESEARCH, DEVELOPMENT AND INNOVATION	99	22.3
INFORMATION AND COMMUNICATIONS TECHNOLOGY	91	38.4
ECONOMY	76	48.2
ENABLING ENVIRONMENT	40	65.3



## GKI PILLARS





# BHUTAN

	Rank	Value		Rank	Value
<b>PRE-UNIVERSITY EDUCATION</b>			<b>73 66.7</b>		
<b>Knowledge capital</b>	<b>105</b>	<b>48.3</b>			
Enrolment	94	76.1			
Net enrolment rate in primary education	86	87.4			
Net enrolment rate in lower secondary education	98	79.2			
Net enrolment rate in upper secondary education	94	61.9			
Completion	119	32.2			
Years of compulsory education in primary and secondary	128	0			
Completion rate in upper secondary education	79	58.7			
Gross intake ratio to the last grade of lower secondary education	102	37.9			
<b>Outcomes</b>	<b>93</b>	<b>36.6</b>			
Assessment of 15-year-old students in math, science and reading	n/a	n/a			
Learning-adjusted years of schooling	98	36.6			
<b>Educational enabling environment</b>	<b>4</b>	<b>85</b>			
<b>Expenditure</b>	<b>6</b>	<b>56.5</b>			
Government expenditure on primary education (% GDP)	7	66.6			
Government expenditure on secondary education (% GDP)	3	67.9			
Government funding per primary student (% GDP per capita)	69	35			
Government funding per secondary student (% GDP per capita)	9	56.6			
<b>Resources</b>	<b>55</b>	<b>89.6</b>			
Pupil-trained teacher ratio in primary education	51	78.2			
Pupil-trained teacher ratio in secondary education	14	96.4			
Schools with access to computers in primary education (%)	53	85.9			
Schools with access to computers in secondary education (%)	57	98.1			
<b>Early learning</b>	<b>2</b>	<b>96.4</b>			
Gross enrolment ratio in early childhood education	4	94.5			
Proportion of children who are developmentally on track	n/a	n/a			
Proportion of children with stimulating home learning environments	n/a	n/a			
Pupil-trained teacher ratio in pre-primary education	4	98.4			
<b>Equity and inclusiveness</b>	<b>11</b>	<b>97.4</b>			
Completion rate in upper secondary education, gender parity	22	97.4			
Completion rate in upper secondary education, wealth parity	n/a	n/a			
Completion rate in upper secondary education, location parity	n/a	n/a			
<b>TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING</b>			<b>120 38.6</b>		
<b>TVET components</b>	<b>70</b>	<b>40.7</b>			
<b>Continuous training and skilling</b>	<b>40</b>	<b>51.2</b>			
Firms offering formal training (%)	63	31.7			
Labour force participation rate with short-cycle tertiary education	2	99.9			
Participation rate in formal and non-formal education and training	50	22.1			
<b>TVET structure</b>	<b>88</b>	<b>34.3</b>			
Government expenditure on vocational education (%)	78	0			
Share of students enrolled in secondary vocational programmes	109	2.9			
Share of students enrolled in post-secondary vocational programmes	1	100			
<b>TVET quality and qualifications</b>	<b>106</b>	<b>36.6</b>			
Extent of staff training	93	51.9			
Quality of vocational training	58	55.8			
Ratio of high-skill TVET occupations earnings to average wage	96	12.1			
Ratio of medium-skill TVET occupations earnings to average wage	73	26.5			
<b>TVET labour market</b>	<b>124</b>	<b>36.5</b>			
<b>Efficiency of the labour market</b>	<b>95</b>	<b>62.2</b>			
Firms constrained with inadequately educated workforce (%)	40	72.7			
Employment educational mismatch (%)	50	67.6			
Proportion of skilled production workers	82	46.8			
Unemployment rate with vocational education	112	61.7			
<b>Post-TVET employment</b>	<b>115</b>	<b>24.7</b>			
Share of TVET occupations	114	26.8			
Manufacturing employment (%)	105	22.6			
<b>Equity and inclusiveness</b>	<b>131</b>	<b>22.7</b>			
Enrolment in vocational education, gender parity	n/a	n/a			
Vulnerable employment rate	115	22.7			
<b>HIGHER EDUCATION</b>			<b>82 41.3</b>		
<b>Inputs</b>	<b>63</b>	<b>40.6</b>			
