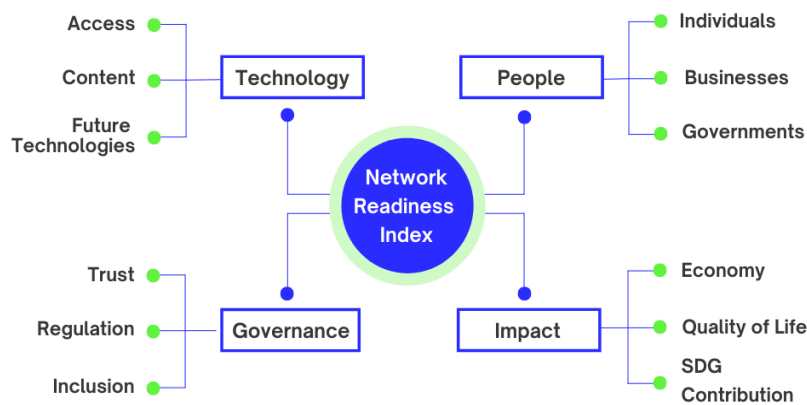


Network Readiness Index 2022 Portugal

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.

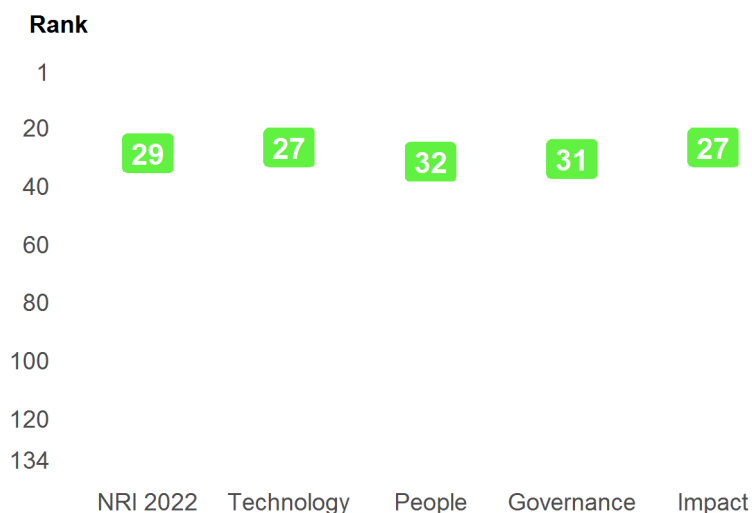
Figure 1: The NRI 2022 model



Global NRI position of Portugal

Portugal ranks 29th out of the 131 economies included in the NRI 2022 (Figure 2). Its main strength relates to Technology and Impact. The greatest scope for improvement, meanwhile, concerns People.

Figure 2: Portugal global ranking, overall and by pillar



Performance at sub-pillar level

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

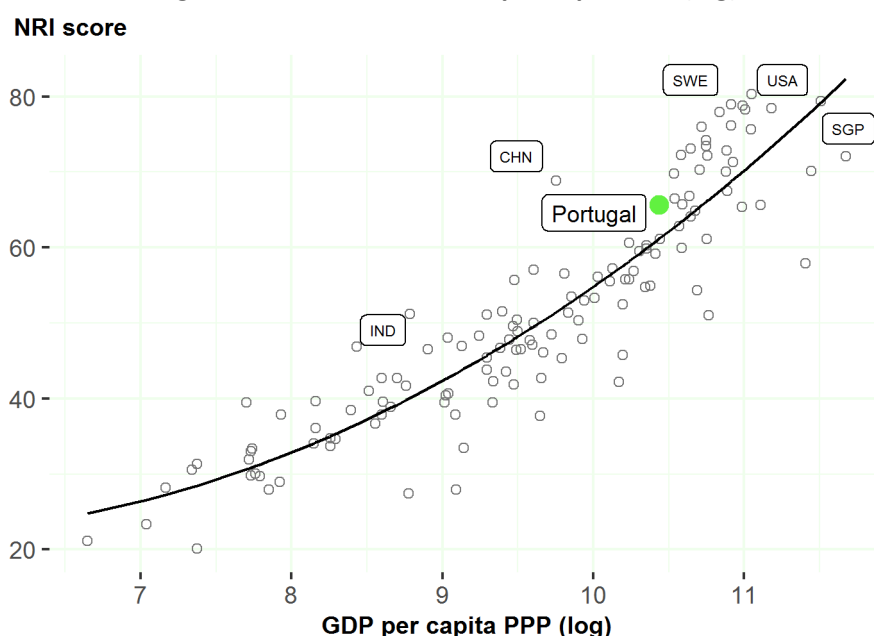
Table 1: Portugal rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
SDG Contribution	11	Access	29
Regulation	14	Businesses	34
Quality of Life	25	Economy	37
Future Technologies	26	Inclusion	38
Content	27	Trust	43
Governments	28	Individuals	52

NRI score and income

Figure 3 shows the position of Portugal 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, Portugal 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), SWE = Sweden (3), CHN = China (23), IND = India (61). Netherlands (NLD) is ranked 4th. Portugal 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

Portugal is ranked 28th in the group of high-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 high-income countries in four of the twelve sub-pillars: Access, Regulation, Quality of Life and SDG Contribution.

