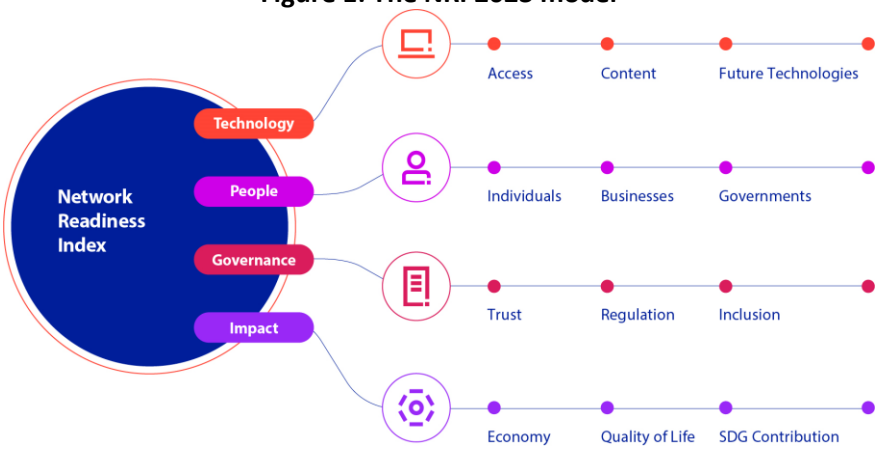
Nepal

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.

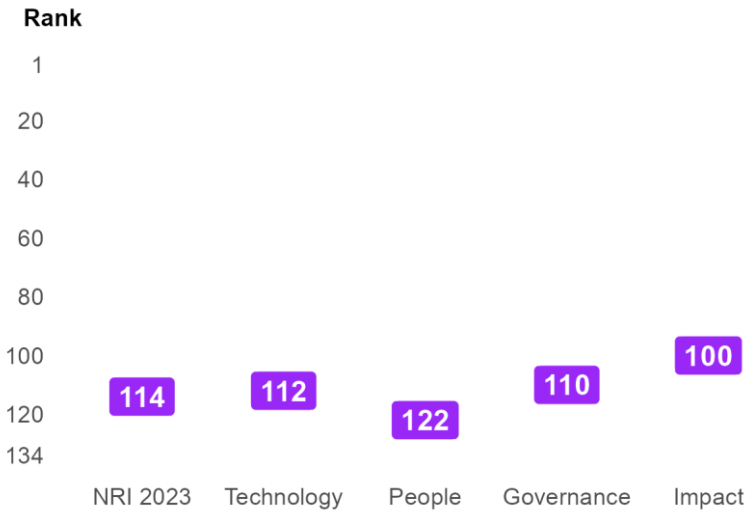
Figure 1: The NRI 2023 model



Global NRI position of Nepal

Nepal ranks 114th out of the 134 economies included in the NRI 2023 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns People.

Figure 2: Nepal global ranking, overall and by pillar



Performance at sub-pillar level

When it comes to sub-pillars, the strongest showings of Nepal relate to Content, Quality of Life and Governments, among others (Table 1). More could be done, though, to improve the economy's performances in the Access, Future Technologies and Businesses sub-pillars.

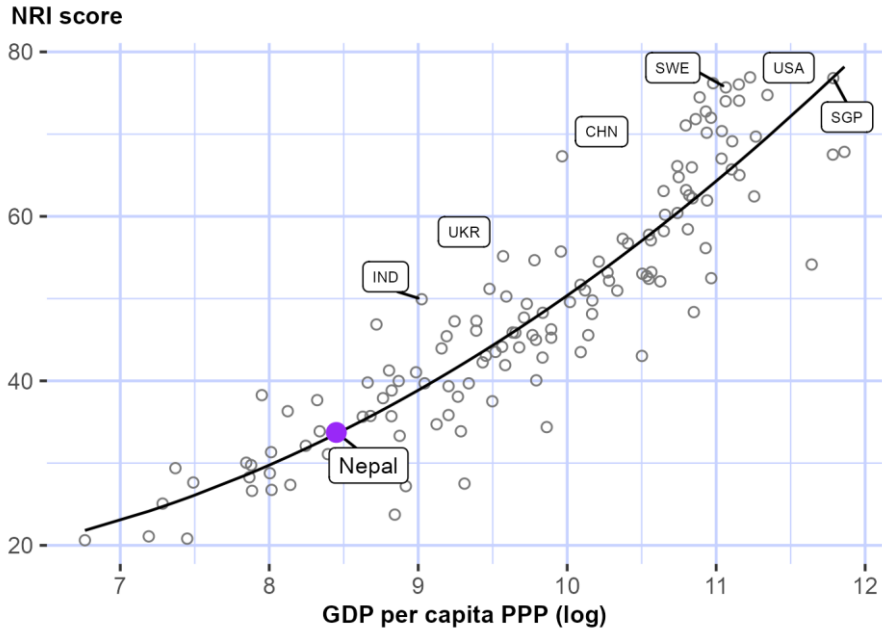
Table 1: Nepal rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Content	74	Inclusion	109
Quality of Life	81	Individuals	111
Governments	100	Regulation	113
Economy	101	Access	116
Trust	107	Future Technologies	116
SDG Contribution	107	Businesses	130

