Pakistan

The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2023 the NRI Report maps the network-based readiness landscape of 134 economies based on their performances in four different pillars: Technology, People, Governance, and Impact. Each of these pillars is itself comprised of three sub-pillars (see Figure 1) that have been populated by a total of 58 variables.
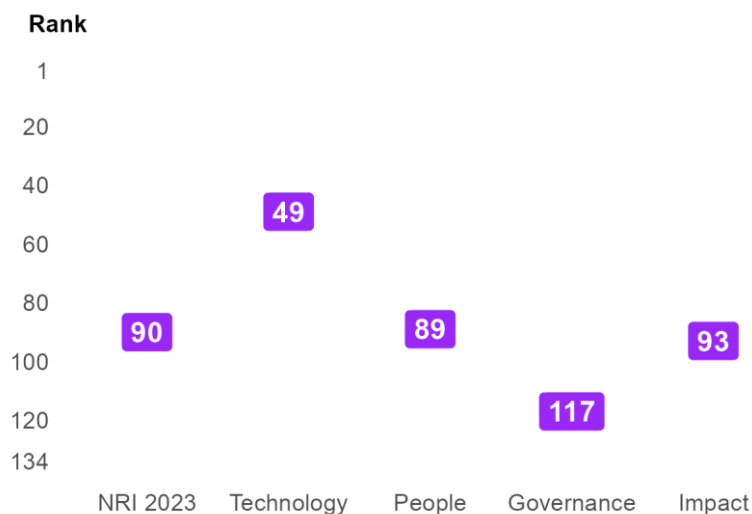
Figure 1: The NRI 2023 model

Global NRI position of Pakistan

Pakistan ranks 90th out of the 134 economies included in the NRI 2023 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Pakistan global ranking, overall and by pillar

Performance at sub-pillar level

When it comes to sub-pillars, the strongest showings of Pakistan relate to Future Technologies, Economy and Content, among others (Table 1). More could be done, though, to improve the economy's performances in the Regulation, SDG Contribution and Inclusion sub-pillars.

Table 1: Pakistan rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	40	Individuals	103
Economy	41	Governments	104
Content	47	Trust	105
Businesses	54	Regulation	110
Access	68	SDG Contribution	117
Quality of Life	98	Inclusion	122

NRI score and income

Figure 3 shows the position of Pakistan in terms of both NRI score and GDP per capita (PPP). The trend line shows the expected NRI score given an economy's income level. As can be seen, Pakistan is well above the trend line, which suggests that it has a greater network readiness than would be expected given its income level.

Figure 3: NRI score and GDP per capita PPP (log)
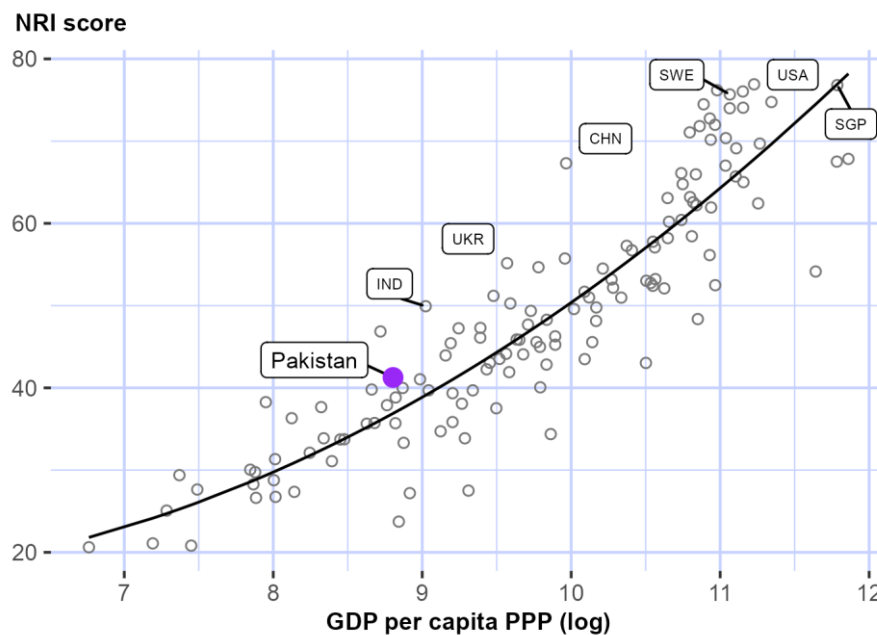
Note: USA = United States (rank: 1), SGP = Singapore (rank: 2), FIN = Finland (3), NLD = Netherlands (4), SWE = Sweden (5), CHN = China (20), IND = India (61). Pakistan belongs to the group of lower-middle-income countries, where the best performer is Ukraine (UKR). The top performer of its region-Asia & Pacific-is Singapore (SGP).