Europe

Portugal is ranked 20th within Europe (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Europe in seven of the twelve sub-pillars: Access, Future Technologies, Governments, Regulation, Inclusion, Quality of Life and SDG Contribution.

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

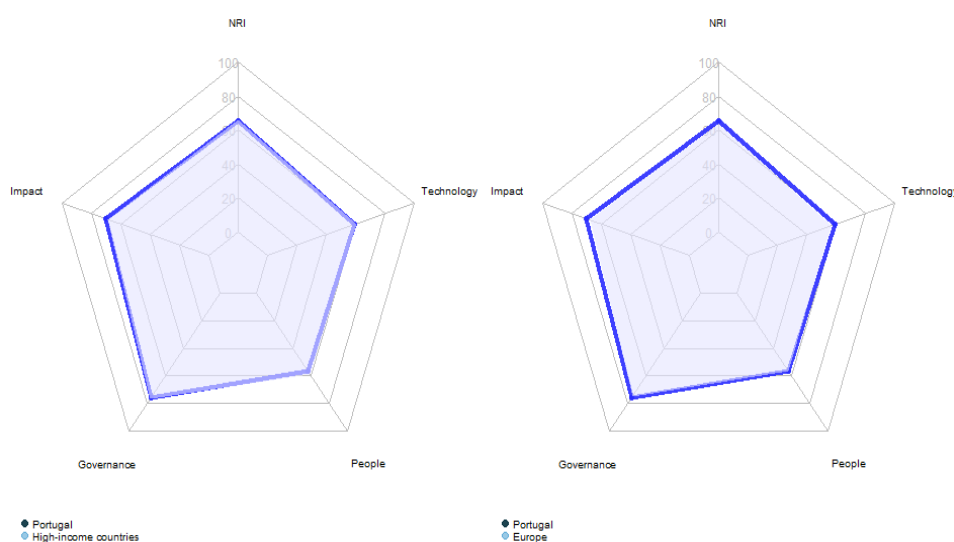


Table 2: Portugal scores vs. averages of its income group and region, overall and by pillar

Dimension	Portugal	High-income countries	Europe
NRI	65.63	66.21	63.72
Technology	59.34	60.28	56.43
People	56.79	58.83	56.35
Governance	76.14	76.89	74.79
Impact	70.26	68.86	67.30

Strongest and weakest indicators

The indicators where Portugal performs particularly well include 1.1.6 Internet access in schools, 3.2.4 E-commerce legislation, and 3.2.5 Privacy protection by law content (Table 3). By contrast, the economy's weakest indicators include 1.1.1 Mobile tariffs, 3.3.4 Gender gap in Internet use, and 2.1.1 Mobile broadband internet traffic within the country.

Table 3: Strongest and weakest indicators of Portugal

Strongest indicators	Rank	Weakest indicators	Rank
1.1.6 Internet access in schools	1	2.1.6 AI talent concentration	33
3.2.4 E-commerce legislation	1	2.1.1 Mobile broadband internet traffic within the country	61
3.2.5 Privacy protection by law content	1	1.1.1 Mobile tariffs	63
4.3.3 SDG 5: Women's economic opportunity	1	3.3.4 Gender gap in Internet use	63
1.3.4 Computer software spending	6		
3.2.2 ICT regulatory environment	14		
4.3.1 SDG 3: Good Health and Well-Being	18		
1.2.2 Internet domain registrations	19		
4.3.4 SDG 7: Affordable and Clean Energy	19		
3.1.2 Cybersecurity	20		
4.2.4 Healthy life expectancy at birth	20		
3.3.5 Rural gap in use of digital payments	22		

NRI 2022 At-A-Glance: Portugal

Network Readiness Index

Rank: 29 (out of 131)

Score: 65.63

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	27	59.34	C. Governance pillar	31	76.14
1st sub-pillar: Access	29	74.74	1st sub-pillar: Trust	43	64.77
2nd sub-pillar: Content	27	55.37	2nd sub-pillar: Regulation	14	86.20
3rd sub-pillar: Future Technologies	26	47.92	3rd sub-pillar: Inclusion	38	77.45
B. People pillar	32	56.79	D. Impact pillar	27	70.26
1st sub-pillar: Individuals	52	51.46	1st sub-pillar: Economy	37	42.66
2nd sub-pillar: Businesses	34	59.21	2nd sub-pillar: Quality of Life	25	81.08
3rd sub-pillar: Governments	28	59.71	3rd sub-pillar: SDG Contribution	11	87.04

