PORTULANS INSTITUTE

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Ecuador

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.
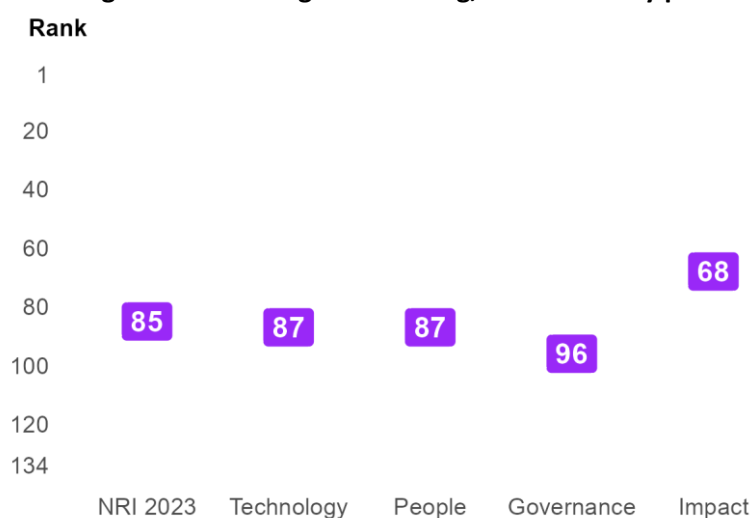
Figure 1: The NRI 2023 model
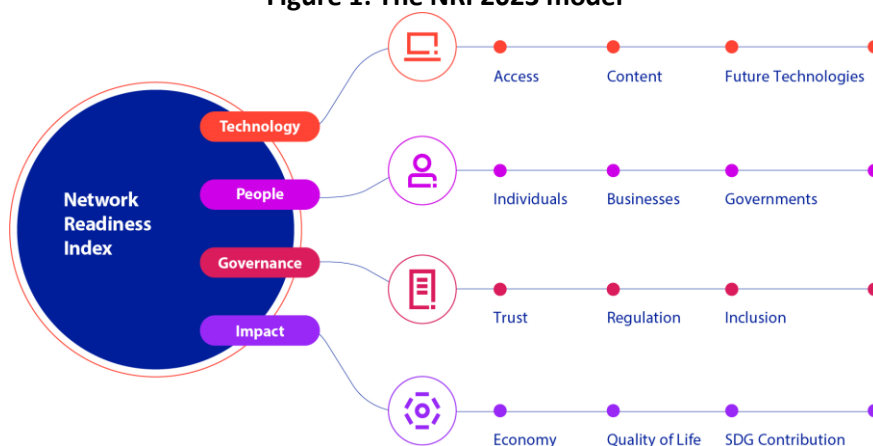
Global NRI position of Ecuador

Ecuador ranks 85th 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 Governance.

Figure 2: Ecuador global ranking, overall and by pillar

Performance at sub-pillar level

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

Table 1: Ecuador rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
SDG Contribution	23	Governments	90
Individuals	74	Businesses	92
Inclusion	76	Regulation	93
Access	82	Content	94
Quality of Life	83	Trust	108
Future Technologies	89	Economy	116

NRI score and income

Figure 3 shows the position of Ecuador 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, Ecuador is slightly below 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)
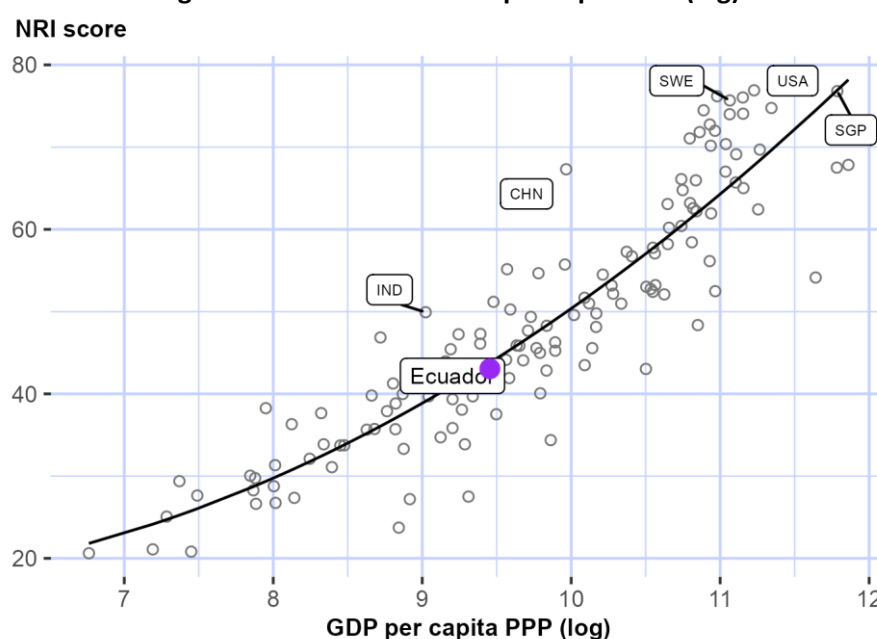
Note: USA = United States (rank: 1), SGP = Singapore (rank: 2), FIN = Finland (3), NLD = Netherlands (4), SWE = Sweden (5), CHN = China (20), IND = India (61). Ecuador belongs to the group of upper-middle-income countries, where the best performer is China (CHN). The top performer of its region-The Americas-is United States of America (USA).