NRI score and income

Figure 3 shows the position of Nepal 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, Nepal is slightly above the trend line, which suggests that its network readiness is more or less in line with what 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). Nepal 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

Nepal is ranked 31st 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 one of the four pillars: Impact. At the sub-pillar level, it outperforms lower-middle-income countries in two of the twelve sub-pillars: Content and Quality of Life.

Asia & Pacific

Nepal is ranked 21st within Asia & Pacific (Figure 4, right panel). It lags behind its region in each of the four pillars. With regard to sub-pillars, it trails the regional average in each of them.

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

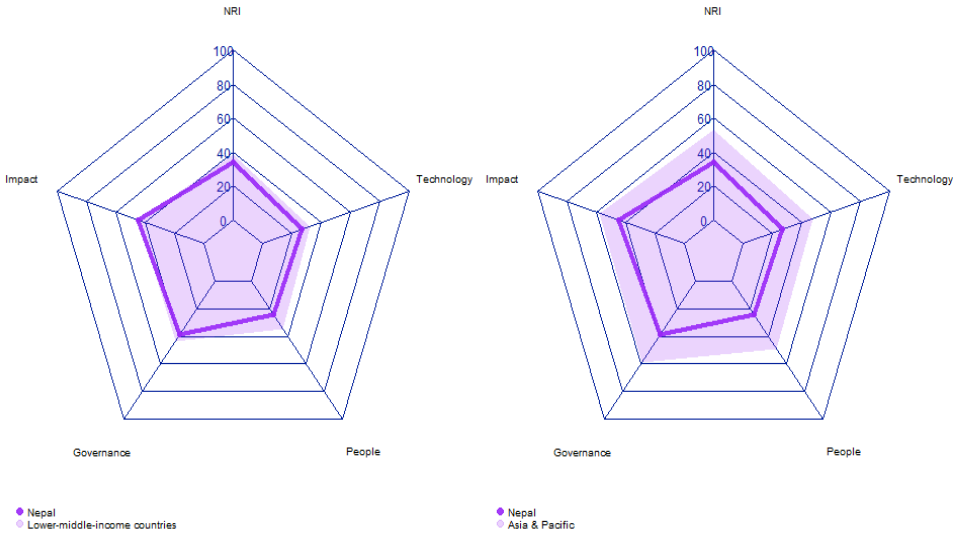


Table 2: Nepal scores vs. averages of its income group and region, overall and by pillar

Dimension	Nepal	Lower-middle-income countries	Asia & Pacific
NRI	33.73	38.41	53.28
Technology	27.04	32.12	47.34
People	24.37	34.38	48.95
Governance	38.79	43.27	59.22
Impact	44.71	43.89	57.62

Strongest and weakest indicators

The indicators where Nepal performs particularly well include 3.2.4 E-commerce legislation, 1.2.3 Mobile apps development, and 1.2.4 AI scientific publications (Table 3). By contrast, the economy's weakest indicators include 1.1.4 Population covered by at least a 3G mobile network, 3.2.2 ICT regulatory environment, and 1.1.2 Handset prices.