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar	27	59.34	C. Governance pillar	31	76.14
<i>1st sub-pillar: Access</i>	29	74.74	<i>1st sub-pillar: Trust</i>	43	64.77
1.1.1 Mobile tariffs	63	60.99	3.1.1 Secure Internet servers	31	79.85
1.1.2 Handset prices	31	72.58	3.1.2 Cybersecurity	20	97.27
1.1.3 FTTH/building Internet subscriptions	24	41.49	3.1.3 Online access to financial account	52	34.56
1.1.4 Population covered by at least a 3G mobile network	28	99.97	3.1.4 Internet shopping	42	47.38
1.1.5 International Internet bandwidth	50	73.41	<i>2nd sub-pillar: Regulation</i>	14	86.20
1.1.6 Internet access in schools	1	100.00	3.2.1 Regulatory quality	37	63.20
<i>2nd sub-pillar: Content</i>	27	55.37	3.2.2 ICT regulatory environment	14	94.12
1.2.1 GitHub commits	33	27.33	3.2.3 Regulation of emerging technologies	23	73.68
1.2.2 Internet domain registrations	19	49.15	3.2.4 E-commerce legislation	1	100.00
1.2.3 Mobile apps development	34	89.62	3.2.5 Privacy protection by law content	1	100.00
1.2.4 AI scientific publications	NA	NA	<i>3rd sub-pillar: Inclusion</i>	38	77.45
<i>3rd sub-pillar: Future Technologies</i>	26	47.92	3.3.1 E-Participation	41	81.48
1.3.1 Adoption of emerging technologies	27	70.91	3.3.2 Socioeconomic gap in use of digital payments	48	84.24
1.3.2 Investment in emerging technologies	39	52.75	3.3.3 Availability of local online content	37	77.64
1.3.3 Robot density	25	12.07	3.3.4 Gender gap in Internet use	63	68.05
1.3.4 Computer software spending	6	55.95	3.3.5 Rural gap in use of digital payments	22	75.82
B. People pillar	32	56.79	D. Impact pillar	27	70.26

Indicator	Rank	Score	Indicator	Rank	Score
<i>1st sub-pillar: Individuals</i>	52	51.46	<i>1st sub-pillar: Economy</i>	37	42.66
2.1.1 Mobile broadband internet traffic within the country	61	8.60	4.1.1 High-tech and medium-high-tech manufacturing	42	39.21
2.1.2 ICT skills in the education system	25	69.82	4.1.2 High-tech exports	43	40.67
2.1.3 Use of virtual social networks	29	78.29	4.1.3 PCT patent applications	30	21.20
2.1.4 Tertiary enrollment	38	45.10	4.1.4 Domestic market size	50	58.03
2.1.5 Adult literacy rate	40	95.06	4.1.5 Prevalence of gig economy	36	57.85
2.1.6 AI talent concentration	33	11.89	4.1.6 ICT services exports	43	39.03
<i>2nd sub-pillar: Businesses</i>	34	59.21	<i>2nd sub-pillar: Quality of Life</i>	25	81.08
2.2.1 Firms with website	53	60.69	4.2.1 Happiness	46	71.31
2.2.2 GERD financed by business enterprise	26	64.55	4.2.2 Freedom to make life choices	25	87.64
2.2.3 Knowledge intensive employment	27	65.90	4.2.3 Income inequality	36	75.88
2.2.4 Annual investment in telecommunication services	42	80.69	4.2.4 Healthy life expectancy at birth	20	89.50
2.2.5 GERD performed by business enterprise	24	24.19	<i>3rd sub-pillar: SDG Contribution</i>	11	87.04
<i>3rd sub-pillar: Governments</i>	28	59.71	4.3.1 SDG 3: Good Health and Well-Being	18	91.85
2.3.1 Government online services	35	83.03	4.3.2 SDG 4: Quality Education	26	65.75
2.3.2 Publication and use of open data	36	42.65	4.3.3 SDG 5: Women's economic opportunity	1	100.00
2.3.3 Government promotion of investment in emerging tech	30	54.44	4.3.4 SDG 7: Affordable and Clean Energy	19	89.81
2.3.4 R&D expenditure by governments and higher education	20	58.73	4.3.5 SDG 11: Sustainable Cities and Communities	24	87.79

NOTE: ● a strength and ○ a weakness.

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