<b>Expenditure</b>	<b>n/a</b>	<b>n/a</b>			
Government expenditure per tertiary student	n/a	n/a			
Teaching staff compensation (% tertiary expenditure)	n/a	n/a			
<b>Enrolment</b>	<b>104</b>	<b>6.1</b>			
Enrolment in bachelor's or equivalent level (%)	96	10.4			
Enrolment in master's, doctoral or equivalent (%)	117	1.8			
<b>Resources</b>	<b>26</b>	<b>75.2</b>			
Pupil-teacher ratio in tertiary education	60	75.2			
Researchers in higher education (%)	n/a	n/a			
<b>Learning environment</b>	<b>91</b>	<b>42.8</b>			
<b>Diversity and academic freedom</b>	<b>89</b>	<b>42.8</b>			
Teachers in tertiary education, gender parity	85	43.4			
Inbound mobility rate	n/a	n/a			
Academic freedom	100	42.1			
<b>Equity and inclusiveness</b>	<b>n/a</b>	<b>n/a</b>			
Gross attendance ratio for tertiary education, gender parity	n/a	n/a			
Gross attendance ratio for tertiary education, wealth parity	n/a	n/a			
Gross attendance ratio for tertiary education, location parity	n/a	n/a			
<b>Outputs</b>	<b>94</b>	<b>40.5</b>			
<b>Attainment</b>	<b>81</b>	<b>11.6</b>			
Educational attainment rate, bachelor's or equivalent	80	20.1			
Educational attainment rate, master's or equivalent	55	8.1			
Educational attainment rate, doctoral or equivalent	62	6.6			
<b>Employment</b>	<b>86</b>	<b>73.4</b>			
Labour force participation rate with advanced education	11	86.9			
Unemployment rate with advanced education	110	60			
<b>Impact</b>	<b>69</b>	<b>36.6</b>			
University-industry collaboration in R&D	98	36.6			
Citable documents per R&D personnel in higher education	n/a	n/a			
<b>RESEARCH, DEVELOPMENT AND INNOVATION</b>			<b>99 22.3</b>		
<b>Inputs</b>	<b>81</b>	<b>24.4</b>			
<b>Inputs of R&amp;D institutions</b>	<b>n/a</b>	<b>n/a</b>			
GERD (% GDP)	n/a	n/a			
GERD per researcher	n/a	n/a			
Researchers per thousand labour force	n/a	n/a			
Tertiary graduates from STEM programmes (%)	n/a	n/a			
<b>Inputs of RDI in business enterprises</b>	<b>59</b>	<b>25</b>			
GERD performed by business enterprises (%)	n/a	n/a			
GERD financed by business enterprises (%)	n/a	n/a			
Researchers in business enterprises (%)	n/a	n/a			
Firms that spend on R&D (%)	48	25			
<b>Inputs of societal innovation</b>	<b>99</b>	<b>23.8</b>			
High-skilled employment (%)	70	27.1			
Intellectual property payments (% total trade)	112	0			
State of cluster development	91	44.2			
<b>Outputs</b>	<b>103</b>	<b>19.4</b>			
<b>Outputs of R&amp;D institutions</b>	<b>111</b>	<b>23.1</b>			
Average documents per researcher	n/a	n/a			
Citations per document	106	19.4			
Resident patent applications (per 100 billion GDP)	107	26.9			
<b>Outputs of RDI in business enterprises</b>	<b>52</b>	<b>20</b>			
Intellectual property receipts (% total trade)	109	0			
Industrial design applications (per 100 billion GDP)	86	2.7			
PCT applications (per 100 billion GDP)	n/a	n/a			
Firms producing new products and services (%)	35	57.3			
<b>Outputs of societal innovation</b>	<b>95</b>	<b>11.4</b>			
Trademark applications (per 100 billion GDP)	96	11.4			
Cultural goods exports (% exports)	n/a	n/a			
Printing and publishing output (% manufactured output)	n/a	n/a			
<b>Impact</b>	<b>101</b>	<b>23</b>			
<b>Quality</b>	<b>116</b>	<b>15.1</b>			
Research institutions prominence	115	0			
Growth of innovative companies	73	45.9			
ISO 9001 quality certificates (per billion GDP)	86	6.2			
ISO 14001 environmental certificates (per billion GDP)	68	8.2			
<b>Linkages</b>	<b>n/a</b>	<b>n/a</b>			
GERD financed from abroad (%)	n/a	n/a			
Joint ventures per strategic alliance deals (per billion GDP)	n/a	n/a			
Computer software spending (% GDP)	n/a	n/a			
<b>Business development</b>	<b>97</b>	<b>31</b>			
New business density per thousand population	119	0.2			
Firms with products and services new to the market (%)	71	61.7			



