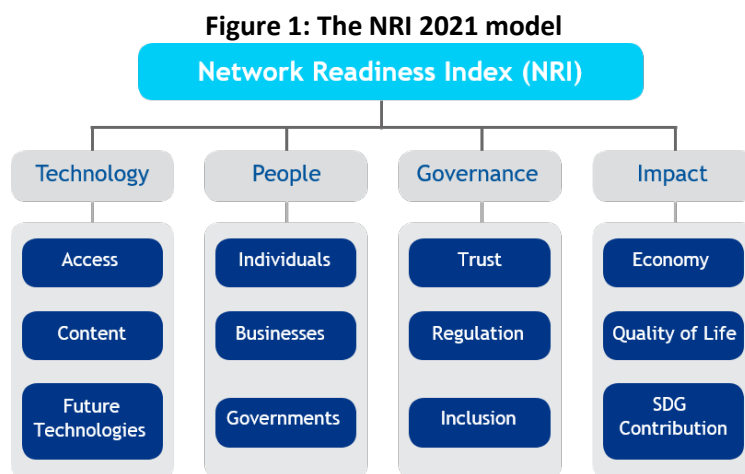


Network Readiness Index 2021 Turkey

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 2021 the NRI Report maps the network-based readiness landscape of 130 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 60 variables.



Global NRI position of Turkey

Turkey ranks 45th out of the 130 economies included in the NRI 2021 (Figure 2). Its main strength relates to People. The greatest scope for improvement, meanwhile, concerns Impact.



Performance at sub-pillar level

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

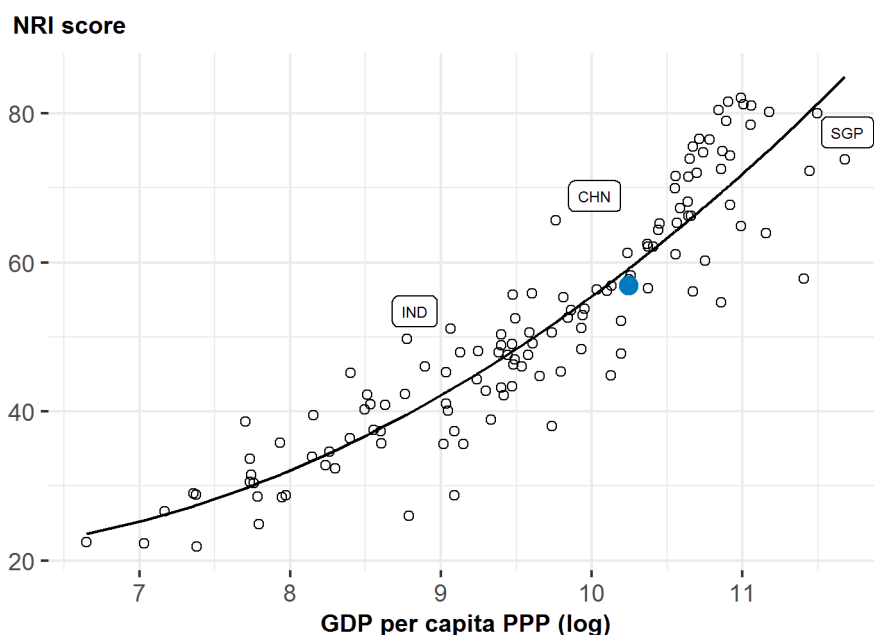
Table 1: Turkey rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Individuals	1	Businesses	53
Access	38	Economy	54
Governments	39	Inclusion	58
Trust	44	Regulation	59
SDG Contribution	45	Future Technologies	68
Content	46	Quality of Life	108

NRI score and income

Figure 3 shows the position of Turkey 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, Turkey 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: NLD = Netherlands (rank: 1), SWE = Sweden (2), DNK = Denmark (3), CHN = China (29), IND = India (67). USA is ranked 4th. Turkey belongs to the group of upper-middle-income countries, where the best performer is China (CHN). The top performer of its region-Europe-is Netherlands (NLD).

Performance against its income group and region

Upper-middle-income countries

Turkey is ranked 4th 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 each of the four pillars. At the sub-pillar level, it outperforms upper-middle-income countries in eleven of the twelve sub-pillars: Access, Content, Future Technologies, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy and SDG Contribution.

Europe

Turkey is ranked 30th 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 two of the twelve sub-pillars: Access and Individuals.

