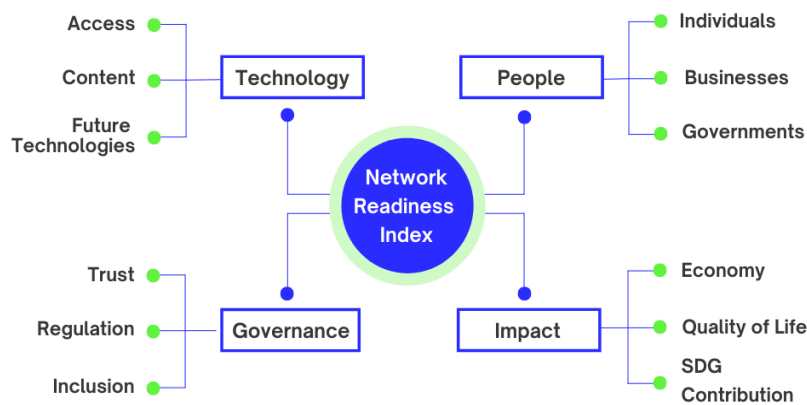


Network Readiness Index 2022

Romania

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 2022 the NRI Report maps the network-based readiness landscape of 131 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.

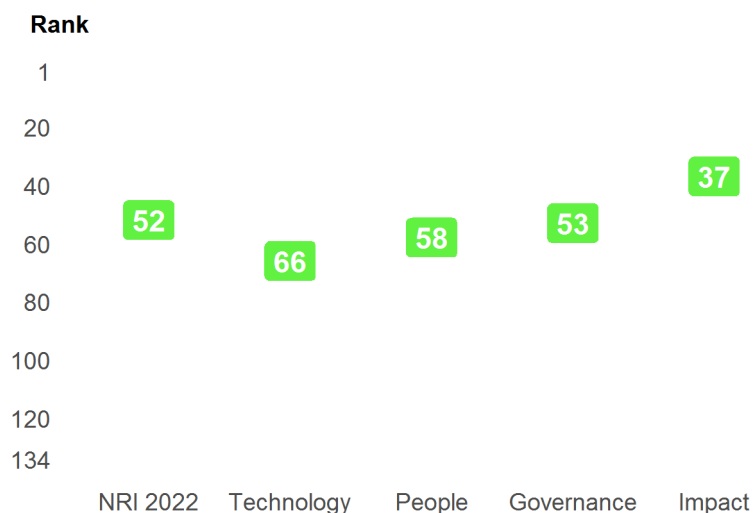
Figure 1: The NRI 2022 model



Global NRI position of Romania

Romania ranks 52nd out of the 131 economies included in the NRI 2022 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Romania global ranking, overall and by pillar



Performance at sub-pillar level

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

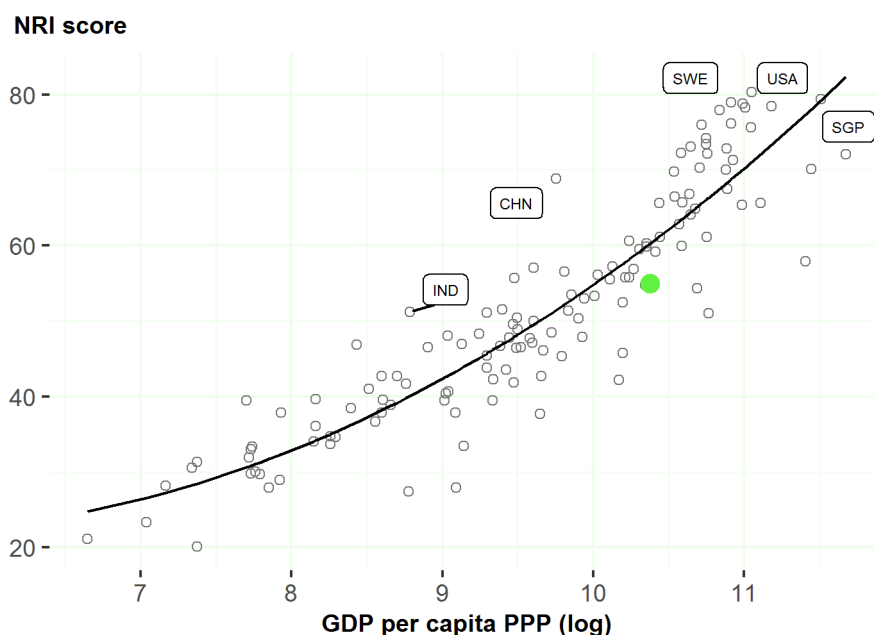
Table 1: Romania rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Economy	29	Access	57
Quality of Life	36	SDG Contribution	58
Regulation	44	Inclusion	63
Individuals	45	Content	64
Trust	51	Governments	76
Businesses	52	Future Technologies	84

NRI score and income

Figure 3 shows the position of Romania 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, Romania is well below the trend line, which suggests that it is underachieving and that one would expect it could raise its network readiness in view of its income level.