Performance against its income group and region

Upper-middle-income countries
Ecuador is ranked 27th in the group of upper-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 upper-middle-income countries in one of the twelve sub-pillars: SDG Contribution.

The Americas
Ecuador is ranked 13th within The Americas (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 The Americas in two of the twelve sub-pillars: Access and SDG Contribution.

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

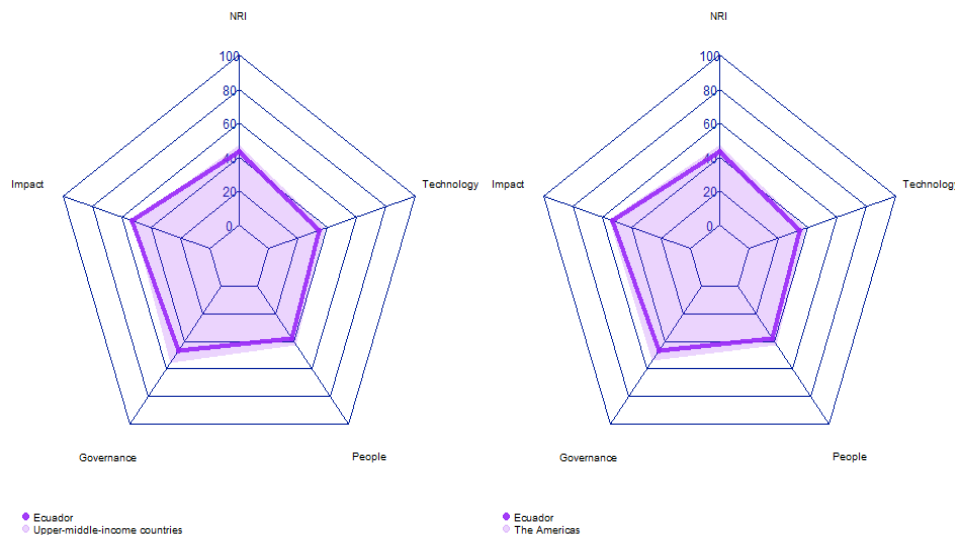**Table 2: Ecuador scores vs. averages of its income group and region, overall and by pillar**

Dimension	Ecuador	Upper-middle-income countries	The Americas
NRI	43.05	47.35	47.41
Technology	34.53	38.48	38.24
People	37.74	42.59	42.35
Governance	46.86	55.90	54.12
Impact	53.08	52.43	54.93

Strongest and weakest indicators

The indicators where Ecuador performs particularly well include 3.2.4 E-commerce legislation, 1.1.3 FTTH/building Internet subscriptions, and 2.2.1 Firms with website (Table 3). By contrast, the economy's weakest indicators include 4.1.5 Prevalence of gig economy, 1.3.2 Investment in emerging technologies, and 3.1.3 Online access to financial account.

Table 3: Highlight of Strengths and Opportunities for Ecuador

Strongest indicators	Rank	Weakest indicators	Rank
3.2.4 E-commerce legislation	1	2.1.2 ICT skills in the education system	94
1.1.3 FTTH/building Internet subscriptions	20	2.2.2 GERD financed by business enterprise	98
2.2.1 Firms with website	22	3.1.3 Online access to financial account	110
4.3.1 SDG 3: Good Health and Well-Being	29	1.3.2 Investment in emerging technologies	114
3.3.4 Gender gap in Internet use	33	4.1.5 Prevalence of gig economy	115
4.3.4 SDG 7: Affordable and Clean Energy	37		
3.3.1 E-Participation	41		
4.2.4 Healthy life expectancy at birth	42		
4.3.3 SDG 5: Women's economic opportunity	42		
2.1.3 Use of virtual social networks	49		
2.3.1 Government online services	50		

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

NRI 2023 At-A-Glance: Ecuador

Network Readiness Index   Rank: 85 (out of 134)   Score: 43.05

Pillar/sub-pillar	Rank	Score		Pillar/sub-pillar	Rank	Score
A. Technology pillar	87	34.53		C. Governance pillar	96	46.86
1st sub-pillar: Access	82	58.62		1st sub-pillar: Trust	108	24.26
2nd sub-pillar: Content	94	17.59		2nd sub-pillar: Regulation	93	58.96
3rd sub-pillar: Future Technologies	89	27.37		3rd sub-pillar: Inclusion	76	57.36
B. People pillar	87	37.74		D. Impact pillar	68	53.08
1st sub-pillar: Individuals	74	46.19		1st sub-pillar: Economy	116	15.07
2nd sub-pillar: Businesses	92	35.63		2nd sub-pillar: Quality of Life	83	63.52
3rd sub-pillar: Governments	90	31.40		3rd sub-pillar: SDG Contribution	23	80.64