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

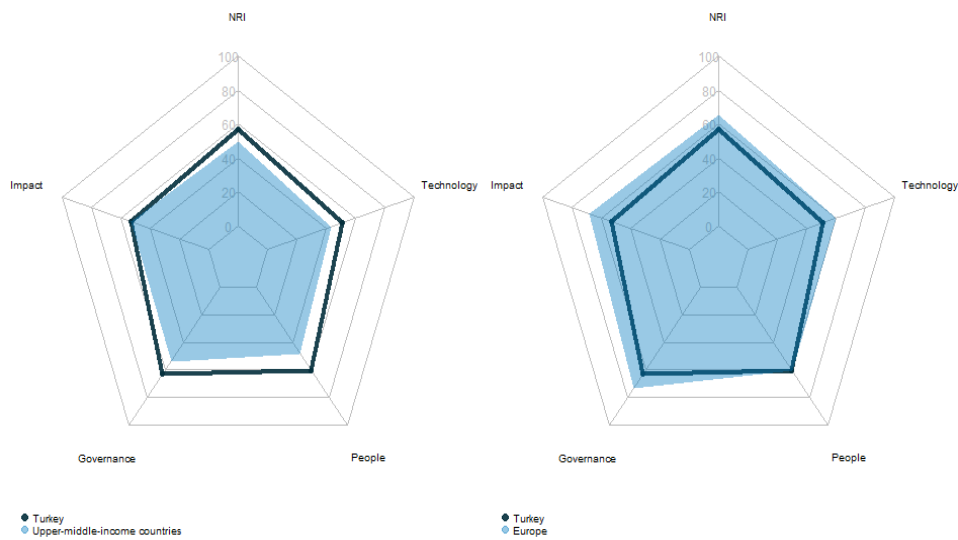


Table 2: Turkey scores vs. averages of its income group and region, overall and by pillar

Dimension	Turkey	Upper-middle-income countries	Europe
NRI	56.88	49.71	65.45
Technology	50.98	43.52	59.78
People	60.22	48.48	60.83
Governance	63.16	53.94	73.31
Impact	53.17	52.89	67.86

Strongest and weakest indicators

The indicators where Turkey performs particularly well include 3.2.4 E-commerce legislation, 2.1.4 Tertiary enrollment, and 1.1.6 International Internet bandwidth (Table 3). By contrast, the economy's weakest indicators include 4.2.2 Freedom to make life choices, 1.3.2 Investment in emerging technologies, and 3.2.5 Privacy protection by law content.

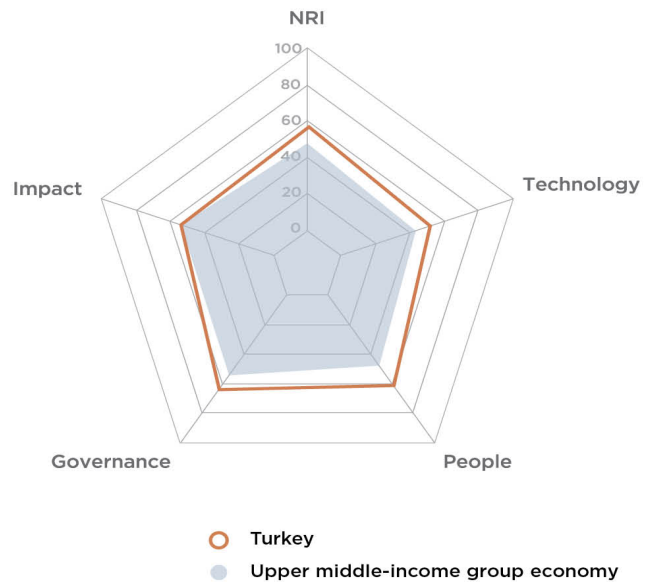
Table 3: Strongest and weakest indicators of Turkey

Strongest indicators	Rank	Weakest indicators	Rank
3.2.4 E-commerce legislation	1	3.3.4 Gender gap in Internet use	83
2.1.4 Tertiary enrollment	2	4.2.1 Happiness	99
1.1.6 International Internet bandwidth	7	3.2.5 Privacy protection by law content	100
1.1.4 SMS sent by population 15-69	9	1.3.2 Investment in emerging technologies	103
4.1.4 Growth rate of GDP per person engaged	10	4.2.2 Freedom to make life choices	125
1.2.5 AI scientific publications	16		
3.1.2 Cybersecurity	16		
2.1.1 Active mobile broadband subscriptions	18		
2.2.5 Annual investment in telecommunication services	19		
1.3.4 Computer software spending	20		
4.3.4 SDG 7: Affordable and Clean Energy	21		

Turkey

Network Readiness Index Rank (out of 130) **45** Score **56.88**

Pillar/sub-pillar	Rank	Score
A. Technology pillar	46	50.98
1st sub-pillar: Access	38	77.95
2nd sub-pillar: Content	46	43.20
3rd sub-pillar: Future Technologies	68	31.79
B. People pillar	31	60.22
1st sub-pillar: Individuals	1	82.59
2nd sub-pillar: Businesses	53	45.68
3rd sub-pillar: Governments	39	52.39
C. Governance pillar	48	63.16
1st sub-pillar: Trust	44	59.63
2nd sub-pillar: Regulation	59	65.28
3rd sub-pillar: Inclusion	58	64.58
D. Impact pillar	74	53.17
1st sub-pillar: Economy	54	42.67
2nd sub-pillar: Quality of Life	108	48.73
3rd sub-pillar: SDG Contribution	45	68.11