Figure 3: NRI score and GDP per capita PPP (log)



Note: USA = United States (rank: 1), SGP = Singapore (rank: 2), SWE = Sweden (3), CHN = China (23), IND = India (61). Netherlands (NLD) is ranked 4th. Romania belongs to the group of high-income countries, where the best performer is United States of America (USA). The top performer of its region-Europe-is Sweden (SWE).

Performance against its income group and region

High-income countries

Romania is ranked 44th in the group of high-income countries (Figure 4, left panel). In terms of pillar performance, it has a score below the income group average in each of the four pillars. At the sub-pillar level, it trails high-income countries in all of them.

Europe

Romania is ranked 34th within Europe (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 Europe in one of the twelve sub-pillars: Individuals.

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

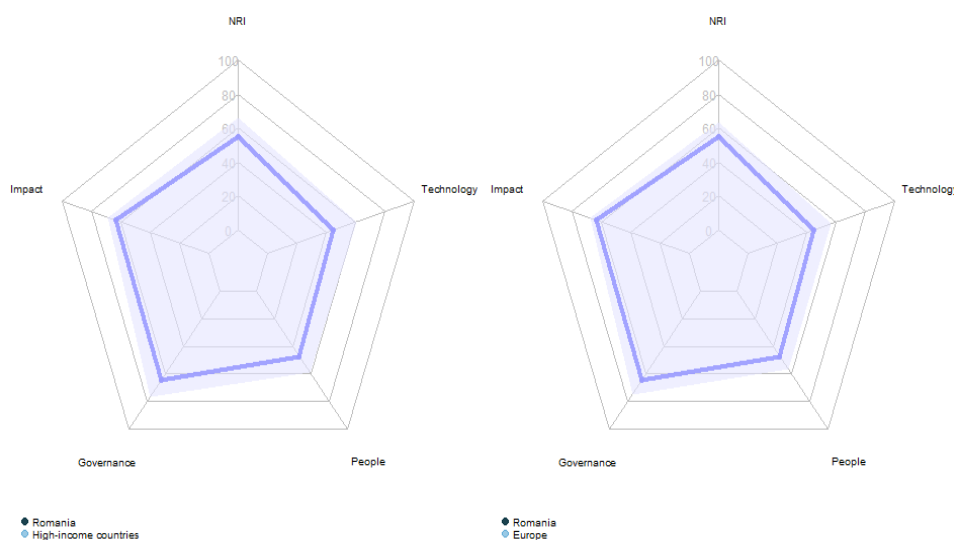


Table 2: Romania scores vs. averages of its income group and region, overall and by pillar

Dimension	Romania	High-income countries	Europe
NRI	54.89	66.21	63.72
Technology	44.45	60.28	56.43
People	47.38	58.83	56.35
Governance	64.31	76.89	74.79
Impact	63.41	68.86	67.30

Strongest and weakest indicators

The indicators where Romania performs particularly well include 3.2.4 E-commerce legislation, 4.1.6 ICT services exports, and 4.3.4 SDG 7: Affordable and Clean Energy (Table 3). By contrast, the economy's weakest indicators include 1.3.2 Investment in emerging technologies, 4.3.5 SDG 11: Sustainable Cities and Communities, and 3.3.5 Rural gap in use of digital payments.

Table 3: Strongest and weakest indicators of Romania

Strongest indicators	Rank	Weakest indicators	Rank
3.2.4 E-commerce legislation	1	3.3.4 Gender gap in Internet use	72
4.1.6 ICT services exports	10	2.3.4 R&D expenditure by governments and higher education	79
4.3.4 SDG 7: Affordable and Clean Energy	14	3.3.5 Rural gap in use of digital payments	91
1.1.3 FTTH/building Internet subscriptions	16	1.3.2 Investment in emerging technologies	92
2.1.5 Adult literacy rate	21	4.3.5 SDG 11: Sustainable Cities and Communities	92
2.2.2 GERD financed by business enterprise	21		
4.1.1 High-tech and medium-high-tech manufacturing	23		
1.1.4 Population covered by at least a 3G mobile network	24		
4.1.2 High-tech exports	26		
4.2.1 Happiness	27		
3.2.2 ICT regulatory environment	30		

NRI 2022 At-A-Glance: Romania

Network Readiness Index

Rank: 52 (out of 131)