Table 3: Highlight of Strengths and Opportunities for Nepal

Strongest indicators	Rank	Weakest indicators	Rank
3.2.4 E-commerce legislation	1	3.2.3 Regulation of emerging technologies	113
1.2.3 Mobile apps development	45	2.1.1 Mobile broadband internet traffic within the country	115
1.2.4 AI scientific publications	48	1.1.2 Handset prices	126
1.1.3 FTTH/building Internet subscriptions	55	3.2.2 ICT regulatory environment	127
4.2.2 Freedom to make life choices	55	1.1.4 Population covered by at least a 3G mobile network	129
3.3.5 Rural gap in use of digital payments	67		
4.1.6 ICT services exports	74		
1.2.1 GitHub commits	79		
4.1.4 Domestic market size	79		
1.1.1 Mobile tariffs	80		
4.3.3 SDG 5: Women's economic opportunity	80		

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

NRI 2023 At-A-Glance: Nepal

Network Readiness Index Rank: 114 (out of 134) Score: 33.73

Pillar/sub-pillar	Rank	Score
A. Technology pillar	112	27.04
1st sub-pillar: Access	116	41.04
2nd sub-pillar: Content	74	21.67
3rd sub-pillar: Future Technologies	116	18.41
B. People pillar	122	24.37
1st sub-pillar: Individuals	111	28.72
2nd sub-pillar: Businesses	130	18.13
3rd sub-pillar: Governments	100	26.26

Pillar/sub-pillar	Rank	Score
C. Governance pillar	110	38.79
1st sub-pillar: Trust	107	24.33
2nd sub-pillar: Regulation	113	49.14
3rd sub-pillar: Inclusion	109	42.89
D. Impact pillar	100	44.71
1st sub-pillar: Economy	101	18.33
2nd sub-pillar: Quality of Life	81	64.50
3rd sub-pillar: SDG Contribution	107	51.30

The Network Readiness Index in detail

Indicator	Rank	Score	
A. Technology pillar	112	27.04	
1st sub-pillar: Access	116	41.04	
1.1.1 Mobile tariffs	80	54.00	●
1.1.2 Handset prices	126	15.01	○
1.1.3 FTTH/building Internet subscriptions	55	31.48	●
1.1.4 Population covered by at least a 3G mobile network	129	74.75	○
1.1.5 International Internet bandwidth	94	66.48	
1.1.6 Internet access in schools	80	4.53	
2nd sub-pillar: Content	74	21.67	
1.2.1 GitHub commits	79	4.19	●
1.2.2 Internet domain registrations	96	1.05	
1.2.3 Mobile apps development	45	71.84	●
1.2.4 AI scientific publications	48	9.59	●
3rd sub-pillar: Future Technologies	116	18.41	
1.3.1 Adoption of emerging technologies	108	27.45	
1.3.2 Investment in emerging technologies	107	26.25	

Indicator	Rank	Score	
C. Governance pillar	110	38.79	
1st sub-pillar: Trust	107	24.33	
3.1.1 Secure Internet servers	90	42.57	
3.1.2 Cybersecurity	98	44.02	
3.1.3 Online access to financial account	118	6.34	
3.1.4 Internet shopping	111	4.38	
2nd sub-pillar: Regulation	113	49.14	
3.2.1 Regulatory quality	104	35.67	
3.2.2 ICT regulatory environment	127	54.12	○
3.2.3 Regulation of emerging technologies	113	5.71	○
3.2.4 E-commerce legislation	1	100.00	●
3.2.5 Privacy protection by law content	96	50.19	
3rd sub-pillar: Inclusion	109	42.89	
3.3.1 E-Participation	120	22.09	
3.3.2 Socioeconomic gap in use of digital payments	103	52.44	
3.3.3 Availability of local online content	107	34.38	

Indicator		Rank	Score	
1.3.3	Robot density	NA	NA	
1.3.4	Computer software spending	119	1.53	
B. People pillar		122	24.37	
1st sub-pillar: Individuals		111	28.72	
2.1.1	Mobile broadband internet traffic within the country	115	0.55	○
2.1.2	ICT skills in the education system	84	35.12	
2.1.3	Use of virtual social networks	99	37.44	
2.1.4	Tertiary enrollment	102	9.88	
2.1.5	Adult literacy rate	92	60.61	
2.1.6	AI talent concentration	NA	NA	
2nd sub-pillar: Businesses		130	18.13	
2.2.1	Firms with website	97	19.18	
2.2.2	GERD financed by business enterprise	NA	NA	
2.2.3	Knowledge intensive employment	95	17.08	
2.2.4	Annual investment in telecommunication services	NA	NA	
2.2.5	GERD performed by business enterprise	NA	NA	
3rd sub-pillar: Governments		100	26.26	
2.3.1	Government online services	106	40.23	
2.3.2	Publication and use of open data	79	14.71	
2.3.3	Government promotion of investment in emerging tech	101	23.84	
2.3.4	R&D expenditure by governments and higher education	NA	NA	