Network Readiness Index in detail

Indicator	Rank	Score
A. Technology pillar	46	50.98
1st sub-pillar: Access	38	77.95
1.1.1 Mobile tariffs	44	69.96
1.1.2 Handset prices	83	44.77
1.1.3 Households with internet access	29	90.89
1.1.4 SMS sent by population 15-69	9	88.23 ●
1.1.5 Population covered by at least a 3G mobile network	62	99.72
1.1.6 International Internet bandwidth	7	74.14 ●
1.1.7 Internet access in schools	NA	NA
2nd sub-pillar: Content	46	43.20
1.2.1 GitHub commits	63	3.56
1.2.2 Wikipedia edits	62	53.13
1.2.3 Internet domain registrations	*	*
1.2.4 Mobile apps development	46	82.17
1.2.5 AI scientific publications	16	70.44 ●
3rd sub-pillar: Future Technologies	68	31.79
1.3.1 Adoption of emerging technologies	58	49.37
1.3.2 Investment in emerging technologies	103	27.62 ○
1.3.3 Robot density	34	7.80
1.3.4 Computer software spending	20	42.38 ●
B. People pillar	31	60.22
1st sub-pillar: Individuals	1	82.59
2.1.1 Active mobile broadband subscriptions	18	85.48 ●
2.1.2 ICT skills	NA	NA
2.1.3 Use of virtual social networks	55	70.69
2.1.4 Tertiary enrollment	2	79.13 ●
2.1.5 Adult literacy rate	38	95.08
2nd sub-pillar: Businesses	53	45.68
2.2.1 Firms with website	62	51.20
2.2.2 GERD financed by business enterprise	18	69.63
2.2.3 Professionals	61	26.88
2.2.4 Technicians and associate professionals	77	25.85
2.2.5 Annual investment in telecommunication services	19	85.09 ●
2.2.6 GERD performed by business enterprise	33	15.45
3rd sub-pillar: Governments	39	52.39
2.3.1 Government online services	22	85.45
2.3.2 Publication and use of open data	43	36.70
2.3.3 Government promotion of investment in emerging tech	38	50.34
2.3.4 R&D expenditure by governments and higher education	49	37.05

Indicator	Rank	Score
C. Governance pillar	48	63.16
1st sub-pillar: Trust	44	59.63
3.1.1 Secure Internet servers	46	70.37
3.1.2 Cybersecurity	16	97.45 ●
3.1.3 Online access to financial account	41	43.39
3.1.4 Internet shopping	49	27.31
2nd sub-pillar: Regulation	59	65.28
3.2.1 Regulatory quality	71	40.92
3.2.2 ICT regulatory environment	20	93.53
3.2.3 Legal framework's adaptability to emerging technologies	61	43.18
3.2.4 E-commerce legislation	1	100.00 ●
3.2.5 Privacy protection by law content	100	48.76 ○
3rd sub-pillar: Inclusion	58	64.58
3.3.1 E-Participation	23	88.89
3.3.2 Socioeconomic gap in use of digital payments	61	61.39
3.3.3 Availability of local online content	46	69.95
3.3.4 Gender gap in Internet use	83	42.86 ○
3.3.5 Rural gap in use of digital payments	77	59.78
D. Impact pillar	74	53.17
1st sub-pillar: Economy	54	42.67
4.1.1 High-tech and medium-high-tech manufacturing	53	28.64
4.1.2 High-tech exports	59	27.85
4.1.3 PCT patent applications	31	62.34
4.1.4 Growth rate of GDP per person engaged	10	80.66 ●
4.1.5 Prevalence of gig economy	64	42.00
4.1.6 ICT services exports	92	14.51
2nd sub-pillar: Quality of Life	108	48.73
4.2.1 Happiness	99	35.98 ○
4.2.2 Freedom to make life choices	125	23.02 ○
4.2.3 Income inequality	85	54.95
4.2.4 Healthy life expectancy at birth	43	80.97
3rd sub-pillar: SDG Contribution	45	68.11
4.3.1 SDG 3: Good Health and Well-Being	53	75.41
4.3.2 SDG 4: Quality Education	40	52.41
4.3.3 Females employed with advanced degrees	67	33.01
4.3.4 SDG 7: Affordable and Clean Energy	21	87.14 ●
4.3.5 SDG 11: Sustainable Cities and Communities	30	92.60

NOTE: * Indicates confidential data; ● a strength and ○ a weakness.

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