# BHUTAN

	Rank	Value		Rank	Value
<b>INFORMATION AND COMMUNICATIONS TECHNOLOGY</b>			<b>ENABLING ENVIRONMENT</b>		
<b>Infrastructure</b>	<b>91</b>	<b>38.4</b>	<b>Governance</b>	<b>37</b>	<b>71.1</b>
Coverage	74	60.9	Political environment	38	65
3G/4G mobile network coverage (% population)	73	96.3	Peace and stability	18	76.9
Secure Internet servers per 1 million population	70	52.1	Voice and accountability	59	53.1
Investment in telecommunication services (% GDP)	59	34.4	Quality of institutions	33	77.2
<b>Quality</b>	<b>128</b>	<b>0.5</b>	Rule of law	20	90.1
Mobile upload and download speeds	n/a	n/a	Control of corruption	43	69.8
Fixed-broadband upload and download speeds	n/a	n/a	Government effectiveness	37	71.7
Fixed-broadband subscriptions by speed per hundred people	114	0.5	<b>Socio-economic</b>	<b>77</b>	<b>54.3</b>
<b>Affordability</b>	<b>68</b>	<b>90</b>	Gender equity	74	66.4
Fixed broadband basket (% GNI per capita)	74	82.3	Female-to-male ratio in parliament	108	21.1
Mobile broadband basket (% GNI per capita)	67	93.2	Female-to-male labour force participation	69	78.1
Internet and telephony competition	78	94.4	Female-to-male ratio in Internet usage	1	100
<b>Access</b>	<b>90</b>	<b>33.1</b>	Social inclusion	96	50.5
<b>Subscriptions</b>	<b>66</b>	<b>58.3</b>	Social protection coverage (% population)	114	6.2
Active mobile-broadband subscriptions per hundred inhabitants	69	38.8	Adult literacy rate	89	61.6
International Internet bandwidth per user	104	41.8	Youth not in employment, education or training (%)	25	83.6
Households with Internet access at home (%)	24	94.2	Standard of living	52	45.9
<b>Skills and employment</b>	<b>113</b>	<b>8</b>	Poverty headcount ratio (% population)	18	82.9
Individuals with standard ICT skills (%)	75	6.8	GDP per capita	85	8.9
Tertiary graduates from ICT programmes (%)	n/a	n/a	<b>Health and environment</b>	<b>25</b>	<b>70.6</b>
ICT employment (%)	70	9.1	Health	93	67.9
<b>Usage</b>	<b>95</b>	<b>31.5</b>	Universal health coverage	96	60.4
<b>Services</b>	<b>98</b>	<b>36.6</b>	Healthy life expectancy (years)	88	65.2
Government online services	84	60	Under-five mortality rate	96	78.2
Fixed broadband Internet traffic per subscription	93	1.5	Environmental performance	21	73.2
Mobile broadband Internet traffic per subscription	120	0	Renewable energy consumption (%)	4	90.9
Internet users (%)	52	84.8	Ecological footprint per capita	99	63.8
<b>Outcomes</b>	<b>84</b>	<b>26.4</b>	Natural hazard exposure	45	65
ICT PCT patent applications (per 100 billion GDP)	n/a	n/a			
E-participation	79	46.6			
Internet activities by individuals (%)	68	14.9			
Trade in digitally deliverable services (% total trade)	103	17.7			
<b>ECONOMY</b>	<b>76</b>	<b>48.2</b>			
<b>Economic competitiveness</b>	<b>46</b>	<b>58.6</b>			
Infrastructure investment	47	52.6			
Gross fixed capital formation (% GDP)	6	51			
Logistics performance	97	37.5			
Transport productive capacity	70	41.7			
Building quality control	45	80			
Business agility	47	64.6			
Ease of starting a business	82	86.4			
Insolvency recovery rate	n/a	n/a			
Entrepreneurial employee activity rate	n/a	n/a			
Extent of corporate transparency	82	42.9			
<b>Economic openness</b>	<b>124</b>	<b>30.7</b>			
Trade and diversification	121	37.8			
Trade (% GDP)	73	16.5			
High-technology trade (% total trade)	n/a	n/a			
Product concentration	110	59			
Market concentration	n/a	n/a			
Financial openness	125	23.7			
Chinn-Ito financial openness	86	16.4			
Foreign direct investment, net inflows (% GDP)	116	31			
Debt dynamics	n/a	n/a			
<b>Financing and domestic value added</b>	<b>45</b>	<b>55.2</b>			
Financing and taxes	24	68.1			
Domestic credit to private sector (% GDP)	43	24.8			
MSME financing gap (% GDP)	7	94.2			
Tax and contribution rate (% profit)	57	72.2			
Bank non-performing loans (%)	57	81.1			
Domestic value added	61	42.4			
Medium- and high-tech activities value added	n/a	n/a			
Industry and services value added (% GDP)	94	38.4			
Labour underutilization rate	41	79.3			
Output per worker	91	9.5			

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