Performance against its income group and region

Lower-middle-income countries
Pakistan is ranked 14th in the group of lower-middle-income countries (Figure 4, left panel). In terms of pillar performance, it has a score higher than the income group average in three of the four pillars: NRI, Technology, People and Impact. At the sub-pillar level, it outperforms lower-middle-income countries in six of the twelve sub-pillars: Access, Content, Future Technologies, Businesses, Economy and Quality of Life.

Asia & Pacific
Pakistan is ranked 17th within Asia & Pacific (Figure 4, right panel). It lags behind its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Asia & Pacific in one of the twelve sub-pillars: Businesses.

Figure 4: Performance of Pakistan against its income group and region, overall and by pillar
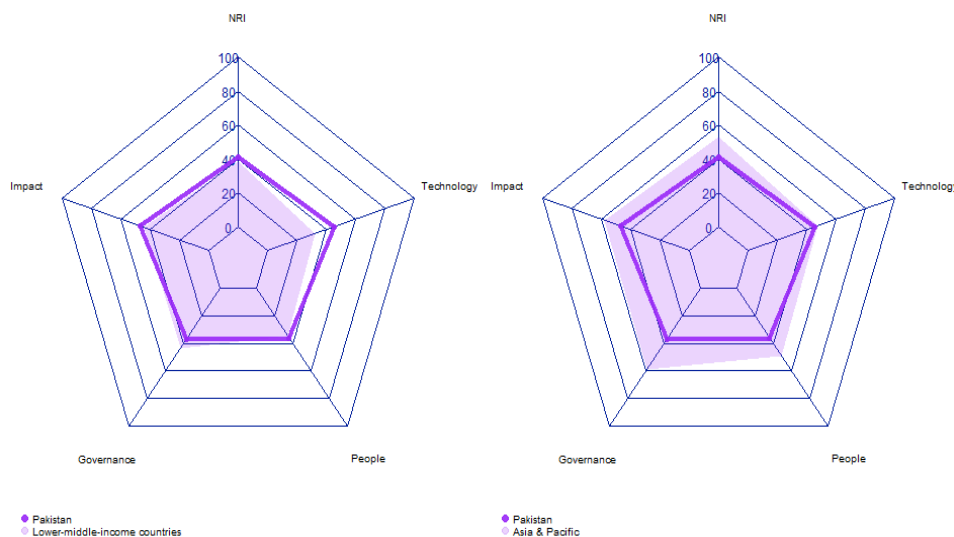

Table 2: Pakistan scores vs. averages of its income group and region, overall and by pillar

Dimension	Pakistan	Lower-middle-income countries	Asia & Pacific
NRI	41.26	38.41	53.28
Technology	45.20	32.12	47.34
People	36.25	34.38	48.95
Governance	36.86	43.27	59.22
Impact	46.74	43.89	57.62

Strongest and weakest indicators

The indicators where Pakistan performs particularly well include 1.2.4 AI scientific publications, 1.2.3 Mobile apps development, and 2.1.1 Mobile broadband internet traffic within the country (Table 3). By contrast, the economy's weakest indicators include 3.1.4 Internet shopping, 3.3.5 Rural gap in use of digital payments, and 3.2.4 E-commerce legislation.

Table 3: Highlight of Strengths and Opportunities for Pakistan

Strongest indicators	Rank	Weakest indicators	Rank
1.2.4 AI scientific publications	10	2.3.2 Publication and use of open data	100
1.2.3 Mobile apps development	13	3.3.4 Gender gap in Internet use	105
2.1.1 Mobile broadband internet traffic within the country	16	3.2.4 E-commerce legislation	121
1.1.5 International Internet bandwidth	17	3.3.5 Rural gap in use of digital payments	125
4.2.3 Income inequality	21	3.1.4 Internet shopping	129
4.1.4 Domestic market size	22		
4.1.6 ICT services exports	22		
1.1.3 FTTH/building Internet subscriptions	25		
2.2.4 Annual investment in telecommunication services	25		
1.3.4 Computer software spending	31		

Note: For the full list of strengths and weaknesses, see At-A-Glance table.