Indicator		Rank	Score	
3.3.4	Gender gap in Internet use	NA	NA	
3.3.5	Rural gap in use of digital payments	67	62.65	●
D. Impact pillar		100	44.71	
1st sub-pillar: Economy		101	18.33	
4.1.1	High-tech and medium-high-tech manufacturing	92	9.58	
4.1.2	High-tech exports	110	1.70	
4.1.3	PCT patent applications	NA	NA	
4.1.4	Domestic market size	79	47.74	●
4.1.5	Prevalence of gig economy	107	22.09	
4.1.6	ICT services exports	74	10.53	●
2nd sub-pillar: Quality of Life		81	64.50	
4.2.1	Happiness	80	58.06	
4.2.2	Freedom to make life choices	55	78.17	●
4.2.3	Income inequality	NA	NA	
4.2.4	Healthy life expectancy at birth	99	57.28	
3rd sub-pillar: SDG Contribution		107	51.30	
4.3.1	SDG 3: Good Health and Well-Being	108	40.67	
4.3.2	SDG 4: Quality Education	NA	NA	
4.3.3	SDG 5: Women's economic opportunity	80	72.57	●
4.3.4	SDG 7: Affordable and Clean Energy	111	53.54	
4.3.5	SDG 11: Sustainable Cities and Communities	113	38.42	

NOTE: ● a strength and ○ a weakness.

Sources

Dutta, S., & Lanvin, B. (eds.) (2022). The Network Readiness Index 2022: Benchmarking the Future of the Network Economy. Washington DC: Portulans Institute.

Berry, B. (2019). berryFunctions: Function Collection Related to Plotting and Hydrology. R package version 1.18.2. URL: https://CRAN.R-project.org/package=berryFunctions

Dutta, S., & Lanvin, B. (eds.) (2019). The Network Readiness Index 2019: Towards a Future-Ready Society. Washington DC: Portulans Institute.

Dutta, S., & Lanvin, B. (eds.) (2020). The Network Readiness Index 2020: Fostering Digital Transformation in a post-COVID Global Economy. Washington DC: Portulans Institute.

Dutta, S., & Lanvin, B. (eds.) (2021). The Network Readiness Index 2021: Shaping the Global Recovery. How digital technologies can make the post-COVID world more equal. Washington DC: Portulans Institute.

Gohel, D. (2019). officer: Manipulation of Microsoft Word and PowerPoint Documents. R package version 0.3.6. URL: https://CRAN.R-project.org/package=officer

Gohel, D. (2019). flextable: Functions for Tabular Reporting. R package version 0.5.6. URL: https://CRAN.R-project.org/package=flextable

Milton Bache, S. & Wickham, H. (2014). magrittr: A Forward-Pipe Operator for R. R package version 1.5. URL: https://CRAN.R-project.org/package=magrittr

Nakazawa, M. (2019). fmsb: Functions for Medical Statistics Book with some Demographic Data. R package version 0.7.0. URL: https://CRAN.R-project.org/package=fmsb

R Core Team (2018). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL: https://www.R-project.org/.

Slowikowski, K. (2019). ggrepel: Automatically Position Non-Overlapping Text Labels with 'ggplot2'. R package version 0.8.1. URL: https://CRAN.R-project.org/package=ggrepel

Wickham, H. (2007). Reshaping Data with the reshape Package. Journal of Statistical Software, 21(12), 1-20. URL: http://www.jstatsoft.org/v21/i12/.

Wickham, H. (2016). ggplot2: Elegant Graphics for Data Analysis. Springer-Verlag. New York.

Wickham et al., (2019). Welcome to the tidyverse. Journal of Open Source Software, 4(43), 1686, URL: https://doi.org/10.21105/joss.01686