The Network Readiness Index in detail

Indicator	Rank	Score		Indicator	Rank	Score	
A. Technology pillar	87	34.53		**C. Governance pillar**	96	46.86	
1st sub-pillar: Access	82	58.62		*1st sub-pillar: Trust*	108	24.26	
1.1.1 Mobile tariffs	82	52.83		3.1.1 Secure Internet servers	80	47.43	
1.1.2 Handset prices	64	47.02		3.1.2 Cybersecurity	112	25.00	
1.1.3 FTTH/building Internet subscriptions	20	48.18	●	3.1.3 Online access to financial account	110	9.80	○
1.1.4 Population covered by at least a 3G mobile network	90	98.54		3.1.4 Internet shopping	82	14.79	
1.1.5 International Internet bandwidth	104	63.55		*2nd sub-pillar: Regulation*	93	58.96	
1.1.6 Internet access in schools	55	41.59		3.2.1 Regulatory quality	110	33.73	
2nd sub-pillar: Content	94	17.59		3.2.2 ICT regulatory environment	79	76.47	
1.2.1 GitHub commits	80	4.13		3.2.3 Regulation of emerging technologies	98	24.42	
1.2.2 Internet domain registrations	85	1.62		3.2.4 E-commerce legislation	1	100.00	●
1.2.3 Mobile apps development	91	57.79		3.2.5 Privacy protection by law content	80	60.21	
1.2.4 AI scientific publications	61	6.83		*3rd sub-pillar: Inclusion*	76	57.36	
3rd sub-pillar: Future Technologies	89	27.37		3.3.1 E-Participation	41	69.76	●
1.3.1 Adoption of emerging technologies	83	38.94		3.3.2 Socioeconomic gap in use of digital payments	100	54.30	
1.3.2 Investment in emerging technologies	114	23.25	○	3.3.3 Availability of local online content	100	39.18	

Indicator	Rank	Score	
1.3.3 Robot density	NA	NA	
1.3.4 Computer software spending	69	19.93	
B. People pillar	87	37.74	
1st sub-pillar: Individuals	74	46.19	
2.1.1 Mobile broadband internet traffic within the country	67	9.40	
2.1.2 ICT skills in the education system	94	26.23	○
2.1.3 Use of virtual social networks	49	69.21	●
2.1.4 Tertiary enrollment	66	33.66	
2.1.5 Adult literacy rate	55	92.47	
2.1.6 AI talent concentration	NA	NA	
2nd sub-pillar: Businesses	92	35.63	
2.2.1 Firms with website	22	79.48	●
2.2.2 GERD financed by business enterprise	98	0.25	○
2.2.3 Knowledge intensive employment	97	15.85	
2.2.4 Annual investment in telecommunication services	67	77.82	
2.2.5 GERD performed by business enterprise	55	4.78	
3rd sub-pillar: Governments	90	31.40	
2.3.1 Government online services	50	74.04	●
2.3.2 Publication and use of open data	69	22.06	
2.3.3 Government promotion of investment in emerging tech	102	21.70	
2.3.4 R&D expenditure by governments and higher education	65	7.80	

Indicator	Rank	Score	
3.3.4 Gender gap in Internet use	33	71.07	●
3.3.5 Rural gap in use of digital payments	88	52.47	
D. Impact pillar	68	53.08	
1st sub-pillar: Economy	116	15.07	
4.1.1 High-tech and medium-high-tech manufacturing	87	11.05	
4.1.2 High-tech exports	77	8.53	
4.1.3 PCT patent applications	81	1.08	
4.1.4 Domestic market size	65	52.57	
4.1.5 Prevalence of gig economy	115	14.53	○
4.1.6 ICT services exports	108	2.65	
2nd sub-pillar: Quality of Life	83	63.52	
4.2.1 Happiness	65	65.74	
4.2.2 Freedom to make life choices	90	63.92	
4.2.3 Income inequality	99	43.22	
4.2.4 Healthy life expectancy at birth	42	81.20	●
3rd sub-pillar: SDG Contribution	23	80.64	
4.3.1 SDG 3: Good Health and Well-Being	29	85.26	●
4.3.2 SDG 4: Quality Education	NA	NA	
4.3.3 SDG 5: Women's economic opportunity	42	84.96	●
4.3.4 SDG 7: Affordable and Clean Energy	37	77.60	●
4.3.5 SDG 11: Sustainable Cities and Communities	50	74.75	

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