NRI 2023 At-A-Glance: Pakistan

Network Readiness Index   **Rank: 90 (out of 134)**   **Score: 41.26**

Pillar/sub-pillar	Rank	Score
A. Technology pillar	49	45.20
1st sub-pillar: Access	68	64.77
2nd sub-pillar: Content	47	29.12
3rd sub-pillar: Future Technologies	40	41.70
B. People pillar	89	36.25
1st sub-pillar: Individuals	103	35.25
2nd sub-pillar: Businesses	54	48.35
3rd sub-pillar: Governments	104	25.14

Pillar/sub-pillar	Rank	Score
C. Governance pillar	117	36.86
1st sub-pillar: Trust	105	27.46
2nd sub-pillar: Regulation	110	50.31
3rd sub-pillar: Inclusion	122	32.82
D. Impact pillar	93	46.74
1st sub-pillar: Economy	41	36.11
2nd sub-pillar: Quality of Life	98	57.68
3rd sub-pillar: SDG Contribution	117	46.43

The Network Readiness Index in detail

Indicator	Rank	Score	
A. Technology pillar	49	45.20	
1st sub-pillar: Access	68	64.77	
1.1.1 Mobile tariffs	56	67.25	
1.1.2 Handset prices	91	36.97	
1.1.3 FTTH/building Internet subscriptions	25	45.07	●
1.1.4 Population covered by at least a 3G mobile network	123	92.22	
1.1.5 International Internet bandwidth	17	82.31	●
1.1.6 Internet access in schools	NA	NA	
2nd sub-pillar: Content	47	29.12	
1.2.1 GitHub commits	103	1.80	
1.2.2 Internet domain registrations	111	0.40	
1.2.3 Mobile apps development	13	78.01	●
1.2.4 AI scientific publications	10	36.29	●
3rd sub-pillar: Future Technologies	40	41.70	
1.3.1 Adoption of emerging technologies	69	45.59	
1.3.2 Investment in emerging technologies	48	48.25	

Indicator	Rank	Score	
C. Governance pillar	117	36.86	
1st sub-pillar: Trust	105	27.46	
3.1.1 Secure Internet servers	108	34.06	
3.1.2 Cybersecurity	86	64.26	
3.1.3 Online access to financial account	103	11.51	
3.1.4 Internet shopping	129	0.00	○
2nd sub-pillar: Regulation	110	50.31	
3.2.1 Regulatory quality	111	33.07	
3.2.2 ICT regulatory environment	42	87.65	
3.2.3 Regulation of emerging technologies	50	52.21	
3.2.4 E-commerce legislation	121	33.33	○
3.2.5 Privacy protection by law content	107	45.26	
3rd sub-pillar: Inclusion	122	32.82	
3.3.1 E-Participation	94	34.88	
3.3.2 Socioeconomic gap in use of digital payments	71	72.53	
3.3.3 Availability of local online content	83	51.44	

Network Readiness Index 2023

Indicator	Rank	Score	
1.3.3 Robot density	NA	NA	
1.3.4 Computer software spending	31	31.25	●
B. People pillar	89	36.25	
1st sub-pillar: Individuals	103	35.25	
2.1.1 Mobile broadband internet traffic within the country	16	43.65	●
2.1.2 ICT skills in the education system	44	56.74	
2.1.3 Use of virtual social networks	103	26.78	
2.1.4 Tertiary enrollment	107	6.41	
2.1.5 Adult literacy rate	99	42.65	
2.1.6 AI talent concentration	NA	NA	
2nd sub-pillar: Businesses	54	48.35	
2.2.1 Firms with website	67	45.40	
2.2.2 GERD financed by business enterprise	NA	NA	
2.2.3 Knowledge intensive employment	100	14.16	
2.2.4 Annual investment in telecommunication services	25	85.50	●
2.2.5 GERD performed by business enterprise	NA	NA	
3rd sub-pillar: Governments	104	25.14	
2.3.1 Government online services	87	52.01	
2.3.2 Publication and use of open data	100	2.94	○
2.3.3 Government promotion of investment in emerging tech	53	42.84	
2.3.4 R&D expenditure by governments and higher education	96	2.78	

Indicator	Rank	Score	
3.3.4 Gender gap in Internet use	105	0.00	○
3.3.5 Rural gap in use of digital payments	125	5.25	○
D. Impact pillar	93	46.74	
1st sub-pillar: Economy	41	36.11	
4.1.1 High-tech and medium-high-tech manufacturing	59	25.11	
4.1.2 High-tech exports	105	2.45	
4.1.3 PCT patent applications	NA	NA	
4.1.4 Domestic market size	22	70.98	●
4.1.5 Prevalence of gig economy	53	45.35	
4.1.6 ICT services exports	22	36.69	●
2nd sub-pillar: Quality of Life	98	57.68	
4.2.1 Happiness	101	39.70	
4.2.2 Freedom to make life choices	87	64.82	
4.2.3 Income inequality	21	83.92	●
4.2.4 Healthy life expectancy at birth	114	42.29	
3rd sub-pillar: SDG Contribution	117	46.43	
4.3.1 SDG 3: Good Health and Well-Being	120	27.44	
4.3.2 SDG 4: Quality Education	NA	NA	
4.3.3 SDG 5: Women's economic opportunity	122	41.59	
4.3.4 SDG 7: Affordable and Clean Energy	88	66.55	
4.3.5 SDG 11: Sustainable Cities and Communities	91	50.12	

NOTE: ● a strength and ○ a weakness.

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