Score: 54.89

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	66	44.45	C. Governance pillar	53	64.31
1st sub-pillar: Access	57	68.28	1st sub-pillar: Trust	51	55.51
2nd sub-pillar: Content	64	37.00	2nd sub-pillar: Regulation	44	71.35
3rd sub-pillar: Future Technologies	84	28.06	3rd sub-pillar: Inclusion	63	66.08
B. People pillar	58	47.38	D. Impact pillar	37	63.41
1st sub-pillar: Individuals	45	52.97	1st sub-pillar: Economy	29	45.33
2nd sub-pillar: Businesses	52	48.92	2nd sub-pillar: Quality of Life	36	77.12
3rd sub-pillar: Governments	76	40.27	3rd sub-pillar: SDG Contribution	58	67.79

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar	66	44.45	C. Governance pillar	53	64.31
1st sub-pillar: Access	57	68.28	1st sub-pillar: Trust	51	55.51
1.1.1 Mobile tariffs	44	70.87	3.1.1 Secure Internet servers	33	79.56
1.1.2 Handset prices	66	51.69	3.1.2 Cybersecurity	70	75.87
1.1.3 FTTH/building Internet subscriptions	16	47.60	3.1.3 Online access to financial account	73	23.59
1.1.4 Population covered by at least a 3G mobile network	24	99.99	3.1.4 Internet shopping	45	43.03
1.1.5 International Internet bandwidth	64	71.27	2nd sub-pillar: Regulation	44	71.35
1.1.6 Internet access in schools	NA	NA	3.2.1 Regulatory quality	54	51.20
2nd sub-pillar: Content	64	37.00	3.2.2 ICT regulatory environment	30	90.59
1.2.1 GitHub commits	44	14.15	3.2.3 Regulation of emerging technologies	54	48.16
1.2.2 Internet domain registrations	43	11.10	3.2.4 E-commerce legislation	1	100.00
1.2.3 Mobile apps development	43	85.75	3.2.5 Privacy protection by law content	63	66.81
1.2.4 AI scientific publications	NA	NA	3rd sub-pillar: Inclusion	63	66.08
3rd sub-pillar: Future Technologies	84	28.06	3.3.1 E-Participation	46	80.24
1.3.1 Adoption of emerging technologies	50	52.70	3.3.2 Socioeconomic gap in use of digital payments	79	61.43
1.3.2 Investment in emerging technologies	92	31.25	3.3.3 Availability of local online content	45	71.88
1.3.3 Robot density	38	4.79	3.3.4 Gender gap in Internet use	72	67.11
1.3.4 Computer software spending	49	23.50	3.3.5 Rural gap in use of digital payments	91	49.73

Indicator	Rank	Score	Indicator	Rank	Score
B. People pillar	58	47.38	D. Impact pillar	37	63.41
<i>1st sub-pillar: Individuals</i>	45	52.97	<i>1st sub-pillar: Economy</i>	29	45.33
2.1.1 Mobile broadband internet traffic within the country	42	16.34	4.1.1 High-tech and medium-high-tech manufacturing	23	57.02 ●
2.1.2 ICT skills in the education system	56	51.48	4.1.2 High-tech exports	26	53.83 ●
2.1.3 Use of virtual social networks	71	64.65	4.1.3 PCT patent applications	78	1.71
2.1.4 Tertiary enrollment	62	33.81	4.1.4 Domestic market size	35	63.48
2.1.5 Adult literacy rate	21	98.55 ●	4.1.5 Prevalence of gig economy	76	36.34
2.1.6 AI talent concentration	NA	NA	4.1.6 ICT services exports	10	59.61 ●
<i>2nd sub-pillar: Businesses</i>	52	48.92	<i>2nd sub-pillar: Quality of Life</i>	36	77.12
2.2.1 Firms with website	65	49.45	4.2.1 Happiness	27	77.82 ●
2.2.2 GERD financed by business enterprise	21	67.52 ●	4.2.2 Freedom to make life choices	33	84.06
2.2.3 Knowledge intensive employment	54	40.58	4.2.3 Income inequality	51	70.85
2.2.4 Annual investment in telecommunication services	46	79.77	4.2.4 Healthy life expectancy at birth	56	75.73
2.2.5 GERD performed by business enterprise	48	7.26	<i>3rd sub-pillar: SDG Contribution</i>	58	67.79
<i>3rd sub-pillar: Governments</i>	76	40.27	4.3.1 SDG 3: Good Health and Well-Being	63	70.74
2.3.1 Government online services	60	71.51	4.3.2 SDG 4: Quality Education	48	40.49
2.3.2 Publication and use of open data	NA	NA	4.3.3 SDG 5: Women's economic opportunity	35	86.84
2.3.3 Government promotion of investment in emerging tech	81	32.45	4.3.4 SDG 7: Affordable and Clean Energy	14	91.14 ●
2.3.4 R&D expenditure by governments and higher education	79	16.85 ○	4.3.5 SDG 11: Sustainable Cities and Communities	92	49.71 ○

NOTE: ● a strength and ○ a weakness.

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